

Subject: Executed Land & Design, Inc. DDA June 14, 2011
From: Paul Guerrero <paulg@ci.garden-grove.ca.us>
Date: Fri, 1 Jul 2011 13:53:57 -0700 (PDT)
To: Greg Blodgett <greg1@ci.garden-grove.ca.us>, matt.reid@landanddesign.com

Matt,
Attached is the executed Land & Design, Inc. DDA, June 14, 2011.
Paul

Executed Land & Design, Inc. DDA June 14, 2011.pdf	Content-Type: application/pdf Content-Encoding: base64
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DISPOSITION AND DEVELOPMENT AGREEMENT

By and Between

GARDEN GROVE AGENCY FOR COMMUNITY DEVELOPMENT

and

LAND & DESIGN, INC.

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DISPOSITION AND DEVELOPMENT AGREEMENT

This **DISPOSITION AND DEVELOPMENT AGREEMENT** (this "Agreement") dated for purposes of identification only as of June __, 2011 (the "Date of this Agreement"), is entered into by and between the **GARDEN GROVE AGENCY FOR COMMUNITY DEVELOPMENT**, a public body, corporate and politic (the "Agency"), and **LAND & DESIGN, INC.**, a California corporation (the "Developer").

RECITALS

A. The Redevelopment Plan for the Garden Grove Community Project was approved and adopted by the City Council of the City of Garden Grove by Ordinance No. 1339, as amended by Ordinance Nos. 1388, 1476, 1548, 1576, 1642, 1699, 1760, 2035 and 2232; said ordinances and the Redevelopment Plan as so approved and amended (the "Redevelopment Plan") are incorporated herein by reference. The property within the geographical boundaries of the Redevelopment Plan are described in the Redevelopment Plan and are referred to as the "Project Area."

B. The property which is the subject of this Agreement is approximately five acres (5) acres located within the boundaries of the Project Area and is comprised of certain property owned by the Agency ("Agency Property") and property currently owned by third parties ("Third Party Property"). The Agency Property and Third Party Property are shown on the Site Map (Exhibit A) and legally described in the Legal Description (Exhibit B) (the "Site").

C. The Developer has proposed a hotel with approximately nineteen (19) stories and between three hundred (300) and four hundred rooms (400), including not less than ten thousand (10,000) square feet of meeting space (collectively, the "Upper Upscale Hotel"), as well as a minimum of ten thousand (10,000) and a maximum of sixty-five thousand (65,000) square feet of retail/restaurant/entertainment, including one (1) or more restaurants (the "Retail/Restaurant/Entertainment Component"), a Parking Structure, all as more specifically described in the Scope of Development (Exhibit C), and such other improvements as may be required by the Land Use Approvals (collectively, the "Upper Upscale Hotel Component"). In addition, Developer has also proposed up to two (2) Limited/Select/Focus Service/Suites/Extended Stay type hotels (collectively, the "Limited Service Hotels" and each a "Limited Service Hotel"), consisting of approximately 125 – 200 rooms each. The Limited Service Hotels are more specifically described in the Scope of Development. The Upper Upscale Hotel, the Limited Service Hotels, Retail/Restaurant/Entertainment Component, Parking Structure, and the other improvements required to be constructed on the Site pursuant to this Agreement and the Land Use Approvals are collectively referred to herein as the "Developer Improvements" or "Project," and individually "Separate Component(s)."

D. The Agency and the Developer desire by this Agreement, and subject to its terms and provisions, (1) to provide for the Agency, (a) to sell the Site to the Developer in accordance with the terms contained herein, (b) to pay the Covenant Consideration, (c) to accommodate, if economically feasible and legally permissible, the financing of the Parking Facility, and (d) to

construct the Agency Improvements, and (2) for the Developer (a) to purchase the Site, and (b) to construct and operate the Developer Improvements.

E. The development and operation of the Project on the Site, as provided in this Agreement, is in the vital and best interest of the City and the welfare of its residents and is in accordance with the public purposes and provisions of applicable state and local laws. Without limiting the foregoing, development and operation of the Project will result in substantial benefits to the City and Agency, which includes (i) elimination of blight, (ii) job creation and enhanced revenues to the City resulting from construction and operation of the Project, including property taxes, sales taxes, and transient occupancy taxes, (iii) enhanced marketability that is likely to extend out-of-town leisure and convention visitors' lengths of stay in the City as a result of additional attractions and high-quality retail shopping and dining opportunities, and (iv) additional high-quality entertainment, restaurant and retail opportunities for the residents of Garden Grove and the surrounding area(s).

NOW, THEREFORE, the Agency and the Developer hereby agree as follows:

100. INTRODUCTORY PROVISIONS

101. Definitions. Capitalized terms within this Agreement shall have the meanings set forth below, or if not defined in this Section 101, shall have the meaning ascribed thereto when such terms are first used herein:

"Agency" means the Garden Grove Agency for Community Development, a public body, corporate and politic, exercising governmental functions and powers and organized and existing under Chapter 2 of the Community Redevelopment Law, and any assignee of or successor to its rights, powers and responsibilities.

"Agency Director" means the executive director of the Agency, or his designee.

"Agency Improvements" is defined in Section 301.2.

"Agency Improvement Costs" is defined in Section 301.2.

"Agency Property" means that certain property shown as Agency Property on the Site Map and described in the Legal Description.

"Agency's Conditions Precedent" is defined in Section 205.1.

"Agreement" means this Disposition and Development Agreement by and between the Agency and Developer, including all exhibits.

"ALTA Policies and Endorsements" is defined in Section 203.

"Amendment/Estoppel Costs" is defined in Section 621.

"Applicable Covenants Consideration Period" means, with respect to any portion of the Site and/or Developer Improvements, the period during which any of the Covenants

Consideration with respect to the applicable portion of the Site and/or Developer Improvements is required to be paid pursuant to Sections 409, 410, and 411 hereof.

"Assignment and Assumption Agreement" is attached hereto as Exhibit E and incorporated herein by reference.

"Breach" is defined in Section 501.

"CFD" means a community facilities district formed pursuant to Mello-Roos Community Facilities Act of 1982 (Government Code §§ 53311 *et seq.*).

"CFD Bonds" means bonds issued by a CFD.

"CFD Financing" is defined in Section 301.3.

"City" means the City of Garden Grove, a California municipal corporation.

"Closing" or **"Close of Escrow"** is defined in Section 201.5.

"Closing Date" is the date upon which conveyance of the Site is consummated in accordance with Section 201.5 hereof.

"CLTA Policy" is defined in Section 203.

"Commence Construction" or **"Commencement of Construction"** means the commencement of construction of the applicable portion of the Developer Improvements pursuant to a validly issued building permit, it being agreed that the pouring of foundations for such portion of the Developer Improvements constitutes commencement of construction thereof (without limiting other indicia of such commencement).

"Community Redevelopment Law" means California Health and Safety Code Sections 33000, *et seq.* as the same now exists or may hereafter be amended.

"Completion of Construction" or **"Complete(s) Construction"** or **"Completed Construction"** or **"Completing Construction"** means the completion of construction of the Developer Improvements, or any applicable Phase thereof, as evidenced by a final Certificate of Occupancy issued by the City, certification by the Project Architect and the Agency Director that the Developer Improvement are complete in accordance with the Construction Drawings and, in the case of a Hotel, the Hotel and all its rooms are open and available to the public.

"Conceptual Site Plan" is attached hereto as Exhibit J and incorporated herein by reference and generally depicts the proposed development and use of the Site, as the same may be hereafter modified as provided in this Agreement.

"Conditions Precedent" shall mean the Agency's Conditions Precedent and Developer's Conditions Precedent set forth in Section 205.

"Conditions Precedent to Third Party Acquisition" is defined in Section 201.2

"Construction Commencement Date" means, with respect to each Hotel, the date that is set forth in the Schedule of Performance as the date upon which the Commencement of Construction of such Hotel is to occur.

"Construction Drawings" is defined in Section 302.

"Construction Financing" is defined in Section 311.1 hereof.

"Construction Lender" is defined in Section 311.

"Conveyance" means the conveyance of the Site to the Developer by Grant Deed.

"Cost of the Agency Improvements" means the actual and direct costs of the Agency Improvements.

"Cost Reimbursement Deposit" is defined in Section 201.3.

"Covenants" means the covenants, obligations and promises of Developer hereunder, including without limitation the covenants, obligations and promises set forth in Section 102.2, 103, 204.2, 204.3, 304 through 309, inclusive, 400, 503 and 603, which Covenants shall survive the Closing, run with the land and be binding upon heirs, successors and assigns of Developer.

"Covenants Consideration" means, collectively, the aggregate amounts to be paid to Developer pursuant to Sections 409, 410, 411 and 412 hereof.

"Covenants Consideration Computation Example" is attached hereto as Exhibit M and incorporated herein by reference.

"Date of this Agreement" means the date of approval of the Agreement by the Agency.

"Declaration" means a Declaration of Covenants, Conditions and Restrictions which will be entered into by the parties prior to Closing which Declaration shall address the management, operation, rules of conduct, security and access rights and other easements with respect to the Project.

"Default" is defined in Section 501.

"Deposit" is defined in Section 201.3.

"Developer" means Land & Design, Inc., a California corporation, and any affiliate, assignee or successor thereto permitted pursuant to the terms of this Agreement. As of the date of this Agreement, Matthew Reid and David Rose have, in the aggregate, (i) at least a fifty-one percent (51%) ownership interest in Land & Design, Inc., and (ii) subject to the customary rights of other non-managerial members, partners or shareholders, as applicable, operational and managerial control of Developer and, subject to Section 103 hereof, will retain same until the issuance of Release of Construction Covenants.

"Developer Improvements" means the Phase 1 Developer Improvements and so much of the Phase 2 Developer Improvements as Developer elects, in Developer's sole discretion, to develop (and without the obligation to develop the same), each as generally described in Recital C above and more particularly described herein and in the Scope of Development.

"Developer Parties" means collectively Developer, Matthew Reid and David Rose.

"Developer/Agency Request" is defined in Section 621.

"Developer's Conditions Precedent" is defined in Section 205.2.

"Development Agreement" means a development agreement pursuant to Government Code Section 65864 *et seq.*

"Due Diligence Date" means ninety (90) days following the later of (a) Date of this Agreement or (b) the date the Agency has fee title to all of the Site.

"Enforced Delay" is defined in Section 602.

"Environmental Law" means the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 USC §§ 9601 *et seq.*), the Hazardous Materials Transportation Act, as amended (49 USC §§ 1801 *et seq.*), the Resource Conservation and Recovery Act of 1976, as amended (42 USC §§ 6901 *et seq.*), the Toxic Substances Control Act (15 USC §§ 2601 *et seq.*), the Insecticide, Fungicide, Rodenticide Act (7 USC §§ 136 *et seq.*), the Superfund Amendments and Reauthorization Act (42 USC §§ 6901 *et seq.*), the Clean Air Act (42 USC §§ 7401 *et seq.*), the Safe Drinking Water Act (42 USC §§ 300f *et seq.*), the Solid Waste Disposal Act (42 USC §§ 6901 *et seq.*), the Surface Mining Control and Reclamation Act (30 USC §§ 1201 *et seq.*), the Emergency Planning and Community Right to Know Act (42 USC §§ 11001 *et seq.*), the Occupational Safety and Health Act (29 USC §§ 655 and 657), the California Underground Storage of Hazardous Substances Act (Health and Safety Code §§ 25280 *et seq.*), the California Hazardous Substances Account Act (Health & Safety Code §§ 25300 *et seq.*), the Porter-Cologne Water Quality Act (Water Code §§ 13000 *et seq.*), together with any amendments of or regulations promulgated thereunder and any other federal, state, and local laws, statutes, ordinances, or regulations now in effect that pertain to occupational health or industrial hygiene.

"Escrow" is defined in Section 201.5.

"Escrow Agent" is defined in Section 201.5.

"Franchisor" is defined in Section 103.6.

"Franchise Agreement" is defined in Section 103.6.

"Governmental Requirement(s)" means all valid and enforceable laws, ordinances, statutes, codes, rules, regulations, orders and decrees of the United States, the State, the County, the City or any other political subdivision in which the Site is located, and of any other political subdivision, agency or instrumentality exercising jurisdiction over the Agency, the Developer or

the Site, including, without limitation, all applicable state labor standards, the City zoning and development standards, building, plumbing, mechanical and electrical codes, and all other provisions of the City Municipal Code, and all applicable disabled and handicapped access requirements, including without limitation (to the extent applicable), Labor Code Sections 1770 *et seq.*, the Americans With Disabilities Act, 42 U.S.C. Section 12101, *et seq.*, Government Code Section 4450, *et seq.*, Government Code Section 11135, *et seq.*, and the Unruh Civil Rights Act, Civil Code Section 51, *et seq.*

"Grant Deed" means a grant deed in the form of Exhibit F attached hereto and incorporated herein by reference, by which the Agency shall convey fee title to the Site to Developer.

"Hazardous Materials" means any toxic substance, material, or waste which is now regulated by any local governmental authority, the State of California, or the United States Government under any Environmental Law including, but not limited to, any material or substance which is (i) defined as a "hazardous waste," "extremely hazardous waste," or "restricted hazardous waste" under Sections 25115, 25117, or 25122.7, or listed pursuant to Section 25140 of the California Health and Safety Code, Division 20, Chapter 6.5 (Hazardous Waste Control Law), (ii) defined as "hazardous substance" under Section 25316 of the California Health and Safety Code, Division 20, Chapter 6.8 (Carpenter-Presley-Tanner Hazardous Substance Account Act), (iii) defined as a "hazardous material," "hazardous substance," or hazardous waste" under Section 25501 of the California Health and Safety Code, Division 20, Chapter 6.95 (Hazardous Materials Release Response Plans and Inventory), (iv) defined as a "hazardous substance" under Section 25281 of the California Health and Safety Code, Division 20, Chapter 6.7 (Underground Storage of Hazardous Substances), (v) a petroleum or refined petroleum product, including without limitation petroleum-based paints and solvents, (vi) asbestos, (vii) polychlorinated biphenyls, (viii) methyl tertiary butyl ether (MTBE); (ix) listed under Article 9 or defined as "hazardous" or "extremely hazardous" pursuant to Article 11 of Title 22 of the California Administrative Code, Division 4, Chapter 20, (x) designated as a "hazardous substance" pursuant to Section 311 of the Clean Water Act (33 U.S.C. § 1317), (xi) defined as a "hazardous waste" pursuant to Section 1004 of the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.*, (xii) defined as a "hazardous substance" pursuant to Section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 *et seq.*, (xiii) any flammable or explosive materials, (xiv) a radioactive material, or (x) lead, cyanide, DDT, printing inks, acids, pesticides, ammonia compounds and other chemical products, asbestos, PCBs and similar compounds and including any different products and materials which have been found to have adverse effects on the environment or the health and safety of persons.

"Holder" is defined in Section 311.2.

"Hotel(s)" means the Upper Upscale Hotel and, if constructed, the Limited Service Hotels, and **"Hotel"** means any one (1) of the Upper Upscale Hotel and the Limited Service Hotels.

"Hotel Operator" is defined in Section 103.6.

"Indemnify" means indemnify, defend, pay for and hold harmless.

"Indemnites" means the Agency and the City, and their respective representatives, officers and employees.

"Insurance" is defined in Section 306 *et seq.*

"Land Use Approvals" is defined in Section 303.

"Legal Description" means the legal description of the Site attached hereto as Exhibit B and incorporated herein by reference.

"Liabilities" means liabilities, suits, actions, claims, demands, penalties, damages (including without limitation, penalties, fines, and monetary sanctions), giving rise to losses, costs or expenses (including, without limitation, consultants' fees, and reasonable attorneys' fees) of any kind or nature and for any damages, including damages to property or injuries to person, including accidental death, (including reasonable attorneys' fees and costs in connection therewith).

"Limited Service Hotels" is defined in Recital C above, and, subject to Section 301.1 hereof, the minimum standards for which are described therein and in Section 301.1 and in Scope of Development. **"Limited Service Hotel"** means one of the Limited Service Hotels.

"Loan Balance" means, with respect to any Holder and its mortgage or deed of trust, the sum of the following amounts: (a) the aggregate unpaid amount (including, but not limited to, principal, protective advances, interest, fees, costs and expenses) owing to the Holder under the loan documents ("Holder Loan Documents") secured by such Holder's mortgage or deed of trust upon the Site (or any part thereof) immediately prior to the revesting of title in Agency (referred to herein as "Revesting") in accordance with this Agreement, whether Agency exercises such right of Revesting prior to such Holder's acquisition of Site (or portion thereof) by foreclosure or deed in lieu of foreclosure, or after completion of a foreclosure under such Holder's mortgage or deed of trust (or acceptance and recordation of a deed-in-lieu of such foreclosure); plus (b) all third party costs and expenses reasonably incurred by such Holder (and/or such Holder's Nominee) under, or in connection with the enforcement of the applicable Holder Loan Documents, including, without limitation, foreclosure costs and expenses (or deed-in-lieu of foreclosure costs and expenses) (such costs and expenses to include, but not be limited to, title charges, default interest, appraisals, environmental assessments and reasonable attorneys' fees and expenses); plus (c) if Agency commences the exercise of its Revesting after such Holder's (or its Nominee's) acquisition of the Site (or any portion thereof) by foreclosure or deed-in-lieu of foreclosure, all third party costs and expenses, if any, reasonably incurred by such Holder (and/or such Holder's Nominee) in connection with the management and operation of the Site subsequent to the date upon which a foreclosure under such mortgage or deed of trust is completed [or such Holder or its Nominee accepts a deed in lieu of foreclosure]; plus (d) all third party costs and expenses reasonably incurred by such Holder (and/or such Holder's Nominee) in connection with the construction, Developer Improvements (including tenant improvements), restoration, repair and equipping of the Site (or any portion thereof); plus (e) if Agency commences the exercise of its right of Revesting after such Holder's (or its Nominee's)

acquisition of the Site (or any portion thereof) by foreclosure or deed-in-lieu of foreclosure, an amount equal to the interest that would have accrued on the aggregate of the amounts described above under the Holder Loan Documents had all such amounts become part of the debt secured by such Holder's mortgage or deed of trust and had such debt continued in existence from the date of such foreclosure (or acceptance of a deed-in-lieu of foreclosure) by such Holder or its Nominee to the date the Revesting occurs and Agency reenters in accordance with this Agreement. (For purposes of this definition, the Agency's right to Revest in accordance with this Agreement shall not be deemed to have occurred prior to the date the Loan Balance is paid to the Holder (or its Nominee) in accordance with the Agreement). Each Holder (or its Nominee) shall provide Agency with its calculations of the Loan Balance and documents in support thereof within ten (10) days after written demand therefore by the Agency.

"Memorandum of Agreement" is attached hereto as Exhibit K and incorporated herein by reference.

"Negotiated Purchase Agreement" is defined in Section 201.1.

"Net Tax Increment Revenues" means seventy percent (70%) of the Tax Increment Revenues.

"Nominee" means an entity which is owned and controlled by any Holder.

"Notice" is defined in Section 601.

"Official Records" means the official records of the Office of the Registrar Recorder of Orange County, California.

"Parcel(s)" means one or more of the parcels into which the Site is divided pursuant to the Parcel Map.

"Parcel Map" means a parcel map, lot line adjustment and/or other subdivision in compliance with all applicable laws, creating five (5) or more separate legal parcels (with each of the Hotels, the Parking Structure and the Retail/Restaurant/Entertainment Component (and/or individual pads within the Retail/Restaurant/Entertainment Component) to be located on separate legal parcels) to the extent and in size and location required by Developer and approved by the Agency acting in its reasonable discretion.

"Parking Structure" is the multi-level parking structure described in the Scope of Development.

"Permitted Transferee[s]" is defined in Section 103.2.

"Phase" means the Phase 1 Developer Improvements or the Phase 2 Developer Improvements, as applicable.

"Phase 1 Developer Improvements" means the Retail/Restaurant/Entertainment Component, the Parking Structure plus (i) an Upper Upscale Hotel consisting of not less than 400 rooms, or (ii) an Upper Upscale Hotel of 300 or more rooms plus not less than one (1)

additional Hotel of not less than one hundred twenty-five (125) rooms, or (iii) two (2) Upper Upscale Hotels consisting in the aggregate of not less than four hundred fifty (450) rooms.

"Phase 2 Developer Improvements" means the Developer Improvements that are not included in the Phase 1 Developer Improvements.

"Phase 1 Environmental Assessment" means an assessment to identify Recognized Environmental Concerns defined under ASTM Standards E-1527-00 as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, past release, or material threat of a release of any hazardous substance or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

"Phase II Environmental Assessment" means an evaluation of the Recognized Environmental Concerns identified in the Phase I Environmental Site Assessment for the purpose of providing sufficient information regarding the nature and extent of contamination.

"Pre-Approved Limited Service Flag(s)/Operator(s)" is attached hereto as Exhibit L and incorporated herein by reference.

"Pre-approved Retail/Restaurant/Entertainment Tenant(s)/Operator(s)" is attached hereto as Exhibit L and incorporated herein by reference.

"Pre-Approved Upper-Upscale Flag(s)/Operator(s)" is attached hereto as Exhibit L and incorporated herein by reference.

"Presence" means the presence, release, use, generation, discharge, storage and disposal of any Hazardous Materials.

"Prevailing Wage and Public Works Requirements" are attached hereto as Exhibit I and incorporated herein by reference.

"Project" means the development and operation of the Developer Improvements.

"Project Architect" means the architect retained by the Developer to prepare the Construction Drawings and supervise construction of the Project.

"Project Area" is defined in Recital A.

"Recognized Environmental Concerns" means the presence or possible presence of any hazardous substances or petroleum products on the Site under conditions that indicate an existing or possible release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the Site or into the ground, ground water, or surface water of the Site. The term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not Recognized Environmental Conditions.

"Redevelopment Plan" is defined in Recital A.

"Release of Construction Covenants" means the document which evidences Developer's satisfactory Completion of Construction of the Developer Improvements, or a part thereof, as set forth in Section 310, in the form of Exhibit G attached hereto and incorporated herein by reference.

"Remaining Revenues" is defined in Section 4.09(b).

"Retail/Restaurant/Entertainment Component" is defined in Recital C and, as provided therein, means the retail/restaurant/entertainment portion of the Upper Upscale Hotel, consisting of a minimum of ten thousand (10,000) square feet and a maximum of sixty-five thousand (65,000) square feet, including at least one (1) restaurant, as shown on the Conceptual Site Plan.

"Revesting" is defined in the definition of "Loan Balance."

"Right of Entry" is described in Section 204 hereof and attached hereto as Exhibit H and incorporated herein by reference.

"Sales Tax Revenue" means the sales tax received by the City pursuant to the Bradley-Burns Uniform Sales and Use Tax Law (Revenue Code Sections 7200 *et seq.*) with respect to applicable Separate Components.

"Separate Components of the Developer Improvements" means each Hotel, the Retail/Restaurant/Entertainment Component and the Parking Structure, and/or the separate parcels comprising each.

"Schedule of Performance" means that certain Schedule of Performance attached hereto as Exhibit D and incorporated herein by reference, setting out the dates and/or time periods by which certain obligations set forth in this Agreement must be accomplished. The Schedule of Performance is subject to revision from time to time due to the application of Section 602 hereof and as set forth therein or as otherwise mutually agreed upon in writing between Developer and the Agency Director, and the Agency Director is authorized to make such revisions as he deems reasonably necessary.

"Scope of Development" means that certain Scope of Development attached hereto as Exhibit C, which describes the scope, amount and quality of development of the Developer Improvements to be completed by Developer and Agency Improvements to be completed by Agency pursuant to the terms and conditions of this Agreement.

"Site" means, collectively, the Agency Property and Third Party Property.

"Site Condition" is defined in Section 204.2.

"Site Map" means the map of the Site which is attached hereto as Exhibit A and incorporated herein by reference.

"State" means the State of California.

"Sunbelt Property" is that certain Third Party Property as shown on the Site Map. Agency has a right to lease the Sunbelt Property and is willing to assign that lease to Developer hereunder at the Closing pursuant and subject to Section 201.

"Tax Increment Revenues" means the total amount of taxes allocated to and received by the Agency pursuant to Health & Safety Code Section 33670(b) with respect to the applicable Separate Component(s).

"Tenant(s)" mean the tenant(s) of the Retail/Restaurant/Entertainment Component.

"Third Party Property" means that certain property shown on the Site Map as Third Party Property and owned by third parties, the legal descriptions and assessor parcel numbers of which are set forth on Exhibit B attached hereto. Without limiting the foregoing, Developer shall have the right to elect to have the Sunbelt Property constitute a portion of the Third Party Property for purposes of this Agreement, as provided in and pursuant to Section 201.

"Title Company" is defined in Section 202 hereof.

"TID Assessment" means an assessment pursuant to the Property and Tourist Improvement which was formed December 13, 2010 by the City of Garden Grove and the City of Anaheim to fund the marketing of the Anaheim/Orange County Visitors and Convention Bureau and other Anaheim Resort improvements.

"Title Policies" means the CLTA Policy and the ALTA Policies and Endorsements as defined in Section 203 hereof.

"Title Report" is defined in Section 202.

"Transfer" means any total or partial sale, transfer, conveyance, assignment, subdivision, financing, refinancing, lease or sublease of the Site or any portion thereof.

"Transferee" means a voluntary or involuntary successor in interest to the Developer.

"Transient Occupancy Tax Revenues" means those revenues imposed and collected by the City with respect to the Hotel pursuant to Section 3.12.010 of the Garden Grove Municipal Code.

"Upper Upscale Hotel Component" is defined in Recital C and includes the Upper Upscale Hotel, the Retail/Restaurant/Entertainment Component, the Parking Structure and such improvements as may be required by the Land Use Approvals.

"Upper Upscale Hotel" is defined in Recital C above and, as provided therein, means a Hotel, the minimum standards for which are described therein and in Section 301.1 and the Scope of Development.

102. Representations, Warranties and Covenants.

102.1 Agency Representations Warranties and Covenants. The Agency hereby makes the representations, warranties and covenants contained below in this Section 102.1. All of

the representations and warranties set forth in this Section 102.1 are effective as of the Date of this Agreement, are true in all material respects as of the Date of this Agreement, and shall be true in all material respects as of the Closing Date, and each shall survive the execution of this Agreement without limitation as to time.

(a) The Agency is a public body, corporate and politic, validly created and existing pursuant to the Community Redevelopment Law, which has been authorized to transact business pursuant to action of the City. The execution and delivery of this Agreement by the Agency has been fully authorized by all requisite actions.

(b) The Agency's execution and delivery of this Agreement does not violate any applicable laws, regulations, or rules nor to the best of Agency's knowledge after due inquiry, will it constitute a breach or default under any contract, agreement, or instrument to which the Agency is a party, or any judicial or regulatory decree or order to which the Agency is a party or by which it is bound; provided however that while Agency believes this Agreement to be enforceable in accordance with its terms, Agency makes no representations or warranties regarding the enforceability hereof.

(c) The Agency has not made an assignment for benefit of creditors, filed a petition in bankruptcy, been adjudicated insolvent or bankrupt, petitioned a court for the appointment of any receiver of or trustee for it or any substantial part of its property, or commenced any proceeding relating to the Agency under any reorganization, arrangement, readjustment of debt, dissolution, or liquidation law or statute of any jurisdiction, whether now or later in effect. There has not been commenced nor is there pending against the Agency any proceeding of the nature described in the first sentence of this subsection (c). No order for relief has been entered with respect to the Agency under the Federal Bankruptcy Code.

(d) All documents, instruments and other information delivered by the Agency to Developer pursuant to this Agreement, other than documents, instruments and other information received by Agency from third parties, are, to the best of Agency's knowledge, true, accurate, correct and complete in all material respects.

(e) The Agency has taken all legally required actions, and no further consent, approval, or authorization of any third person is required with respect to the Agency's execution delivery, and performance of this Agreement, other than consents, approvals, and authorizations which have already been unconditionally given.

(f) Contingent upon the acquisition of the Third Party Property, the Agency has or will have at the Closing, full right, power and lawful authority to grant, sell and convey the Third Party Property as provided herein.

(g) The Agency is not a "foreign person" within the parameters of Foreign Investors in U.S. Real Property Tax Act ("FIRPTA"), or is exempt from the provisions of FIRPTA, or the Agency has complied and will comply with all the requirements under FIRPTA.

(h) Until the Closing Date and thereafter, the Agency shall, upon learning of any fact or condition which would cause any of the warranties and representations in this Section 102.1 not to be true as of the Closing Date, give written notice of such fact or condition to Developer as soon as is reasonably practicable.

Each of the foregoing items (a) through (h), inclusive shall be deemed to be ongoing representations, warranties and covenants.

102.2 Developer's Representations, Warranties and Covenants. Developer hereby makes the representations, warranties and covenants contained below in this Section 102.2. All of the representations and warranties set forth in this Section 102.2 are effective as of the Date of this Agreement, are true in all material respects as of the Date of this Agreement, and shall be true in all material respects as of the Closing Date, and each shall survive the execution of this Agreement without limitation as to time.

(a) Developer is a duly organized California corporation and in good standing under the laws of the State of California and is authorized to carry on its business in California as such business is now conducted and to own and operate its properties and assets now owned and being operated by it, and as set forth in and anticipated by this Agreement. Developer has full right, power and lawful authority to enter into this Agreement and the execution and delivery of this Agreement by Developer has been fully authorized by all requisite actions on the part of Developer. Developer has provided the Agency with true and correct copies of documentation reasonably acceptable to the Agency Director, or his/her designee, designating the party authorized to execute this Agreement on behalf of Developer.

(b) Developer's execution, delivery and performance of its obligations under this Agreement will not violate any applicable laws, regulations, or rules nor to the best of Developer's knowledge after due inquiry, will it constitute a breach or default under any contract, agreement, or instrument to which Developer is a party, or any judicial or regulatory decree or order to which Developer is a party or by which it is bound.

(c) Developer has not made an assignment for the benefit of creditors, filed a petition in bankruptcy, been adjudicated insolvent or bankrupt, petitioned a court for the appointment of any receiver of or trustee for it or any substantial part of its property, or commenced any proceeding relating to Developer under any reorganization, arrangement, readjustment of debt, dissolution, or liquidation law or statute of any jurisdiction, whether now or later in effect. There has not been commenced nor is there pending against Developer any proceeding of the nature described in the first sentence of this subsection (c). No order for relief has been entered with respect to Developer under the Federal Bankruptcy Code.

(d) All documents, instruments, and other information delivered by Developer to the Agency pursuant to this Agreement are, to the best of Developer's knowledge, true, accurate, correct and complete in all material respects.

(e) This Agreement and all documents to be delivered by Developer pursuant to this Agreement, when executed by Developer and delivered, shall constitute the legal, valid and binding obligation of Developer. The Developer has taken all legally required actions, and no further consent, approval, or authorization of any third person is required with respect to the Developer's execution delivery, and performance of this Agreement, other than consents, approvals, and authorizations which have already been unconditionally given.

(f) Until the Closing Date and thereafter, Developer shall, upon learning of any fact or condition which would cause any of the warranties and representations in this

Section 102.2 not to be true as of the Closing Date, immediately give written notice of such fact or conditions to the Agency.

Each of the foregoing items (a) to (f), inclusive shall be deemed to be ongoing representations, warranties and covenants.

102.3 Agency and Developer Representation Re Authority and Enforceability. Agency and Developer hereby covenant, represent and warrant to each other that neither will assert the lack of authority or enforceability of this Agreement against the other.

103. Transfers of Interest in Site or Agreement.

103.1 Prohibition Against Transfer Prior to Release of Construction Covenants. The qualifications and identity of Developer are of particular concern to the Agency. It is because of those qualifications and identity that the Agency has entered into this Agreement with Developer. Except as expressly set forth in Section 103.2 below, for the period commencing upon the Date of this Agreement and until the issuance of the Release of Construction Covenants, no Transferee shall acquire any rights or powers under this Agreement, nor shall Developer make any Transfer, of the whole of the Site or any part, or the Developer Improvements without the prior written approval of the Agency, which approval may be granted or withheld in the sole and absolute discretion of the Agency. Following the issuance of the Release of Construction Covenants, any Transfer shall be governed by Section 103.3. Agency and Developer hereby acknowledge that, subject to Section 103.2 below, Developer likely will form separate legal entities to own and develop the separate components (i.e., each Hotel, the Parking Structure, the separate pads comprising the Retail/Restaurant/Entertainment Component, etc.) of the Developer Improvements.

103.2 Permitted Transfers. Notwithstanding any other provision of this Agreement to the contrary, both before and after the issuance of the Release of Construction Covenants, the Agency approval of an assignment of this Agreement or Transfer of the Site (or any portion thereof), shall not be required in connection with any of the following (each of which shall be "Permitted Transfer"):

(a) The conveyance or dedication of any portion of the Site to the City, Agency or other appropriate governmental agency, or for the purpose of the granting of easements, permits or similar rights to facilitate construction, use and/or operation of the Developer Improvements.

(b) Any Transfer for Construction Financing purposes (subject to such Construction Financing being in compliance with Section 311.1 herein), including the grant of a deed of trust to secure the funds necessary for land acquisition, construction and permanent financing of the Developer Improvements, as applicable.

(c) Any collateral assignment of the Covenant Consideration for purposes of borrowing money to be used on the Project.

(d) Any Transfer to an entity in which (i) Developer and/or Matthew Reid and David Rose, or any combination thereof, retain operational control over the management, development and construction of the Developer Improvements (subject to the right of non-managerial members, partners, or shareholders, as applicable, to exercise voting rights with respect to

so-called "major decisions") and (ii) Developer and/or Matthew Reid and/or David Rose in the aggregate have not less than fifty-one percent (51%) ownership interest; provided, however, that a Transfer to an entity in which Matthew Reid and David Rose in the aggregate have not less than ten percent (10%) ownership interest, or the subsequent reduction of the ownership interest held by Matthew Reid and/or David Rose in any entity, shall be permitted without Agency's approval if such Transfer or reduction is required by an equity participant or joint venture partner as a condition to providing additional funds for the development of the Developer Improvements or applicable portion thereof.

(e) Any Transfer to a Holder, or its Nominee by foreclosure or deed in lieu of foreclosure, or to a third party purchaser at a foreclosure sale or after foreclosure by the Holder or its Nominee.

(f) Any Transfer to a lessee or sublessee of a portion of the Project that is incidental to the primary purpose of the Developer Improvements (by example only, and not as a limitation, lease of restaurant space), provided such lessee or sublessee is consistent with the overall purposes of the Development Improvements.

(g) Any Transfer of a separate legal parcel within the Site and the Hotel(s) thereon after the Applicable Covenants Consideration Period with respect thereto has expired.

103.3 Agency Consideration of Requested Transfer After Release of Construction Covenants. Subject to and in accordance with the provisions of this Section 103.3, and without limiting Developer's rights under Section 103.2 above, the Developer shall have the right, without the Agency's consent, to Transfer (i) the entire Site following issuance of a Release of Construction Covenants with respect to all of the Developer Improvements; and/or (ii) a specific Parcel and the Developer Improvements thereon following issuance of a Release of Construction Covenants with respect to such Parcel and Developer Improvements provided that such Developer Improvements are being operated as a Pre-Approved Upper-Upscale Flag(s)/Operator(s), a Pre-Approved Limited Service Flag(s)/Operator(s), or a Pre-approved Retail/Restaurant/Entertainment Tenant(s)/Operator(s), as applicable. In the event of any other proposed Transfer following the issuance of a Release of Construction Covenants with respect to all of the Developer Improvements, Developer shall deliver written Notice to Agency requesting approval of such Transfer, which Notice shall be accompanied by sufficient evidence regarding the proposed Transferee's net worth, development and operational qualifications and experience, and its financial resources, in sufficient detail to enable the Agency to evaluate the proposed Transferee pursuant to the criteria set forth hereinbelow and as reasonably determined by the Agency. In this regard, and to the extent approval is required by this Section 103.3, the Agency agrees that it will not unreasonably withhold approval of a request of a Transfer made after the issuance of the Release of Construction Covenants with respect to the applicable portion of the Site. The Agency shall evaluate each proposed Transferee over which Agency has approval rights on the basis of its qualifications and experience, and its financial commitments and resources. Agency may not disapprove any such proposed Transferee that demonstrates to the reasonable satisfaction of the Agency that the transferee/assignee or its guarantor has a net worth sufficient to provide the prerequisite equity and access to debt offered by an institutional commercial real estate lender so as to permit the financing of the acquisition and operation of the Developer Improvements located on the applicable portion of the Site and transferee/assignee and/or its contract manager or the individual within the contract management

entity responsible for management of such Developer Improvements has at least ten (10) years recent experience owning or operating hotel/retail/restaurant projects similar to such Hotel(s).

103.4 Assignment and Assumption Agreement. An executed Assignment and Assumption Agreement (or a document effecting a Transfer that includes the substantive provisions of the Assignment and Assumption Agreement) shall also be required for all proposed Transfers prior to the expiration of the Redevelopment Plan with respect to the portion of the Site so transferred whether or not Agency's consent is required with respect to such Transfer. If the Transfer involves the obligation of the Transferee to construct specific Developer Improvements, Agency is hereby granted the right to compel Developer to enforce any such construction obligation. Upon the full execution of an Assignment and Assumption Agreement, the Transferee thereafter shall have all of the rights and obligations of the Developer under this Agreement with respect to the portion of the Site and the Developer Improvements Transferred thereto and/or developed thereby.

103.5 Agency Action Re Requested Transfer. Within thirty (30) days after the receipt of a written Notice requesting Agency approval of a Transfer pursuant to Sections 103.3 and 103.7, the Agency shall either approve or disapprove such proposed assignment or shall respond in writing by stating what further information, if any, the Agency reasonably requires in order to determine the request complete and determine whether or not to grant the requested approval. Upon receipt of such a response, Developer shall promptly furnish to the Agency such further information as may be reasonably requested.

103.6 Initial Selection and/or Transfers with Respect to the Hotel Operator, Franchisor, and Tenants; Approval of the Franchise Agreement. The selection of the operator ("Hotel Operator") and brand or franchisor for a Hotel (the "Franchisor"), as well as the franchise agreement or management agreement between Franchisor and Developer for such Hotel (the "Franchise Agreement"), shall be subject to approval by the Agency, acting in its reasonable discretion and based on consistency with the quality of the Hotel as described in Section 301.1 and the Scope of Development both initially and until expiration of the Applicable Covenants Consideration Period for such Hotel. During the Applicable Covenants Consideration Period, Agency shall also have the right to approve, acting in its reasonable discretion, the Tenants based on consistency with the quality of the Hotel as required herein. Notwithstanding anything to the contrary contained herein, the Pre-Approved Upper-Upscale Flag(s)/Operator(s), Pre-Approved Limited Service Flag(s)/Operator(s) and Pre-approved Retail/Restaurant/Entertainment Tenant(s)/Operator(s) are each hereby approved by the Agency for all purposes of this Agreement.

103.7 Transfer of Covenant Consideration. Notwithstanding anything herein to the contrary (i) both before and after the issuance of the Release of Construction Covenants, except as to a collateral assignment described in Section 103.3(c), the approval of an assignment of the Covenant Consideration separate and apart from a Transfer of the Site or the corresponding part thereof (i.e., an assignment of the Covenant Consideration not in conjunction with the Transfer of the applicable portion of the Site and Hotel(s)), shall require the consent of the Agency which consent shall be granted or withheld in the absolute discretion of the Agency; and (ii) no separate or additional approval of an assignment of the applicable Covenant Consideration that is made in conjunction with a Transfer of the Site or the corresponding part thereof shall be required from the Agency.

200. DISPOSITION OF THE SITE

201. Conveyance of the Site to Developer. Subject to the satisfaction of the Conditions Precedent set forth hereinbelow, on or before the date set forth in the Schedule of Performance, but in no event later than the Outside Date, the Agency shall cause the Conveyance of the Site to Developer in the condition described in Sections 201.4, 204.2 and 301.2 and the Scope of Development in consideration for compliance with the terms and conditions of this Agreement and Developer shall accept Conveyance in accordance with the terms of this Section 201.

201.1 Acquisition of Third Party Property by Negotiated Purchase. Subject to the availability of funds, as determined in the absolute discretion of the Agency, the Agency agrees to use its commercially reasonable efforts to acquire by negotiation the Third Party Property, subject to the terms, covenants and conditions of this Agreement, and the Agency may enter into an agreement for the purchase of the Third Party Property (a "Negotiated Purchase Agreement") without further approval by Developer, provided Developer has approved the terms and conditions of the Negotiated Purchase Agreement as it relates to the title and condition of the property being acquired. Notwithstanding anything to the contrary contained herein, and if and as required by Developer, Agency shall assign the lease of the Sunbelt Property to Developer or sublease the Sunbelt Property to Developer, in each case on terms agreed upon by Agency and Developer within the Due Diligence Period. Notwithstanding the foregoing or any such assignment or sublease, Agency shall remain responsible for all (and Developer shall not be required to pay any) rental to be paid under the lease(s) of the Sunbelt Property or otherwise until such time as Developer commences the precise grading of the construction pads located on the Sunbelt Property. In addition, Agency acknowledges that Developer has informed Agency that Developer considers the rent to be paid under the lease between Agency and the owner of the Sunbelt Property to be substantially "above market", and Developer and Agency acknowledge and agree that Agency will remain responsible for and shall pay the difference between the rental amount Developer determines during the Due Diligence Period to be "market" for the Sunbelt Property and the amount that Agency agreed to pay under such lease.

201.2 Acquisition of Third Party Property by Eminent Domain. If the Agency's efforts to negotiate the purchase of the Third Party Property pursuant to Section 201.1 are unsuccessful, the Agency shall consider adoption of a resolution of necessity to acquire the Third Party Property by eminent domain. In no event shall the Agency's decision not to adopt a resolution of necessity to acquire the Third Party Property be considered a Default of the Agency's obligations under this Agreement, it being understood and acknowledged by the Developer that the Agency retains full and complete discretion with respect to the adoption of such a resolution. Subject to the provisions of this Agreement, if the Agency, in its discretion, adopts a resolution of necessity to acquire the Third Party Property, the Agency shall pursue to completion the acquisition of such Third Party Property through eminent domain (or settlement) as long as Developer is not in Default hereunder.

Notwithstanding any other provision of this Agreement to the contrary, if:

(a) The Agency provides to the Developer a copy of an effective, non-appealable order of prejudgment possession as to the Third Party Property for which fee title has not yet been acquired, free and clear of any other right of possession, together with a covenant in favor of Developer that Agency will not abandon the eminent domain action.

(b) The Agency delivers effective possession of the Third Party Property and the Title Company issues to the Developer (and Developer's Holder) the Title Policies provided for in Section 203 hereof (subject only to delivery to Title Company of an agreement mutually approved by Agency for Agency to indemnify Title Company as set forth in Section 204); and

(c) The right of possession of, and the covenant to vest all, subsequently acquired title to the Third Party Property conveyed by the Agency to the Developer is sufficient to allow Developer to close the Construction Financing without additional expense, interest or concessions and commence construction of the Developer Improvements;

then the Agency shall convey and the Developer shall, in such event, accept possession of the Third Party Property and the right to subsequently acquire title thereto, and the Developer shall proceed with the development of the Third Party Property in accordance with the Schedule of Performance, with the date of transfer of possession from the Agency to the Developer treated the same as the date for the Close of Escrow for purposes of the Developer's obligation to proceed with and complete construction of the Developer Improvements.

201.3 Consideration for Site. The consideration for the Conveyance will be the Developer's construction and operation of the Project in accordance with this Agreement, and its promise to otherwise be bound by the Covenants set forth herein; provided however, Developer has deposited with the Agency the sum of Fifty Thousand Dollars (\$50,000) ("Cost Reimbursement Deposit") which Cost Reimbursement Deposit the Agency may use to pay for costs incurred by Agency in connection with the implementation of the Agreement. Developer will be refunded the unexpended portion of the Cost Reimbursement Deposit in the event that Developer acquires the Site pursuant to this Agreement (in which case the unexpended portion of the Cost Reimbursement Deposit will be refunded to Developer upon the Commencement of the Phase 1 Developer Improvements) or this Agreement is terminated (in which case the unexpended portion of the Cost Reimbursement Deposit will be refunded to Developer upon the termination of this Agreement) other than due to a Default by Developer.

201.4 Condition of Site. EXCEPT AS SET FORTH IN SECTIONS 204 AND 301.2, DEVELOPER HAS AGREED TO ACCEPT POSSESSION OF THE SITE ON THE CLOSING DATE ON AN "AS IS" BASIS. AGENCY AND DEVELOPER AGREE THAT, SUBJECT TO SECTIONS 204 AND 301.2 HEREOF, THE PROPERTY SHALL BE SOLD "AS IS, WHERE IS, WITH ALL FAULTS" WITH NO RIGHT OF SET OFF OR REDUCTION IN CONSIDERATION, AND, EXCEPT AS SET FORTH IN SECTIONS 204 AND 301.2 HEREOF, SUCH SALE SHALL BE WITHOUT REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED (INCLUDING WITHOUT LIMITATION, WARRANTY OF INCOME POTENTIAL, OPERATING EXPENSES, USES, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND SELLER DISCLAIMS AND RENOUNCES ANY SUCH REPRESENTATION OR WARRANTY.

201.5 Opening and Close of Escrow. The Conveyance of the Site shall be consummated on the date ("Closing Date") set forth in the Schedule of Performance but in no event later than June 15, 2013 ("Closing" or "Close of Escrow"). The scheduled Closing of June 15, 2013, is an outside date, Section 602 notwithstanding, but is subject to extension as provided in the Schedule of Performance, through an escrow (the "Escrow") established at West Coast Escrow or another escrow company mutually agreeable to the parties (the "Escrow Agent") which Escrow shall be opened within thirty (30) days following the Date of this Agreement. Escrow Agent is hereby

authorized to effect the Closing upon satisfaction of the Conditions to Closing set forth in Section 205 by taking the following actions:

(a) Current real property taxes, personal property taxes, and installments of assessments and all items of income (if any) and expense regarding the Site shall be prorated as of the Closing.

(b) Concurrently with the Closing of Escrow, Escrow Agent shall cause the Title Company to issue the Title Policy, as described in Section 203.

(c) Escrow Agent shall pay and charge: (i) Developer for the following: (aa) the recording cost of the Grant Deed and other closing documents, (bb) the premium for the CLTA Policy, (cc) the additional premium for the ALTA Policies and Endorsements (as hereinafter defined), if any, (dd) half of the escrow fees charged by the Escrow Agent, (ee) Developer's share of proration; and (ii) Agency for the following (ff) Agency's share of prorations, (gg) one-half (1/2) the cost of the CLTA Policy and (hh) any transfer taxes or fees.

(d) Escrow Agent shall record, in the following order, the following documents:

- (i) The Declaration;
- (ii) The Grant Deed; and
- (iii) The Memorandum of Agreement.

all duly executed and acknowledged by the appropriate party.

201.6 Submittal of Documents.

(a) At least two (2) days prior to the Close of Escrow, Developer shall execute and submit to Escrow Agent the following:

(i) Two (2) originals of a certificate of acceptance of the Grant Deed duly executed by Developer and acknowledged.

(ii) Two (2) originals of the Declaration and Memorandum of Agreement duly executed by Developer and acknowledged.

(iii) Any documents to be recorded as part of Developer's financing of the Project which Agency has approved in writing pursuant to Section 311, along with a request for notice of default executed by the Agency.

(b) At least two (2) days prior to the Close of Escrow, Agency shall execute and deliver to Escrow the following:

(i) Two (2) originals of the Grant Deed duly executed by Agency and acknowledged; and

(ii) Two (2) originals of the Declaration and Memorandum of Agreement duly executed by Agency and acknowledged.

201.7 Post-Closing Deliveries by Escrow.

(a) After the Close of Escrow, the Developer shall be delivered the following documents:

(i) The Grant Deed duly executed by the appropriate party or parties and recorded in the Official Records of Orange County.

(ii) A non-foreign affidavit in a form reasonably acceptable to Developer.

(iii) A conformed copy of the Declaration.

(iv) A conformed copy of the Memorandum of Agreement.

(b) After the Close of Escrow, Agency shall be delivered the following documents:

(i) A conformed copy of the recorded Grant Deed and this Agreement.

(ii) The recorded original of the Declaration.

(iii) The recorded original of the Memorandum of Agreement.

(iv) The recorded original of the request for notice of default.

(c) At Close of Escrow, the Agency and Developer shall each execute counterpart closing statements in customary form together with such other documents as are reasonably necessary to consummate the Closing.

201.8 Payment of Escrow Costs. At Close of Escrow, both parties shall pay their respective costs by wire transfer, or by cashier's check drawn on a bank reasonably acceptable to the Escrow Agent. In the event of termination of this Agreement prior to the Close of Escrow due to failure of a condition set forth in Section 205, the parties shall each be responsible for one-half of any Escrow cancellation costs. In the case of termination prior to the Close of Escrow due to a default by one of the parties hereto, such defaulting party shall pay one hundred percent (100%) of all Escrow Cancellation Costs.

202. Review of Title. Within ten (10) days after the Date of this Agreement, Agency shall cause First American Title Insurance Company, or another title company mutually agreeable to both parties (the "Title Company"), to deliver to Developer a preliminary title report (the "Title Report") with respect to the Site, together with legible copies of all documents underlying the exceptions ("Exceptions") set forth in the Title Report. Developer shall cause the preparation, at its cost and expense, of a ALTA Survey prepared by a California licensed surveyor (the "ALTA Survey"). Developer shall have thirty (30) days from its receipt of the Title Report and ALTA Survey within which to give written notice to Agency of Developer's approval or disapproval of any of such

Exceptions. No deeds of trust, mortgages or other liens (all of which shall be removed by Agency prior to Closing), except for the lien of property taxes and assessments not yet due, shall be approved Exceptions. If Developer notifies Agency of its disapproval of any Exceptions in the Title Report or ALTA Survey, Agency shall have thirty (30) days from Agency's receipt of such notification to advise Developer that it will use commercially reasonable efforts or provide assurances satisfactory to Developer that such Exception(s) will be removed on or before the Closing. If Agency does not provide assurances satisfactory to the Developer that such Exception(s) will be removed on or before the Closing, Developer shall have thirty (30) days after the expiration of such thirty (30) day period to either give the Agency written notice that Developer elects to proceed with the purchase of the Site subject to the disapproved Exceptions and conditions set forth in the ALTA Survey (and conditioned upon the issuance of any endorsements necessary to render title acceptable to Developer), or to give the Agency written notice that the Developer elects to terminate this Agreement in which event, the Agency and Developer shall each be responsible for one-half of any Escrow cancellation charges and neither Developer nor Agency shall have any further rights or obligations hereunder except as set forth in Section 307. The Developer shall have the right to approve or disapprove any Exceptions reported by the Title Company or conditions set forth on the ALTA Survey after Developer has approved the condition of title for the Property hereunder. The foregoing periods of time shall be reasonably extended if any updates in the Title Report are provided to Developer after Developer approval of the Exceptions. Agency shall not voluntarily create any new exceptions to title following the Date of this Agreement, except for the recordation of documents in connection with the Closing as required herein. The Developer shall assume all non-delinquent assessments and taxes not specifically disapproved as provided herein.

203. Title Policy. At the Closing, the Title Company, as insurer, shall issue in favor of Developer, as insured, a CLTA owner's standard coverage policy or policies of title insurance with endorsements, if any, as may be required in Section 202 hereof with liability in an amount equal to the value of the Site as determined by the parties prior to Closing but not to exceed Ten Million Dollars (\$10,000,000) ("CLTA Policy"), or, at Developer's option and expense, an ALTA extended policy of title insurance and/or lender's policy of title insurance with any endorsements and/or increased coverage amounts requested by Developer or its lender ("ALTA Policies and Endorsements") (collectively, the "Title Policies"), subject to the following:

- (a) All nondelinquent general and special real property taxes and assessments for the current fiscal year; and
- (b) If a CLTA policy is issued, the standard printed conditions and exceptions contained in the CLTA standard owner's policy of title insurance regularly issued by the Title Company.
- (c) The Redevelopment Plan.
- (d) The provisions of this Agreement, the Grant Deed and the Declaration.
- (e) Any Exceptions to title approved by Developer pursuant to Section 202.

The Title Policies shall be combined with a policy insuring the personal property (Eagle 9 policy from the Title Company) with tie-in endorsements to cover the full insurable cost of the Project paid for by Developer.

204. Studies, Reports.

204.1 Site Investigation. Representatives of the Developer and any prospective users, following execution of the Right of Entry Agreement, shall have the right of access to the Agency Property, and to the Third Party Property at such time, if ever, as Agency has the right of access to the Third Party Property, for the purpose of making necessary or appropriate inspections, including geological, soils and/or additional environmental assessments. If Developer determines that there are Hazardous Materials in, on, under or about the Site, including the groundwater, or that the Site is or may be in violation of any Environmental Law, or that the condition of the Site is otherwise unacceptable to Developer, then the Developer shall notify the Agency and Escrow Holder prior to the Due Diligence Date. Agency and Developer shall thereafter have thirty (30) days to negotiate an agreement with respect to remediation of the Site, pursuant to which Agency shall commit to expend up to Two Hundred Fifty Thousand Dollars (\$250,000) for Site remediation. If, at the end of such thirty (30) day period, Developer and Agency have not come to an agreement with respect to remediation of the Site, Developer shall, within three (3) days thereafter notify Agency of whether it elects to go forward with the acquisition of the Site and pay all remediation costs in excess of Two Hundred Fifty Thousand Dollars (\$250,000), or whether it elects to terminate this Agreement, in which event the Developer and Agency shall each be responsible for one-half of any Escrow cancellation charges and neither Developer nor Agency shall have any further rights or obligations hereunder except as set forth in Section 307.

204.2 As-Is Environmental Condition. Subject to the terms of this Agreement, if the Developer elects to proceed with Close of Escrow, the Site shall be conveyed to the Developer in an "as is" environmental condition, with no warranty, express or implied by the Agency, as to the condition of the Site, the soil, its geology, the Presence of known or unknown faults, the suitability of soils for the intended purposes or the presence of known or unknown Hazardous Materials or toxic substances.

204.3 Indemnities and Release Re Hazardous Material.

(a) **Developer Indemnity.** As of the Closing, Developer hereby agrees and hereby shall Indemnify the Indemnitees from and against all Liabilities arising from, related in any respect to, or as a result of (i) the Presence of Hazardous Materials on the Site (excluding Public Streets) which Presence first occurred either before or after Close of Escrow, and (ii) the Presence of Hazardous Materials on the Site, which Hazardous Materials were not Hazardous Materials at the time of the Close of Escrow, but became Hazardous Materials after Close of Escrow as a result of an amendment to, or interpretation of, the Environmental Law; provided, that none of the same were directly and proximately caused by Agency or any of its agents, employees or contractors. Agency shall cooperate with Developer to ensure that Agency has assigned to Developer any and all rights that Agency acquired in its acquisition of the Site or any portion thereof to permit Developer's prosecution of claims against any third parties who are potentially responsible for such Hazardous Materials.

(b) **Developer Release.** As of the Closing, Developer agrees to and hereby shall release the Indemnitees from and against all Liabilities arising from, related in any respect to, or as a result of (i) the Presence of Hazardous Materials on the Site that first existed on the Site as of the Close of Escrow, but were discovered after Close of Escrow, and (ii) the Presence of Hazardous Materials on the Site, which Hazardous Materials were not identified and/or defined as such under the Environmental Laws at the time of Close of Escrow, but became Hazardous Materials

after Close of Escrow as a result an amendment to, or interpretation of, the Environmental Law. Notwithstanding the foregoing, Developer is not releasing any person or entity other than the Indemnitees.

205. Conditions to Closing. The Closing is conditioned upon the satisfaction of the following terms and conditions, which the parties shall exercise their best efforts to satisfy, within the times designated below:

205.1 Agency's Conditions Precedent. Agency's obligation to proceed with the Closing is subject to the fulfillment or waiver in writing by Agency of each and all of the conditions precedent (a) through (m), inclusive, described below ("Agency's Conditions Precedent"), which are solely for the benefit of Agency, and which shall be fulfilled or waived by the time periods provided for herein:

(a) No Default. Prior to the Close of Escrow, Developer shall not be in Default in any of its obligations under the terms of this Agreement.

(b) Execution of Documents. The Developer shall have executed any documents required hereunder and delivered such documents into Escrow.

(c) Payment of Funds. Prior to the Close of Escrow, Developer shall have paid all required costs of Closing into Escrow in accordance with Section 201.5 hereof.

(d) Land Use Approvals. The Developer shall have received all Land Use Approvals and a building permit shall have issued with respect to not less than the Phase 1 Developer Improvements.

(e) Insurance. The Developer shall have provided proof of insurance as required by Section 306 hereof.

(f) Financing. The Agency shall have approved the Construction Financing as defined in Section 311.1 hereof, for construction of not less than the Phase 1 Developer Improvements as provided in Section 311.1 hereof, and such Construction Financing shall have closed and funded or be ready to close and fund upon the Closing in substantial accordance with the commitment for Construction Financing.

(g) Declaration. The parties shall have mutually agreed upon the terms of the Declaration and the same shall be ready for recordation concurrently with the Close of Escrow.

(h) Agency's Acquisition of the Third Party Property. Agency has acquired the Third Party Property in accordance with Sections 201.1 and/or 201.2 hereof.

(i) Approval of Hotel Operator, Franchisor and Franchise Agreement. The Developer shall have provided Agency and, to the extent required by this Agreement, Agency shall have approved the Hotel Operator, Franchisor and a Franchise Agreement, which approval shall be granted if each comply with the terms of this Agreement, including without limitation, Section 301.1, and the Scope of Development.

(j) Pre-leasing and Approval of Tenant. Agency has approved the Tenant(s)/Operator(s) unless included in the list of Pre-approved Restaurant Tenant(s)/Operator(s). The Tenant(s) listed in Exhibit M are hereby approved.

(k) Hazardous Material Insurance. Agency and Developer shall have obtained or waived Hazardous Material Insurance pursuant to Section 204.4.

(l) Agency Improvements. Agency has determined, acting in its reasonable discretion, the cost of the Agency Improvements will not exceed Fifteen Million, Eight Hundred Thousand Dollars (\$15,800,000).

(m) Health & Safety Code Section 33445 Finding. The Agency and the City, each acting in its sole and absolute discretion, have adopted resolutions pursuant to Health & Safety Code Section 33445, approving the expenditure of funds for the infrastructure improvements required by Section 301.2.

205.2 Developer's Conditions Precedent. Developer's obligation to proceed with the Closing is subject to the fulfillment or waiver by Developer of each and all of the conditions precedent (a) through (o), inclusive, described below ("Developer's Conditions Precedent"), which are solely for the benefit of Developer, and which shall be fulfilled or waived by the time periods provided for herein:

(a) No Default. Prior to the Close of Escrow, Agency shall not be in default in any of its obligations under the terms of this Agreement.

(b) Execution of Documents. The Agency shall have executed the Grant Deed and any other documents required hereunder and delivered such documents into Escrow.

(c) Review and Approval of Title. Developer shall have reviewed and approved the condition of title of the Site, as provided in Section 202 hereof.

(d) Site Condition. Developer shall have determined, in its sole and absolute discretion, and advised Agency in writing that, to Developer's knowledge, the Site Condition is satisfactory in accordance with Sections 201.4, 204 and 301.2 hereof.

(e) Relocation, Demolition and Clearance of the Site. The Agency shall have relocated occupants and demolished and cleared the Site and removed all above ground structures located thereon and all substructures under existing buildings as required by Section 301.2. Notwithstanding anything to the contrary contained herein, this Condition Precedent shall not be deemed satisfied until such time as (i) any such relocation has been approved officially by the appropriate governmental authorities through duly authorized and appropriate action and all administrative appeals periods related thereto shall have expired, and (ii) if any litigation or administrative challenge of such relocation shall have been filed relating thereto, there has been a final non-appealable resolution of any such litigation or challenge affirming the validity of such action by the Agency.

(f) Title Policy. The Title Company shall, upon payment of Title Company's regularly scheduled premium, have agreed to provide to the Developer the Title Policy for the Site upon the Close of Escrow, in accordance with Section 203 hereof.

(g) Land Use Approvals. The Developer shall have received all Land Use Approvals and building permits shall have issued with respect to the Improvements required pursuant to Section 303 hereof.

(h) Financing. The Developer shall have obtained the Construction Financing as provided in Section 311.1 hereof, and such construction financing shall have closed and funded or to close and fund upon the Closing in accordance with the Construction Financing.

(i) Agency's Acquisition of the Third Party Property. Agency has acquired the Third Party Property in accordance with Sections 201.1 and/or 201.2 hereof.

(j) Adverse Conditions. No lawsuit (including by private parties), moratoria, or similar judicial or administrative proceeding or government action shall exist which would materially delay or significantly increase the cost of constructing the Agency Improvements.

(k) Approval of Hotel Operator, Franchisor and Franchise Agreement. The Developer shall have provided Agency and, to the extent required by this Agreement, Agency shall have approved the Hotel Operator, Franchisor and a Franchise Agreement, which approval shall be granted if each comply with the terms of this Agreement, including without limitation, Section 301.1.

(l) Pre-leasing and Approval of Tenant. Agency has approved the Tenant(s)/Operator(s) unless included in the list of Pre-approved Restaurant Tenant(s)/Operator(s).

(m) Declaration. The parties shall have mutually agreed upon the terms of the Declaration and the same shall be ready for recordation concurrently with the Close of Escrow.

(n) Development Agreement. Developer and City have executed a Development Agreement.

(o) Health & Safety Code Section 33445 Finding. The Agency and the City, each acting in its sole and absolute discretion, have adopted resolutions pursuant to Health & Safety Code Section 33445, approving the expenditure of funds for the infrastructure improvements required by Section 301.2.

300. DEVELOPMENT OF THE SITE

301. Scope of Development.

301.1 Improvements. Developer shall develop the Site in conformance with the Conceptual Site Plan, Land Use Approvals and the Scope of Development, within the time periods set forth in the Schedule of Performance. Once the Construction Drawings are approved by the Agency, as provided below, and the City, Developer's obligations under this Agreement with respect to Development Improvements shall be limited to ensuring that the Developer Improvements are constructed in accordance with the Construction Drawings. Developer shall improve the Site with the Developer Improvements. Notwithstanding anything to the contrary contained herein, Developer may elect to develop one (1) or both of the Limited Service Hotel(s) as an additional Upper Upscale Hotel (but consisting only of not less than one hundred fifty (150) rooms, 5,000 square feet of meeting space and a full-service restaurant and otherwise satisfying the hotel furniture, fixture and

equipment standards for an Upper Upscale Hotel set forth in Section I(B) of Exhibit C attached hereto), in which event the provisions of Section 409 hereof shall apply to such Hotel in lieu of the provisions of Section 410 hereof. The physical quality of the Developer Improvements, including, without limitation, construction quality, finish material, lighting, landscaping and site amenities shall be comparable, at a minimum, to each of the chosen Hotel's respective brand standards. In addition, as to the Upper Upscale Hotel(s) the physical quality, finish materials, lighting, landscaping and site amenities shall be set forth in the Scope of Development. Following the issuance of the Release of Construction Covenants for the Developer Improvements and thereafter until the expiration or termination of the Applicable Covenants Consideration Period with respect to each Hotel, the applicable Hotel and repair and maintenance thereof shall remain comparable in terms of quality and level of amenities to such Hotel as of the date of issuance of the Release of Construction Covenants; provided the foregoing is not intended to require Developer to take any action that might cause a violation of any Governmental Requirement, including without limitation, any regulations or building codes or, as a result of changes in laws, regulations or codes or other changed circumstances, require Developer to take any action to comply with the same that would make performance of the foregoing obligations commercially infeasible.

301.2 Agency Improvements. Subject to a determination by the Agency, acting in its reasonable discretion as to whether or not the cost (collectively "Agency Improvement Costs") of the Agency Improvements of the items described in (a), (b) and (c) below (collectively "Agency Improvements") exceeds Fifteen Million, Eight Hundred Thousand Dollars (\$15,800,000) (the "Agency Improvements Contribution Cap"), Agency shall cause, at its cost and expense, the following within the time set forth in the Schedule of Performance:

(a) Acquisition of the Site and relocation of all occupants of the Site in compliance with all applicable federal, state and local laws and regulations concerning displacement and relocation in accordance with Section 201.1 and 201.2, as applicable;

(b) The demolition and removal of all existing structures and improvements including foundations, and, subject to and as provided in Section 204, remediation of any Hazardous Materials on the Site, the proper disposal and mitigation of lead-based paint, asbestos and other environmental hazards pursuant to the requirements of the Department of Health Services in compliance with all applicable federal, state and local laws and regulations with respect to demolition and/or disposal and mitigation as described above; and

(c) Installation and completion of all offsite infrastructure required by the Land Use Approvals, including CEQA mitigation; provided, however, that the Agency and the City, each acting in its sole and absolute discretion, have adopted resolutions pursuant to Health & Safety Code Section 33445 approving the expenditure of funds for the infrastructure required by this subsection (c) of Section 301.2.

The Agency's determination of the Agency Improvement Costs shall be made no later than the date set forth in the Schedule of Performance by written notice to the Developer. If Agency determines that the Agency Improvements Costs exceeds the Agency Improvements Contribution Cap, it shall give notice to the Developer of such disapproval in accordance with the Schedule of Performance and such notice shall include (a) the specific amount by which any cost exceeds the Agency Improvements Contribution Cap and (b) back up information supporting the Agency's determination of its own budgeted expenses for such costs in sufficient detail to allow Developer to

determine whether or not, without obligation, to pay any such excess of such Agency Improvement Costs above the Agency Improvements Contribution Cap in lieu of termination of the Agreement.

301.3 Parking Structure. The Developer Improvements will include a Parking Structure, as described more fully in the Scope of Development and generally shown on the Conceptual Site Plan ("Parking Structure") which will serve the Project. The Parking Structure shall remain open and available to the public subject to Developer's right to impose parking charges and fees to the extent not prohibited by Governmental Requirements and/or the CFD Financing.

The financing for the Parking Structure may be (i) part of the Construction Financing or (ii) financed through CFD Bonds ("CFD Financing"). In the case of CFD Financing, if so requested by Developer, and if economically and legally feasible, the Agency will undertake the requisite actions to cause CFD Bonds to be issued with respect to the financing of the Parking Structure, provided that the Developer (or an agent engaged by Developer and reasonably approved by the Agency) provides completion guarantees and/or credit enhancements (conditioned upon receipt of the CFD Financing funds) in a form, amount and quality reasonably acceptable to Agency, the bonds or certificates of participation will be rated not less than BBB or its equivalent, and such bonds or certificates of participation will be at no cost to the Agency. In the event of CFD Financing, the parties will determine, each acting in their sole and absolute discretion, the manner in which the Parking Structure will be constructed, operated and maintained as a public parking structure.

301.4 Design Review. The Developer Improvements shall be subject to design review by the Agency within the timeframe set forth in this Agreement and in the Schedule of Performance.

302. Construction Drawings and Related Documents. The Developer shall submit, within the time frames set forth in the Schedule of Performance, and the Agency Director or his designee shall approve, within the time periods set forth in the Schedule of Performance, preliminary building elevations, final building elevations, construction drawings, landscape plans, and related documents required for the development of the respective portions of the Site (individually and collectively, the "Construction Drawings"). The City shall have the right to review and approve all Construction Drawings. In addition to processing Construction Drawings through the City, the Agency shall have the right to review and approve the Construction Drawings as to their compliance with the description of the applicable Developer Improvements as set forth herein, and their consistency with the previously approved design review and the Land Use Approvals. The Agency shall not have the right to disapprove any current set of Construction Drawings unless they are materially inconsistent with the review requirements of the immediately preceding sentence.

303. Land Use Approvals. Except as otherwise expressly set forth herein, prior to commencement of construction of the Developer Improvements upon the Site and in accordance with the Schedule of Performance, Agency shall, at its sole cost and expense (other than the cost of any plans, specifications and other design materials, the cost of which shall be paid by Developer), secure any and all land use and other entitlements and approvals which the City may require for the construction and operation of the Developer Improvements, the Parcel Map, design review by the Agency and/or any other entitlements, permits or approvals required by or from any other governmental agency (collectively, the "Land Use Approvals"). Notwithstanding anything to the contrary herein, Developer and Agency acknowledge and agree that Agency shall prepare, at Agency's expense, and process all documentation required by the California Environmental Quality Act ("CEQA") with respect to the Project. Except as to the Agency Improvements, costs of any

Project related on-site (as described in Paragraph I.E. of the Scope of Development) CEQA mitigation shall be borne by Developer, the cost of which shall be subject to Developer's approval as a condition to Developer's obligation to proceed with any such mitigation. Developer acknowledges that compliance with any such CEQA mitigation shall be a condition under applicable law for proceeding with the Project. Agency shall provide Developer with copies of all applications and other submittals for the Land Use Approvals and the CEQA compliance not less than fifteen (15) days prior to submitting them to any other Governmental Authority for Developer's prior review and written approval, and Agency shall not agree to any conditions, exactions and impositions related to the Developer Improvements or the Site without the prior written approval thereof from Developer. Notwithstanding anything to the contrary contained herein, the Land Use Approvals shall not be deemed obtained or secured until such time as (i) Developer has approved all conditions, exactions and impositions related thereto, in Developer's sole discretion, and (ii) the Land Use Approvals: (a) have been approved officially by the appropriate governmental authorities through duly authorized and appropriate action and all administrative appeals periods related thereto shall have expired, (b) are not subject to any further discretionary approvals of any kind, and (c) if any litigation or administrative challenge shall have been filed relating thereto, there has been a final non-appealable resolution of any such litigation or challenge affirming the validity of the Land Use Approvals.

304. Schedule of Performance. Provided that the Agency has timely met its respective obligations under the Schedule of Performance and subject to the application of Section 602 hereof, Developer shall submit the Construction Drawings, Commence Construction and Complete Construction of the Developer Improvements, and satisfy all other obligations and conditions of this Agreement which are the obligation of Developer within the times established therefor in the Schedule of Performance. The Schedule of Performance is subject to revision from time-to-time as provided therein and as otherwise mutually agreed upon in writing by Developer and the Agency Director.

305. Cost of Construction. Except as otherwise expressly set forth herein, including Sections 201, 204, 301 and 303 and costs relating to Agency Improvements, all of the cost of planning, designing, developing and constructing all of the Developer Improvements, including but not limited to payment or other satisfaction of development impact fees payable in connection with the Developer Improvements, shall be borne solely by Developer.

306. Insurance Requirements. Developer shall obtain and maintain at its sole cost and expense, or shall cause its contractor or contractors to take out and maintain at their sole cost and expense, until the issuance of the Release of Construction Covenants pursuant to Section 310 of this Agreement, the insurance coverages described in this Section 306, with the coverage limits, conditions, and endorsements defined herein.

306.1 Insurance Coverage. Prior to the earlier to occur of the (i) Developer's exercise of a right of entry under the Right of Entry Agreement or (ii) the approval of building permits, the following policies shall be obtained and maintained by Developer or its contractor or contractors covering all activities relating to construction of Developer Improvements at the Site:

(a) Comprehensive general liability insurance in the amount no less than One Million Dollars (\$1,000,000) per occurrence, Two Million Dollars (\$2,000,000) in the aggregate for claims arising out of bodily injury, personal injury and property damage. Coverage will include contractual, owners, contractors' protective policy and products and completed operations. In

addition, an excess policy in an amount of Four Million Dollars (\$4,000,000) covering the same terms and conditions will remain in force during the term of the Project.

(b) Comprehensive automobile liability insurance in the amount of One Million Dollars (\$1,000,000), combined single limit per occurrence (bodily injury and property damage liability), including coverage for liability arising out of the use of owned, non-owned, leased, or hired automobiles for performance of the work. As used herein the term "automobile" means any vehicle licensed or required to be licensed under the California or any other applicable state vehicle code. Such insurance shall apply to all operations of Developer or its contractors and subcontractors both on and away from the Site. In the event that any drivers are excluded from coverage, such drivers will not be permitted to drive in connection with construction of the Developer Improvements.

(c) Workers' compensation insurance as required by law.

Except for workers compensation insurance which shall be placed with The State Compensation Fund, acceptable insurance coverage shall be placed with carriers admitted to write insurance in California, or carriers with a rating of or equivalent to A:VII by A.M. Best Company. Any deviation from this rule shall require specific approval in writing from the Agency's risk manager or City Attorney. Any deductibles or self-insured retentions in excess of \$250,000 must be declared to and approved the Agency.

306.2 Policy Provisions. A certificate or certificates evidencing coverage described in subsections (a) through (c) above (the "Insurance") shall be submitted to the Agency prior to issuance of building permits for and commencement of the construction of the Developer Improvements, which certificates shall be accompanied by appropriate policy endorsements stating that:

(a) The Insurance shall be primary insurance for losses at the Site, and will be noncontributing with respect to any other insurance carried by Developer or its contractor(s) with respect to any losses which do not arise out of the construction of Developer Improvements, and any other insurance carried by the Agency or City which may be applicable shall be deemed to be excess insurance and the Insurance shall be primary for all purposes despite any conflicting provision in the Insurance to the contrary;

(b) Not less than ten (10) days advance notice shall be given in writing to the Agency and the City prior to any cancellation or termination of the Insurance;

(c) The City and the Agency are named as additional insureds. Coverage provided hereunder by Developer shall be primary insurance and not be contributing with any insurance maintained by the Agency or the City.

Upon request by Agency, Developer shall provide Agency with copies of complete insurance policies evidencing coverage as required herein. Certificates and endorsements for each insurance policy shall be signed by a person authorized by the insurer to bind coverage on its behalf. If required by Agency, Developer shall, from time to time, increase the limits of its general and automobile liability insurance to reasonable amounts customary for owners of improvements similar to those on the Site.

Notwithstanding anything to the contrary set forth in this Section, Developer's obligations to carry the insurance provided for herein may be brought within the coverage of a so-called blanket policy or policies of insurance carried and maintained by Developer or its affiliate; provided, however, (i) that the City of Garden Grove and the Agency shall be named as an additional insureds as its interest may appear and (ii) that the coverage afforded Agency, et. al., will not be reduced or diminished by reason of the use of such blanket policy of insurance, and (iii) that the requirements set forth herein are otherwise satisfied.

The obligations set forth in this Section 306.2 shall remain in effect as to any portion of the Site only until a Release of Construction Covenants has been furnished for such portion of the Site as hereafter provided in Section 310 of this Agreement.

306.3 Mutual Waivers. Except as otherwise set forth in Section 307 hereof, Agency and Developer hereby waive any rights each may have against the other, on account of any loss or damage occasioned to Agency and any additional insured parties and Developer, as the case may be, or the Site, arising from any loss generally covered by all-risk insurance; and the parties each, on behalf of their respective insurance companies insuring the property of either Agency and Developer against any such loss, waive any right of subrogation that such insurer or insurers may have against Agency and Developer, as the case may be. The foregoing mutual waivers of subrogation shall be mutually operative only so long as available in the state in which the Site is situated and provided further that no such policy is invalidated thereby.

307. Developer's Indemnity; Agency Indemnity. Except as set forth in Section 204 and except to the extent caused by a failure of Agency's warranties for representations or Default by Agency hereunder, Developer shall Indemnify (with one (1) counsel reasonably acceptable to the Agency, unless there is a conflict of interest by, among or between any of the Indemnitees, whether individuals or entities in which case separate counsel shall be provided by Developer for each such Indemnitee) the Indemnitees from and against any and all Liabilities which result from the performance of this Agreement by Developer or Developer's ownership, development, use, or operation of the Site or any portion thereof excepting those Liabilities which are caused by the Indemnitees' (or any of them) gross negligence or willful misconduct. The Agency, City and Developer agree to fully cooperate with one another in any case where no conflict of interest between the parties is apparent. Without limiting the generality of the foregoing, Developer specifically agrees to indemnify, defend and hold harmless Agency and City from any Liabilities resulting from Developer's failure to comply with all applicable laws in accordance with Section 309 hereof. Agency shall Indemnify (with one (1) counsel reasonably acceptable to Developer) the Developer Parties from and against any and all Liabilities which result from the Agency's relocation of the occupants as required by this Agreement.

308. Rights of Access. Representatives of the Agency shall have the right of access to the Site, without charges or fees, at normal construction hours during the period of construction for the purposes of this Agreement, including but not limited to, the inspection of the work being performed in constructing the Developer Improvements and so long as Agency representatives comply with all safety rules and do not unreasonably interfere with the work of Developer. Agency shall defend, indemnify, assume all responsibility for and hold the Developer Parties harmless from and against any and all third party liabilities, suits, actions, claims, demands, penalties, damages (including, without limitation, penalties, fines and monetary sanctions), losses, costs or expenses (including, without limitation, consultants' fees, and reasonable attorneys' fees of any kind or nature and for any damages, including damages to property or injuries to persons, including accidental death (including

reasonable attorneys' fees and costs), which result from the exercise of such entry. Representatives of the Developer shall have the right of access to those portions of the Site owned by Agency without charges or fees during normal construction hours for the purpose of Investigation and Grading (as those terms are defined in the Right of Entry and Reimbursement Agreement).

309. Compliance with Governmental Requirements. Developer shall carry out the design, construction and operation of the Project in conformity with all Governmental Requirements.

309.1 Nondiscrimination in Employment. Developer certifies and agrees that all persons employed or applying for employment by it, its affiliates, subsidiaries, or holding companies, and all subcontractors, bidders and vendors, with respect to the construction and operation of the Project, are and will be treated equally by it without regard to, or because of race, color, religion, ancestry, national origin, sex, age, pregnancy, childbirth or related medical condition, medical condition (cancer related) or physical or mental disability, and in compliance with Title VII of the Civil Rights Act of 1964, 42 U.S.C. Sections 2000, *et seq.*, the Federal Equal Pay Act of 1963, 29 U.S.C. Section 206(d), the Age Discrimination in Employment Act of 1967, 29 U.S.C. Sections 621, *et seq.*, the Immigration Reform and Control Act of 1986, 8 U.S.C. Sections 1324b, *et seq.*, 42 U.S.C. Section 1981, the California Fair Employment and Housing Act, California Government Code Sections 12900, *et seq.*, the California Equal Pay Law, California Labor Code Sections 1197.5, California Government Code Section 11135, the Americans with Disabilities Act, 42 U.S.C. Sections 12101, *et seq.*, and all other anti-discrimination laws and regulations of the United States and the State of California as they now exist or may hereafter be amended. Developer shall allow representatives of the Agency access to its employment records related to this Agreement during regular business hours at Developer's principal office in Garden Grove, California to verify compliance with these provisions when so requested by the Agency.

310. Release of Construction Covenants. Following Completion of the Phase 1 Developer Improvements and/or Phase 2 Developer Improvements in conformity with this Agreement and within thirty (30) calendar days following receipt of a written request from Developer, the Agency shall furnish Developer with a Release of Construction Covenants for the completed Developer Improvements or portion thereof. The Agency shall not unreasonably withhold or delay such Release of Construction Covenants. The Release of Construction Covenants shall be conclusive determination of satisfactory Completion of Construction of the Developer Improvements (or the part thereof identified in the Release of Construction Covenants) and the Release of Construction Covenants shall so state. Any party then owning or thereafter purchasing, leasing or otherwise acquiring any interest in the Site (or part thereof which is the subject of Release of Construction Covenants) shall not (because of such ownership, purchase, lease or acquisition) incur any obligation or liability under this Agreement except for those continuing covenants as set forth in Sections 400 of this Agreement. If the Agency refuses or fails to furnish the Release of Construction Covenants for the Site (or part thereof) after written request from Developer, the Agency shall, within thirty (30) working days of receiving such written request, provide Developer with a written statement setting forth the reasons the Agency has refused or failed to furnish the Release of Construction Covenants for the Site (or part thereof). The statement shall also contain a list of the actions Developer must take to obtain a Release of Construction Covenants, which list shall be based on the requirements set forth in the Construction Documents. If the reason for the Agency's refusal to issue the Release of Construction Covenants is due to lack of availability of specific landscape and/or finish materials, the Developer may provide a completion bond reasonably acceptable to the Agency, in which case the Developer shall thereby become entitled to the Release of Construction Covenants.

Such Release of Construction Covenants shall not constitute evidence of compliance with or satisfaction of any obligation of Developer to any holder of any mortgage, or any insurer of a mortgage securing money loaned to finance the Developer Improvements, or any part thereof. Such Release of Construction Covenants is not a notice of completion as referred to in the California Civil Code, Section 3093.

311. Financing of the Developer Improvements.

311.1 Approval of Financing. Prior to the Close of Escrow and in accordance with the Schedule of Performance, Developer shall have submitted evidence to the Agency that Developer has equity capital and/or a lender commitment from one (1) or more institutional lender(s) (individually and collectively, the "Construction Lender") for the construction of the Hotels in accordance with this Agreement ("Construction Financing"). In addition, such Construction Financing shall be funded or to fund at the Closing in accordance with the Schedule of Performance as provided in accordance with Sections 205.1(f) and 205.2(h) hereof. Agency shall have the right to review and approve any such Construction Financing in its reasonable discretion. The Agency shall approve Construction Financing if the debt portion, if any, is issued by an institutional lender, together with Developer's equity (and, if applicable, the commitment of a Tenant to reimburse the Developer for all or any portion of the costs of the Developer Improvement), is in an amount not less than the cost of the Developer Improvements and conditioned only upon Closing and other customary construction loan closing and funding requirements. Developer and Agency agree that Developer shall be solely responsible for all financial obligations under such financing.

311.2 Holder Not Obligated to Construct Developer Improvements. The holder of any mortgage or deed of trust authorized by this Agreement (a "Holder") shall not be obligated by the provisions of this Agreement to construct or Complete the Construction of the Developer Improvements or any portion thereof, or to guarantee such construction or Completion of Construction; nor shall any covenant or any other provision in this Agreement be construed so to obligate such Holder. Nothing in this Agreement shall be deemed to construe, permit or authorize any such Holder to devote the Site to any uses or to construct any improvements thereon, other than those uses or Developer Improvements provided for or authorized by this Agreement.

311.3 Notice of Default to Mortgagee or Deed of Trust Holders; Right to Cure. With respect to any mortgage or deed of trust granted by Developer as provided herein, whenever the Agency delivers any notice of default ("Notice of Default") or demand to Developer with respect to any Breach or Default by Developer in the construction of the Developer Improvements, and if Developer fails to cure the Default within the time set forth in Section 501, the Agency shall deliver to each Holder of record of any mortgage or deed of trust authorized by this Agreement a copy of such notice or demand. Each such Holder shall (insofar as the rights granted by the Agency are concerned) have the right, at its option, within thirty (30) days after the receipt of the notice, to cure or remedy or commence to cure or remedy and thereafter to pursue with due diligence the cure or remedy of any such Default and to add the cost thereof to the mortgage debt and the lien of its mortgage; provided, however if the Holder is legally prevented from curing such default because of a bankruptcy by the Developer or because such cure requires physical possession of the Site then the thirty (30) day period shall be tolled until such bankruptcy is confirmed, rejected or otherwise resolved or the Holder has obtained lawful physical possession of the Site. Nothing contained in this Agreement shall be deemed to permit or authorize such Holder to undertake or continue the construction or Completion of Construction of the Developer Improvements, or any portion thereof (beyond the extent necessary to conserve or protect the improvements or construction already made)

without first having expressly assumed Developer's obligations to the Agency by written agreement reasonably satisfactory to the Agency which election to assume may be made within ninety (90) days following Holder's securing of title to the Property. Such assumption shall not have the effect of causing the Holder to be responsible for any prior damage obligations of Developer to the Agency. The Holder, in that event, must agree to Complete Construction, in the manner provided in this Agreement, the Developer Improvements. Any such Holder properly Completing the Construction of the Developer Improvements or portion thereof shall be entitled, upon compliance with the requirements of Section 310 of this Agreement, to a Release of Construction Covenants. It is understood that a Holder shall be deemed to have satisfied the thirty (30) day time limit set forth above for commencing to cure or remedy a Developer default which requires title and/or possession of the Site (or portion thereof) if and to the extent any such Holder has within such thirty (30) day period commenced foreclosure proceedings to obtain title and/or possession and thereafter the Holder diligently pursues such proceedings to completion and cures or remedies the default.

311.4 Failure of Holder to Complete the Construction of the Developer Improvements. In any case where, thirty (30) days after the Holder of any mortgage or deed of trust creating a lien or encumbrance upon the Site or any part thereof receives a Notice of Default by Developer in Completion of construction of any of the Developer Improvements under this Agreement, and the Holder has not exercised the option to construct as set forth in Section 311.3, or if it has exercised the option but has defaulted thereunder and failed to timely cure such default, the Agency may, by giving written notice to the Holder, purchase the mortgage or deed of trust by payment to the Holder of the amount of the unpaid mortgage or deed of trust debt, including principal and interest and all other sums secured by the mortgage or deed of trust. If the ownership of the Site or any part thereof has vested in the Holder, the Agency, if it so desires, shall be entitled to a conveyance of title to the Site or such portion thereof from the Holder to the Agency upon payment to the Holder of an amount equal to the sum of the following:

- (a) The unpaid mortgage or deed of trust debt at the time title became vested in the Holder (less all appropriate credits, including those resulting from collection and application of rentals and other income received during foreclosure proceedings);
- (b) All expenses with respect to foreclosure including reasonable attorneys' fees;
- (c) The net expense, if any (exclusive of general overhead), incurred by the Holder as a direct result of the subsequent management of the Site or part thereof;
- (d) The costs of any Developer Improvements made by such Holder;
- (e) Any prepayment charges, default interest, and/or late charges imposed pursuant to the loan documents and agreed to by Developer; and
- (f) An amount equivalent to the interest that would have accrued on the aggregate of such amounts had all such amounts become part of the mortgage or deed of trust debt and such debt had continued in existence to the date of payment by the Agency.

311.5 Right of the Agency to Cure Mortgage or Deed of Trust Default. In the event Developer receives a notice of default on any mortgage or deed of trust prior to the Completion of Construction of the Developer Improvements and issuance of a total Release of Construction

Covenants, Developer shall immediately deliver to the Agency a copy of such notice of default. If the Holder of any mortgage or deed of trust has not exercised its option to construct, the Agency shall have the right but not the obligation to cure the default. The Agency shall be entitled to reimbursement from Developer of all proper costs and expenses incurred by the Agency in curing such default. The Agency shall also be entitled to a lien upon the Site to the extent of such costs and disbursements.

400. COVENANTS AND RESTRICTIONS

401. Covenant to Develop, Use and Operate the Site in Accordance with Redevelopment Plan, Land Use Approvals, and this Agreement. Until expiration of the Redevelopment Plan, Developer covenants and agrees for itself and its successors, assigns, and every successor in interest to such portion the Site, or any part thereof that Developer and such successors and assignees, shall use and operate the Site in accordance with the Redevelopment Plan, the Land Use Approvals, and this Agreement, and except for a Holder who, pursuant to Section 311, has not elected to assume Developer's obligations hereunder to construct, shall construct and Complete Construction of the Developer Improvements in accordance with the Land Use Approvals, Scope of Development, Section 301.1, and Schedule of Performance.

402. Maintenance and Security Covenants. Developer covenants and agrees for itself, its successors and assigns and any successor in interest to the Site or part thereof to maintain, at Developer's sole cost and expense, the Site and all Developer Improvements thereon, in compliance with the terms of the Declaration, the Redevelopment Plan and with all applicable Governmental Requirements. The operation, use, security and maintenance of the Site, shall be accomplished in accordance with the Covenants and Declaration (to be approved by the parties prior to Closing) consistent with other first-class hotel/retail/restaurant projects in Orange County, and shall include regular landscape maintenance, graffiti removal, and trash and debris removal.

403. Nondiscrimination. The Developer covenants by and for itself and any successors in interest that there shall be no discrimination against or segregation of any person or group of persons on account of race, color, creed, religion, sex, marital status, physical or mental disability or medical condition, national origin or ancestry in the sale, lease, sublease, transfer, use, occupancy, tenure or enjoyment of the Improvements or the Site, nor shall the Developer itself or any person claiming under or through it establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants, sublessees or vendees of the Project or the Site. The foregoing covenants shall run with the land.

All deeds, leases or contracts with respect to the Project or the Site shall contain or be subject to substantially the following nondiscrimination or nonsegregation clauses:

a. **In deeds:** "The grantee herein covenants by and for himself or herself, his or her heirs, executors, administrators, and assigns, and all persons claiming under or through them, that there shall be no discrimination against or segregation of, any person or group of persons on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code, as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, in the sale, lease, sublease, transfer, use, occupancy, tenure, or enjoyment of the premises herein conveyed, nor shall the grantee or any person claiming under or through him or her, establish or permit any practice or practices of

discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants, sublessees, or vendees in the premises herein conveyed. The foregoing covenants shall run with the land."

"Notwithstanding the immediately preceding paragraph, with respect to familial status, the immediately preceding paragraph shall not be construed to apply to housing for older persons, as defined in Section 12955.9 of the Government Code. With respect to familial status, nothing in the immediately preceding paragraph shall be construed to affect Sections 51.2, 51.3, 51.4, 51.10, 51.11, and 799.5 of the Civil Code, relating to housing for senior citizens. Subdivision (d) of Section 51 and Section 1360 of the Civil Code and subdivisions (n), (o), and (p) of Section 12955 of the Government Code shall apply to the immediately preceding paragraph."

b. **In leases:** "The lessee herein covenants by and for himself or herself, his or her heirs, executors, administrators, and assigns, and all persons claiming under or through him or her, and this lease is made and accepted upon and subject to the following conditions:

"That there shall be no discrimination against or segregation of any person or group of persons, on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code, as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, in the leasing, subleasing, transferring, use, occupancy, tenure, or enjoyment of the premises herein leased nor shall the lessee himself or herself, or any person claiming under or through him or her, establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use, or occupancy, of tenants, lessees, sublessees, subtenants, or vendees in the premises herein leased."

"Notwithstanding the immediately preceding paragraph, with respect to familial status, the immediately preceding paragraph shall not be construed to apply to housing for older persons, as defined in Section 12955.9 of the Government Code. With respect to familial status, nothing in the immediately preceding paragraph shall be construed to affect Sections 51.2, 51.3, 51.4, 51.10, 51.11, and 799.5 of the Civil Code, relating to housing for senior citizens. Subdivision (d) of Section 51 and Section 1360 of the Civil Code and subdivisions (n), (o), and (p) of Section 12955 of the Government Code shall apply to the immediately preceding paragraph."

c. **In contracts:** "There shall be no discrimination against or segregation of, any person or group of persons on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code, as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, in the sale, lease, sublease, transfer, use, occupancy, tenure, or enjoyment of the premises which are the subject of this Agreement, nor shall the grantee or any person claiming under or through him or her, establish or permit any practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants,

sublessees, or vendees in the premises herein conveyed. The foregoing covenants shall run with the land."

404. Assessed Value. The Developer, and its successors in interest, shall not appeal the assessed value of the Project prior to the expiration of the Redevelopment Plan so as to achieve a total assessed value after Completion, of less than the greater of \$75,000,000.00 with respect to the Phase 1 Improvements and \$25,000,000.00 with respect to the Phase 2 Improvements or the assessed value imposed by the County Assessor in the fiscal year following the year in which the Completion of Construction of the Phase 1 Developer Improvements or the Phase 2 Developer Improvements, as applicable, occurred.

405. Prevailing Wages. With respect to the construction of the Developer Improvements on the Site set forth herein and in the Scope of Work, Developer and its contractors and subcontractors shall pay prevailing wages and employ apprentices in compliance with Labor Code Section 1770, *et seq.*, and shall be responsible for the keeping of all records required pursuant to Labor Code Section 1776, complying with the maximum hours requirements of Labor Code Sections 1810 through 1815, and complying with all regulations and statutory requirements pertaining thereto. Such requirements are set forth in greater detail in Exhibit J attached hereto and incorporated herein by reference. The referenced Labor Code sections and Exhibit J are referred to herein collectively as the "Prevailing Wage Requirements." Upon the periodic request of the Agency, the Developer shall certify to the Agency that it is in compliance with the requirements of this Section 405. Notwithstanding anything to the contrary contained in this Agreement, Developer shall not be required to comply with the Prevailing Wage Requirements with respect to any discreet portions of the Developer Improvements if and to the extent the Prevailing Wage Requirements are inapplicable to such discreet portions. Developer shall indemnify, protect, defend and hold harmless the Agency and its officers, employees, contractors and agents, with counsel reasonably acceptable to Agency, from and against any and all loss, liability, damage, claim, cost, expense and/or "increased costs" (including reasonable attorneys fees, court and litigation costs, and fees of expert witnesses) which, in connection with the development, construction, and/or operation of the Developer Improvements, including, without limitation, any and all public works (as defined by applicable law), results or arises in any way from any of the following: (1) the noncompliance by Developer with any applicable local, state and/or federal law, including, without limitation, any applicable federal and/or state labor laws (including, without limitation, if applicable, the requirement to pay state prevailing wages); (2) the implementation of Section 1781 of the Labor Code, as the same may be amended from time to time, or any other similar law; and/or (3) failure by Developer to provide any required disclosure or identification as required by Labor Code Section 1781, as the same may be amended from time to time, or any other similar law. It is agreed by the parties that, in connection with the development of the Developer Improvements, including, without limitation, any and all public works (as defined by applicable law), Developer shall bear all risks of payment or non-payment of prevailing wages under California law and/or the implementation of Labor Code Section 1781, as the same may be amended from time to time, and/or any other similar law. "Increased costs," as used in this Section 405, shall have the meaning ascribed to it in Labor Code Section 1781, as the same may be amended from time to time. The foregoing indemnity shall survive termination of this Agreement and shall continue after Completion of Construction of the Developer Improvements by the Developer.

406. Point of Sale and/or Use. The Developer, for itself and for its general contractor and subcontractor, agrees to obtain a State Board of Equalization sub-permit for the jobsite and allocate all eligible use tax payments to the City of Garden Grove and provide the Agency with either a copy

of the sub-permit or a statement that the use tax does not apply to this portion of the job, to insure that the City of Garden Grove is the point of sale and/or use under the Bradley Burns Uniform Local Sales and Use Tax Law (commencing with Section 7200 of the Revenue and Taxation Code, as amended from time to time).

407. Agency Use of Hotel Facility. During the period of twelve (12) years commencing upon the date the Hotel opens for business to the public, Developer will provide Agency with ten (10) hotel room nights per year, free of charge, and will allow the Agency to use the conference and/or banquet facilities and services at the Hotels on at least three (3) occasions per year (an "occasion" means an event lasting up to two (2) days) at a fifteen percent (15%) discount from the lowest rate charged during the past twelve (12) months on a space available basis, excluding services or goods provided by third parties. However, Agency's right to such free or discounted use of rooms and/or conference and/or banquet facilities may not be exercised during prime convention and/or tourist season, and the number of rooms shall be limited to five (5) at any given time.

408. Effect of Violation of the Terms and Provisions of this Agreement. The Agency is deemed the beneficiary of the terms and provisions of this Agreement and of the Covenants, for and in its own right and for the purposes of protecting the interests of the community and other parties, public or private, in whose favor and for whose benefit this Agreement and the Covenants have been provided, without regard to whether the Agency has been, remains or is an owner of any land or interest therein in the Site. The Agency shall have the right (subject to Section 501 below), upon a Default by Developer of this Agreement, to exercise all rights and remedies, and to maintain any actions or suits at law or in equity or other proper proceedings to enforce the curing of such breaches to which it or any other beneficiaries of this Agreement and Covenants may be entitled. Except as otherwise provided therein, the Covenants contained in Sections 103, 301, 309, and 401, 402, 404 and 406, and the Declaration shall survive Closing and remain in effect until the expiration of the Redevelopment Plan, as it may be amended from time to time. The Covenants set forth in Sections 204.2, 204.3, 307, 403, and 603 shall survive Closing and remain in effect in perpetuity. The Covenants described in Sections 304, 305, 306, 308, 405 and 503 shall survive Closing and remain in effect with respect to a portion of the Site until the issuance of a Release of Construction Covenants with respect to such portion of the Site and so long thereafter as shall be necessary to enforce a Default(s) thereunder. The Covenants set forth in Section 407, 409, 410, 411 and 412 shall survive Closing and remain in effect in accordance with the terms set forth therein.

409. Upper Upscale Hotel Covenant Consideration. In consideration for the granting of the Covenants by the Developer to the Agency, Agency shall pay to the Developer annually, within thirty (30) days after receipt by the City of transient Occupancy Tax attributable to the Upper Upscale Hotel, from the date on which Completion of Construction of the Upper Upscale Hotel occurs:

(a) through June 30, 2034, an amount equal to fifty-eight percent (58%) of the Transient Occupancy Tax Revenues which have been paid to and received by the City in each calendar year during such period with respect to the Upper Upscale Hotel(s); and

(b) for a period of twelve years, an amount equal to fifty percent (50%) of the Remaining Revenues in each calendar year during such period.

For purposes of this Section 409, "Remaining Revenues" means (i) an amount equal to the balance of the Transient Occupancy Tax attributable to the Upper Upscale Hotel after

deducting the amounts described in (a) above (i.e., the remaining 42% of the Transient Occupancy Tax Revenues attributable to the Upper Upscale Hotel), (ii) Net Tax Increment Revenues attributable to the Upper Upscale Hotel Component in each calendar year during such period, and (iii) Sales Tax Revenues attributable to the Upper Upscale Hotel Components in each calendar year during such period, after deducting an amount equal to fourteen and 29/100 percent (14.29%) of the Agency Improvement Costs each such calendar year until the total amount of the Agency Improvement Costs has been reached.

Examples of the above are shown in the Covenant Consideration Computation Example.

410. Limited Service Hotel Covenant Consideration. In consideration for the granting of the Covenants by the Developer to the Agency, and with respect to each Limited Service Hotel on the Site, Agency shall pay to the Developer annually, for the period commencing on the date on which Completion of Construction of such Limited Service Hotel(s) has occurred and expiring ten (10) years thereafter, an amount equal to fifty percent (50%) of (i) the Transient Occupancy Tax Revenues which have been paid to and received by the City in each calendar year during such period with respect to each such Limited Service Hotel, (ii) the Net Tax Increment attributable to the Limited Service Hotel(s) in each calendar year during such period, and (iii) Sales Tax Revenues attributable to the Limited Service Hotel(s) in each calendar year during such period. Such payments will be made to Developer within thirty (30) days after receipt of such revenues by the City or Agency, as applicable.

Examples of the above are shown in the Covenant Consideration Computation Example.

411. Sunbelt Property Covenant Consideration. In consideration for the granting of the Covenants by the Developer to the Agency, and without limiting the amounts payable pursuant to Sections 409 and 410 above, Agency shall pay to the Developer annually with respect to the Sunbelt Property, from and after Completion of Construction of any portion of the Retail/Restaurant/Entertainment Component on the Sunbelt Property, an amount equal to fifty percent (50%) of the Net Tax Increment Revenues and Sales Tax Revenues attributable to Retail/Restaurant/Entertainment Component of the Sunbelt Property for a period of ten (10) years from the date on which Completion of Construction of each such portion of the Retail/Restaurant/Entertainment Components on the Sunbelt Property (i.e., there shall be separate 10-year payment periods for each such portion of the Retail/Restaurant/Entertainment Components on the Sunbelt Property), in each case as received by the City in each calendar year during such period. The payments required by this Section 411 shall be prorated for any partial years at the beginning or end of the applicable periods and paid to Developer within thirty (30) days after receipt of such revenues by the City or Agency, as applicable.

412. Allocation of Covenant Consideration. Notwithstanding the allocations of Covenant Consideration described in Sections 409, 410, and 411, the Developer may, without the approval of the Agency, reallocate the Covenant Consideration between and among the separate development entities who own the Separate Components, as described in Section 103.2.

500. DEFAULTS AND REMEDIES

501. Default Remedies. Subject to Enforced Delay and compliance with the provisions of this Agreement which provide for the protection of Mortgagee rights, including the provisions of Section 311 of this Agreement, failure or delay by either party to perform any material term or

provision of this Agreement (a "Breach") following notice and failure to cure as described hereafter constitutes a "Default" under this Agreement.

The nondefaulting party shall give written notice of any Breach to the party in Breach, specifying the Breach complained of by the nondefaulting party ("Notice of Default"). Delay in giving such Notice of Default shall not constitute a waiver of any Breach nor shall it change the time of Breach. Upon receipt of the Notice of Default, the party in Breach shall promptly commence to cure the identified Breach at the earliest reasonable time after receipt of the Notice of Default and shall complete the cure of such Breach not later than thirty (30) days after receipt of the Notice of Default, or, if such Breach cannot reasonably be cured within such thirty (30) day period, then as soon thereafter as reasonably possible, provided that the party in Breach shall diligently pursue such cure to completion ("Cure Period"). Failure of the party in Breach to cure the Breach within the Cure Period set forth above shall constitute a "Default" hereunder.

Any failures or delay by either party in asserting any of its rights and remedies as to any Breach or Default shall not operate as a waiver of any Breach or Default or of any such rights or remedies. Delays by either party in asserting any of its rights and remedies shall not deprive either party of its right to institute and maintain any actions or proceedings which it may deem necessary to protect, assert or enforce any such rights or remedies.

AGENCY SHALL ALSO BE REQUIRED TO SEND NOTICES OF DEFAULT TO EACH MORTGAGEE FOR WHICH AGENCY HAS RECEIVED A MORTGAGEE NOTICE.

502. Institution of Legal Actions. In addition to any other rights or remedies and subject to the restrictions otherwise set forth in this Agreement, any party may institute an action at law or equity to seek specific performance of the terms of this Agreement, or to cure, correct or remedy any Default, to recover damages for any Default, or to obtain any other remedy consistent with the purpose of this Agreement. Such legal actions must be instituted in the Superior Court of the County of Orange, State of California, in an appropriate municipal court in that county, or in the United States District Court for the Central District of California.

503. Re-entry and Revesting of Title in the Agency After the Closing and Prior to Completion of Construction. Without limiting the rights as set forth in Section 311, and without affecting the priority of the lien of the Holder's deed of trust or mortgage, the Agency has the right, at its election, to reenter and take possession of a portion of the Site with all Developer Improvements thereon, and terminate and Revest in the Agency the estate conveyed to the Developer with respect to a portion of the Site only if after the Closing and prior to the issuance of the final Release of Construction Covenants with respect to such portion of the Site, the Developer (or its successors in interest) shall:

(a) fail to start the construction of the Developer Improvements on such portion of the Site as required by this Agreement for a period of ninety (90) days after Notice thereof from the Agency subject to extension pursuant to Section 602; or

(b) abandon or substantially suspend construction of the Developer Improvements on such portion of the Site required by this Agreement for a period of ninety (90) days after Notice thereof from the Agency subject to extension pursuant to Section 602; or

(c) contrary to the provisions of Section 103 hereof, Transfer or suffer any involuntary Transfer in violation of this Agreement, and such Transfer, if it is a Transfer requiring approval by the Agency, is not rescinded within thirty (30) days of Notice thereof from Agency to Developer.

Such right to reenter, terminate and Revest is subject to the quiet enjoyment, and, if applicable, the right to continue to complete construction by (i) Tenants or other occupants who have (a) executed leases or subleases and (b) incurred substantial expenses in connection with the design and/or construction of improvements required to be constructed by such Tenant under such lease or sublease and (ii) Developer, in the case where the Developer is in Default and, vis a vis a Holder or its Nominee, shall be exercisable only if:

1. Such Holder (or its Nominee) (a) shall have failed to cure any Default within the applicable cure periods granted to such Holder (or its Nominee), or (b) shall have given Agency written notice that it will not cure any such Default or condition or that it will otherwise not comply with the terms and conditions of this Agreement, and

2. Agency, within ninety (90) days after the occurrence of any events described in subparagraph 1. immediately above, shall commence the exercise of its right of entry and shall pay to Holder (or its Nominee) in immediately available funds, the Loan Balance prior to Revesting.

In the event of a failure or refusal to cure a Default, as described in subparagraph 1. above, Agency's sole remedy vis a vis Holder shall be the exercise of the re-entry right and Revesting in accordance herewith. Nothing herein shall be construed to prohibit or limit the Agency's exercise of its power of eminent domain.

The conditions to the commencement of the exercise of the Agency's right to re-enter and Revest as described above shall be applicable whether the re-entry and Revesting occurs (a) prior to foreclosure (or deed in lieu of foreclosure) by the Holder (or its Nominee) under its mortgage or deed of trust; or (b) after Holder (or its Nominee) acquires title to the Site by foreclosure (or deed-in-lieu of foreclosure) under its mortgage or deed of trust.

The applicable Grant Deed shall contain appropriate reference and provision to give effect to the Agency's right as set forth in this Section 503, under specified circumstances prior to recordation of the Release of Construction Covenant, to reenter and take possession of the Site, with all improvements thereon, and to terminate and Revest in the Agency the estate conveyed to the Developer. Upon the Revesting in the Agency of title to the Site, as provided in this Section 503, the Agency shall, pursuant to its responsibilities under state law, use its reasonable efforts to resell the Site, as soon and in such manner as the Agency shall find feasible and consistent with the objectives of such law and of the Redevelopment Plan, as it exists or may be amended, to a qualified and responsible party or parties (as determined by the Agency) who will assume the obligation of constructing or completing the Developer Improvements, or such improvements in their stead as shall be satisfactory to the Agency and in accordance with the uses specified for such Site, or part thereof in the Redevelopment Plan. Upon such resale of the Site, the net proceeds thereof, shall be applied:

(i) First, to reimburse the Agency, on its own behalf or on behalf of the City, all costs and expenses incurred by the Agency, excluding City and Agency staff costs, but specifically,

including, but not limited to, any expenditures by the Agency or the City in connection with the recapture, management and resale of the Site, or part thereof (but less any income derived by the Agency from the Site, or part thereof in connection with such management); all taxes, assessments and water or sewer charges with respect to the Site, or part thereof which the Developer has not paid (or, in the event that the Site is exempt from taxation or assessment of such charges during the period of ownership thereof by the Agency, an amount, if paid, equal to such taxes, assessments, or charges as would have been payable if the Site were not so exempt); any payments made or necessary to be made to discharge any encumbrances or liens existing on the Site, or part thereof at the time or Revesting of title thereto in the Agency, or to discharge or prevent from attaching or being made any subsequent encumbrances or liens due to obligations, defaults or acts of the Developer, its successors or transferees; any expenditures made or obligations incurred with respect to the constructing or completion of the improvements or any part thereof on the Site, or part thereof; and any amounts otherwise owing the Agency, and in the event additional proceeds are thereafter available, then

(ii) Second, to reimburse the Developer, its successor or transferee, up to the amount equal to the sum of (a) actual and direct third party costs incurred by the Developer for the Developer Improvements existing on the Site, at the time of the re-entry and possession, less (b) any gains or net income received by the Developer from the Site, or the improvements thereon.

Any balance remaining after such reimbursements shall be retained by the Agency as its property. The rights established in this Section 503, except as may otherwise be provided in this Section 503, are not intended to be exclusive of any other right, power or remedy, but each and every such right, power, and remedy shall be cumulative and concurrent and shall be in addition to any other right, power and remedy authorized herein or now or hereafter existing at law or in equity. These rights are to be interpreted in light of the fact that the Agency will have conveyed the Site, to the Developer for redevelopment purposes, and not for speculation in undeveloped land.

504. Rights and Remedies Are Cumulative. Except as otherwise expressly stated in this Agreement, the rights and remedies of the parties are cumulative, and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other party.

505. Inaction Not a Waiver of Default. Any failures or delays by either party in asserting any of its rights and remedies as to any Default shall not operate as a waiver of any Default or of any such rights or remedies, or deprive either such party of its right to institute and maintain any actions or proceedings which it may deem necessary to protect, assert or enforce any such rights or remedies.

506. Applicable Law. The laws of the State shall govern the interpretation and enforcement of this Agreement.

600. GENERAL PROVISIONS

601. Notices, Demands and Communications Between the Parties. Any approval, disapproval, demand, document or other notice ("Notice") required or permitted under this Agreement must be in writing and shall be sufficiently given if delivered by hand (and a receipt therefore is obtained or is refused to be given) or dispatched by registered or certified mail, postage prepaid, return receipt requested, or delivered by telecopy, or email or overnight delivery service to:

To Agency: Garden Grove Agency for Community Development
11222 Acacia Parkway
Garden Grove, California 92840
Attention: Agency Director

with a copy to: Stradling, Yocca, Carlson & Rauth
660 Newport Center Drive, Suite 1600
Newport Beach, California 92660
Attention: Thomas P. Clark, Jr.

To Developer: Land & Design, Inc.
8130 La Mesa Boulevard, #808
La Mesa, California 91942
Attention: Matthew Reid

with a copy to: E-Ticket Hospitality, LLC
420 McKinley Street, Suite 111
Corona, California 92879
Attention: David Rose

with a copy to: Allen Matkins Leck Gamble Mallory & Natsis, LLP
501 West Broadway, 15th Floor
San Diego, California 92101
Attention: Tom Crosbie

Such written notices, demands and communications may be sent in the same manner to such other addresses as either party may from time to time designate by mail as provided in this Section.

602. Extension of Times of Performance. In addition to specific provisions of this Agreement, performance by either party hereunder shall not be deemed to be in Default, and all performance and other dates specified in this Agreement shall be extended, where delays are due to ("Enforced Delay"): litigation challenging the validity of this transaction or any element thereof or the right of either party to engage in the acts and transactions contemplated by this Agreement; eminent domain actions filed by the Agency pursuant to Section 201.2 including, without limitation, relocation obligations in connection therewith and inverse condemnation actions, inability to secure necessary labor materials or tools; actions in connection with the remediation of Hazardous Materials, including groundwater contamination; war; insurrection; strikes; lockouts; riots; floods; earthquakes; fires; casualties; acts of God; acts of the public enemy; acts of terrorism; epidemics; quarantine restrictions; freight embargoes; unanticipated subsurface conditions that delay performance; lack of transportation; governmental restrictions or priority; building moratoria; unusually severe weather; or acts or omissions of the other party; acts or failures to act of the City or any other public or governmental agency or entity (other than the acts or failures to act of the Agency which shall not excuse performance by the Agency); or during the pendency of any dispute between Agency or Developer, regarding Developer's construction obligations hereunder provided that the party claiming the right to an extension of time is determined to be the prevailing party in such dispute. Notwithstanding anything to the contrary in this Agreement, an extension of time for any such cause shall be for the period reasonably attributable to the enforced delay and shall commence to run from the time of the commencement of the cause, if notice by the party claiming such

extension is sent to the other party within thirty (30) days of the later of commencement of the cause or such party's discovery of such cause. Times of performance under this Agreement may also be extended in writing by the mutual agreement of the Agency and/or Developer. Notwithstanding any provision of this Agreement to the contrary, the lack of funding to Complete the Developer Improvements shall not constitute grounds of enforced delay pursuant to this Section 602.

603. Non Liability of Officials and Employees of Agency, City and Developer. No member, official, shareholder or employee of either party or of the City shall be personally liable to the other party or the City, or any successor in interest, in the event of any Default or Breach by the either party or for any amount which may become due to either party or their successors, or on any obligations under the terms of this Agreement.

604. Relationship Between Agency and Developer. It is hereby acknowledged that the relationship between the Agency and Developer is not that of a partnership or joint venture and that the Agency and Developer shall not be deemed or construed for any purpose to be the agent of the other. Accordingly, except as expressly provided herein or in the Exhibits hereto, the Agency shall have no rights, powers, duties or obligations with respect to the development, operation, maintenance or management of the Site.

605. Agency Approvals and Actions. Whenever a reference is made herein to an action or approval to be undertaken by the Agency, the Agency Director or his or her designee is authorized to act on behalf of Agency unless specifically provided otherwise or the context should require otherwise.

606. Commencement of Agency Review Period. The time periods set forth herein and in the Schedule of Performance for the Agency's approval of agreements, plans, drawings, or other information submitted to the Agency by Developer and for any other Agency consideration and approval hereunder which is contingent upon documentation required to be submitted by Developer shall only apply and commence upon the submittal of all the reasonably required information. In no event shall a materially incomplete submittal by Developer trigger any of the Agency's obligations of review and/or approval hereunder; provided, however, that the Agency shall notify Developer of an incomplete submittal as soon as is practicable.

607. Successors and Assigns. All of the terms, covenants, conditions, representations, and warranties, of this Agreement shall be binding upon Agency and Developer and their respective permitted successors and assigns. Whenever the term "Developer" or "Agency," as the case may be, is used in this Agreement, such term shall include any other permitted successors and assigns as herein provided.

608. Assignment by Agency. The Agency may assign or transfer any of its rights or obligations under this Agreement with the approval of Developer, which approval shall not be unreasonably withheld; provided, however, that the Agency may assign or transfer any of its interests hereunder to the City at any time without the consent of Developer provided that such assignment does not negatively affect any of Developer's rights or increase Developer's obligations hereunder.

609. Counterparts. This Agreement may be signed in multiple counterparts which, when signed by all parties, shall constitute a binding agreement. This Agreement is executed in three (3) originals, each of which is deemed to be an original.

610. Integration. This Agreement contains the entire understanding between the parties relating to the transaction contemplated by this Agreement. All prior or contemporaneous agreements, understandings, representations and statements, oral or written, are merged in this Agreement and shall be of no further force or effect. Each party is entering this Agreement based solely upon the representations set forth herein and upon each party's own independent investigation of any and all facts such party deems material. This Agreement includes pages 1 through 42 (includes signature page) and Exhibits A through M, (each such Exhibit incorporated in this Agreement as if fully set forth herein) which together constitute the entire understanding and agreement of the parties, notwithstanding any previous negotiations or agreements between the parties or their predecessors in interest with respect to all or any part of the subject matter hereof.

611. Attorneys' Fees. In any action between the parties to interpret, enforce, reform, modify, rescind or otherwise in connection with any of the terms or provisions of this Agreement, the prevailing party in the action shall be entitled, in addition to damages, injunctive relief or any other relief to which it might be entitled, reasonable costs and expenses including, without limitation, litigation costs and reasonable attorneys' fees. Costs recoverable for enforcement of any judgment shall be deemed to include reasonable attorneys' fees.

612. Administration. This Agreement shall be administered and executed by the Agency Director, or his/her designated representative, following approval of this Agreement by the Agency. The Agency shall maintain authority of this Agreement through the Agency Director (or his/her authorized representative). The Agency Director shall have the authority but not the obligation to issue interpretations, waive provisions, approve the Declaration, extend time limits, make minor modifications to prior Agency design approvals, and/or enter into amendments of this Agreement on behalf of the Agency so long as such actions do not substantially change the uses or development permitted on the Site, or add to the costs to the Agency as specified herein as agreed to by the Agency Board, and such amendments may include extensions of time specified in the Schedule of Performance. All other waivers or amendments shall require the written consent of the Agency Board.

613. Titles and Captions. Titles and captions are for convenience of reference only and do not define, describe or limit the scope or the intent of this Agreement or of any of its terms. Reference to Section numbers are to sections in this Agreement, unless expressly stated otherwise.

614. Interpretation. As used in this Agreement, masculine, feminine or neuter gender and the singular or plural number shall each be deemed to include the others where and when the context so dictates. The word "including" shall be construed as if followed by the words "without limitation." This Agreement shall be interpreted as though prepared jointly by both parties.

615. No Waiver. A waiver by either party of a breach of any of the covenants, conditions or agreements under this Agreement to be performed by the other party shall not be construed as a waiver of any succeeding breach of the same or other covenants, agreements, restrictions or conditions of this Agreement.

616. Modifications. Any alteration, change or modification of or to this Agreement, in order to become effective, shall be made in writing and in each instance signed on behalf of each party.

617. Severability. If any term, provision, condition or covenant of this Agreement or its application to any party or circumstances shall be held, to any extent, invalid or unenforceable, the remainder of this Agreement, or the application of the term, provision, condition or covenant to persons or circumstances other than those as to whom or which it is held invalid or unenforceable, shall not be affected, and shall be valid and enforceable to the fullest extent permitted by law.

618. Computation of Time. The time in which any act is to be done under this Agreement is computed by excluding the first day (such as the day escrow opens) and including the last day, unless the last day is a holiday or Saturday or Sunday, and then that day is also excluded in which case such day is the day following the excluded day(s). The term "holiday" shall mean all holidays as specified in Section 6700 and 6701 of the California Government Code. If any act is to be done by a particular time during a day, that time shall be Pacific Time.

619. Legal Advice. Each party represents and warrants to the other the following: they have carefully read this Agreement, and in signing this Agreement, they do so with full knowledge of any right which they may have; they have received independent legal advice from their respective legal counsel as to the matters set forth in this Agreement, or have knowingly chosen not to consult legal counsel as to the matters set forth in this Agreement; and, they have freely signed this Agreement without any reliance upon any agreement, promise, statement or representation by or on behalf of the other party, or their respective agents, employees or attorneys, except as specifically set forth in this Agreement, and without duress or coercion, whether economic or otherwise.

620. Time of Essence. Time is expressly made of the essence with respect to the performance by the Agency and Developer of each and every obligation and condition of this Agreement.

621. Cooperation. Each party agrees to cooperate with the other in this transaction and, in that regard, to sign any and all documents which may be reasonably necessary, helpful or appropriate to carry out the purposes and intent of this Agreement. In this regard, Developer and the Agency agree to mutually consider reasonable requests for amendments to this Agreement and/or other estoppel documents. The party making the request shall be responsible for the costs incurred by the other party, including without limitation attorneys' fees, (the "Amendment/Estoppel Costs") in connection with any amendments to this Agreement and/or estoppel documents which are requested by such party (the "Developer/Agency Request") regardless of the outcome of the Developer/Agency Request.

622. Conflicts of Interest. No member, official or employee of the Agency shall have any personal interest, direct or indirect, in this Agreement, nor shall any such member, official or employee participate in any decision relating to the Agreement which affects his/her personal interests or the interests of any corporation, partnership or association in which he is directly or indirectly interested.

623. Time for Acceptance of Agreement by the Agency. This Agreement, when executed by Developer and delivered to the Agency, must be authorized, executed and delivered by the Agency on or before thirty (30) days after signing and delivery of this Agreement by Developer or this Agreement shall be void, except to the extent that Developer shall consent in writing to a further extension of time for the authorization, execution and delivery of this Agreement.

624. Consideration of Agreement Modification. The Parties recognize that due to the changing economic conditions as it relates to hotel development, there is a possibility that the terms described herein will need to be modified based on requirements of the Franchisor, Hotel Operator and/or Construction Lender and/or other debt or equity contributors. With this in mind, the parties agree that in such event, the Parties agree that they will discuss any such requested modifications with the idea in mind of modifying or amending this Agreement, if required, with each Party acting in their sole and absolute discretion and without any commitment to the other to agree to any such requested modification or revision.

625. Recordation of Memorandum of Agreement. The Memorandum of Agreement shall be recorded concurrently with the Close of Escrow and the terms hereof shall survive Closing and run with the land for the period of time set forth herein.

[SIGNATURES ON NEXT PAGE]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the respective dates set forth below.

AGENCY:

**GARDEN GROVE AGENCY FOR
COMMUNITY DEVELOPMENT**, a public
body, corporate and politic

Dated: June 28, 2011

By: Matthew Fetal

ATTEST:

Raileen Bain
Agency Secretary

APPROVED AS TO FORM:

Thomas P. Clark, Jr.
Agency General Counsel

DEVELOPER

LAND & DESIGN INC., a California corporation

Dated: _____, 2011

By: See next page
Matthew Reid

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the respective dates set forth below.

AGENCY:

**GARDEN GROVE AGENCY FOR
COMMUNITY DEVELOPMENT**, a public
body, corporate and politic

Dated: _____, 2011

By: _____

ATTEST:

Agency Secretary

APPROVED AS TO FORM:

Thomas P. Clark, Jr.
Agency General Counsel

DEVELOPER

LAND & DESIGN, INC. a California corporation

Dated: 6/17, 2011

By: 
Matthew Reid



EXHIBIT A

SITE MAP

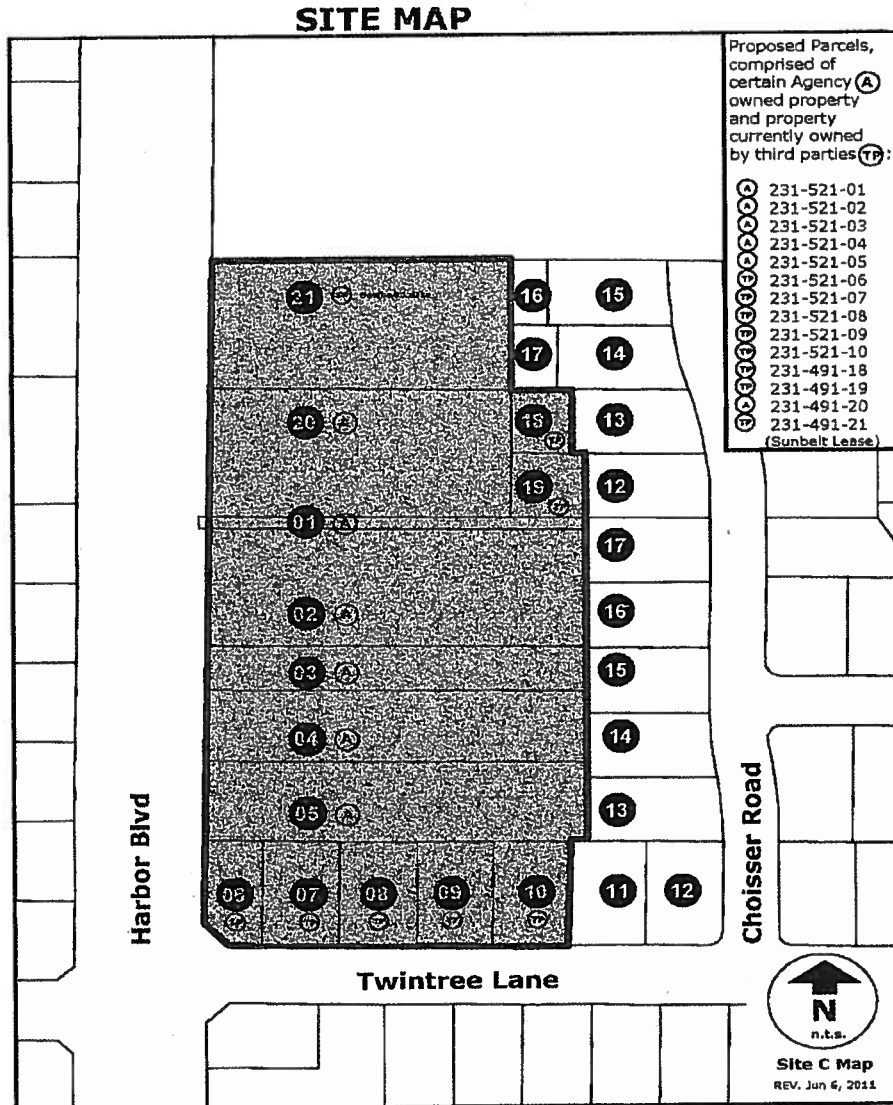


EXHIBIT A

EXHIBIT B

NEED LEGAL DESCRIPTION

EXHIBIT B

-1-

EXHIBIT C

SCOPE OF DEVELOPMENT

Unless otherwise specified herein, all capitalized terms in the Scope of Development shall have the meaning(s) set forth for the same Disposition and Development Agreement to which this Scope of Development is attached (DDA).

I. DEVELOPER IMPROVEMENTS

A. RETAIL/RESTAURANT/ENTERTAINMENT

The following shall be the sole cost and expense of the Developer:

1. The Developer shall construct on the Site the Retail/Restaurant/Entertainment Component(s) consisting of a minimum of ten thousand (10,000) square feet of gross leaseable area and required parking (subject to parking structure). Exhibit L, contained herein, shall be considered the agency pre-approved list of Retail/Restaurant and Entertainment uses. The Developer, from time to time, may submit additional lists of possible restaurants for Agency review and approval, which shall not be unreasonably withheld. Notwithstanding anything to the contrary contained in the DDA or this Exhibit C, the use of the Sumbelt Property shall be restricted to portion(s) of the Retail/Restaurant/Entertainment Component(s).

The design and architecture of the improvements for the restaurant(s) shall follow the City's General Plan, the Redevelopment Plan, the Harbor Corridor Specific Plan, and all other requirements and provisions of this Agreement, as applicable.

B. HOTEL

The following shall be the sole cost and expense of the Developer:

1. The Developer shall construct the Upper Upscale Hotel consisting a minimum of three hundred (300) rooms shall also include required parking, as well as a central lobby, full-service/specialty restaurant (with room service), cocktail bar, spa, gift shop(s), business center, fitness center, concierge service, and not less than ten thousand (10,000) square feet of meeting and business space in accordance with the Agency approved Upper Upscale Hotel list. Exhibit L, contained herein, shall be considered the pre-approved list of Upper Upscale Hotel Flags. The Developer, from time to time, may submit additional lists of possible Upper Upscale Hotel Flags/Operators for Agency review and approval, which shall not be unreasonably withheld.

Similarly, all guest rooms shall range in size from 300 gross square feet to over 400 gross square feet. All rooms will include flat screen TV's and high speed internet access, and other standard items such as alarm clocks, hair dryer, iron and ironing board. A limited number of larger suites will provide separate bedrooms, private bathrooms, and separate seating/living areas. There will also be luxury suites with king beds, flat screen televisions and wireless internet access.

The Developer shall construct the Limited Service Hotels consisting of a minimum of one hundred twenty-five (125) rooms each. The Limited Service Hotels shall also include required parking, as well as a central lobby, business center, and fitness center in accordance with the Agency approved Limited Service Hotel list. Exhibit L, contained herein, shall be considered the pre-approved list of Upper Upscale Hotel Flags. The Developer, from time to time, may submit additional lists of possible Limited Service Hotel Flags/Operators for Agency review and approval, which shall not be unreasonably withheld.

Similarly, all guest rooms range in size from 300 gross square feet to over 400 gross square feet. All rooms will include flat screen TV's and high speed internet access, and other standard items such as alarm clocks, hair dryer, iron and ironing board.

The design and architecture of the Limited Service Hotels shall follow the City's General Plan, the Redevelopment Plan, the Harbor Corridor Specific Plan and the all other requirements and provisions of this Agreement, as applicable. The architecture shall be consistent with the cost estimates for construction provided in the Developer's Pro Forma, the Basic Concept and Design Development Drawings and the Construction Plans and Drawings. Particular attention shall be paid to massing, scale, color, and materials.

In addition to the minimum standards for the Hotel(s) associated with the Pre-Approved Limited Service Flag(s)/Operator(s) and Pre-Approved Upper Upscale Flag(s)/Operator(s), (i) the standards attached hereto as Attachment No. 1 shall also apply to the Hotel(s), and (ii) notwithstanding anything to the contrary contained in the DDA or this Exhibit C, the finishes, standards and quality of (a) the Upper Upscale Hotel(s) shall equal or exceed those of the Westin Pasadena as of the date of the DDA, and (b) of the Limited Service Hotel(s) shall equal or exceed those of the Homewood Suites Garden Grove as of the date of the DDA.

C. PARKING STRUCTURE

The following shall be the sole cost and expense of the Developer subject to City assistance previously mentioned:

EXHIBIT C

1. The Developer shall construct, maintain and operate the Parking Structure Parcel as shown on the Conceptual Site Plan.

The vehicular entry points to the Parking Structure shall be located as shown on the Conceptual Site Plan.

The Parking Structure shall be designed for ease of operations and patron convenience with one-way traffic lanes, angled parking stalls, no parking on ramps, two lanes of continuous vertical traffic flow, and separated inbound/outbound lanes.

2. The Developer shall provide an architectural solution for the Parking Structure for the elevations that face the residential areas.

D. IMPROVEMENTS

The following shall be the sole cost and expense of the Developer:

1. The Developer shall construct all improvements from the back of the curb face, including sidewalks, driveways, street lights, pedestrian light standards, signs, parkway landscape (but excluding traffic or pedestrian or traffic signal poles which are the responsibility of the Agency). All such improvements shall be constructed in accordance with the Harbor Boulevard Streetscape Improvement Plan. Improvements include the east side of Harbor Boulevard from the most south boundary portion of the Site to the most north boundary portion of the Site.

E. TENTATIVE AND FINAL MAP

At Developer's direction, the Agency shall pay for, prepare and process a tentative and final parcel map for the Site.

II. AGENCY IMPROVEMENTS

The following shall be the sole cost and expense of the Agency:

1. Acquisition of the Site and relocation of all occupants of the Site in compliance with all applicable federal, state and local laws and regulations concerning displacement and relocation in accordance with Section 201.1 and 201.2, as applicable;
2. The demolition and removal of all existing structures and improvements, including foundations, and, subject to and as provided in Section 204, remediation of any Hazardous Materials on the Site, the proper disposal and mitigation of lead-based paint, asbestos and other environmental hazards pursuant to the requirements of the Department of Health Services in compliance with all applicable federal, state and local laws and regulations with respect to demolition and/or disposal and mitigation as described above; and

EXHIBIT C

3. Installation and completion of all offsite infrastructure required by the Land Use Approvals, including CEQA mitigation.

III. ARCHITECTURE AND DESIGN

A. BUILDING DESIGN

The following shall be the sole cost and expense of the Developer:

1. The Developer shall develop construction plans and design documents shall be developed in compliance with the Land Use Approvals and shall be consistent with the Conceptual Site Plan. The architecture is expected to create a unique identity with a cohesive, integrated architectural style that complements the surrounding developments. Particular attention shall be paid to massing, scale, color, and materials in order to articulate the buildings elevations. The elevations shall, to extent as possible, avoid flat or one-dimensional elevations. Architectural attention shall be given to the main entrance/lobby of the building, which shall include a porte-cochere that complements the main building.

B. BUILDING SERVICE, PROJECT TRAFFIC AND MANAGEMENT

The following shall be the sole cost and expense of the Developer:

1. The Developer shall develop a building service, project traffic and management plan. The Declaration shall include the following:
 - (a) A service plan that includes general times for deliveries, trash collection, street cleaning and the agreed upon routing for such service-vehicles. This plan shall include routing and stopping for patron drop-off and small service-vehicles including mail, overnight delivery and messengers as well as conference facility deliveries. This plan shall also include routing and marked areas for emergency services.
 - (b) A traffic plan that includes the Developer's commitment to pay for traffic control officers at the entrances to the Parking Structure during holiday peak periods and for special events that are expected to generate large volumes of traffic.
 - (c) A maintenance and management plan that includes cleaning and refuse policing, no visibility into service areas from public streets, degreasing and deodorizing (particularly for the service, trash and garbage areas), re-stripping, re-painting, re-lighting, drainage cleaning, signage, graffiti management and security.

The Project shall be consistent with Section 301.1 of the DDA.

EXHIBIT C

C. LANDSCAPING

All areas of the Site that are not used for buildings, sidewalks, driveways or other hardscape improvements shall be landscaped in accordance with a landscaping plan to be approved by the Agency. The Developer, at its sole cost and expense, shall be responsible for all these areas. Landscaping shall consist of ground cover, trees, potted plants, and fountains, pools, or other water features, if applicable. A permanent automatic water sprinkler system shall be provided in all landscaped areas as required for adequate coverage/maintenance.

D. REFUSE

Refuse areas shall be provided in accordance with the requirements of the Land Use Approvals.

E. SIGNS

The following shall be the sole cost and expense of the Developer:

1. The Developer shall develop a sign program. The Project shall have a comprehensive graphics/logos and sign program that shall govern the entire Project; all signs shall conform as to location, size, shape, illumination system, cabinet and copy face colors, letter style, shall be complementary to the overall architectural theme, and comply with the high standards of Underwriter Laboratories. The sign program to be approved by the Agency.

F. UTILITIES

The following shall be the sole cost and expense of the Developer:

The Developer shall be responsible for utility installations for the Project and hookups to public utility lines. All utility service for the Project shall be installed underground or concealed within buildings and any mechanical, electrical, fire sprinkler or plumbing equipment that may be at ground level shall be aesthetically screened except where not permitted by the Garden Grove Municipal Code.

ATTACHMENT NO. 1

HOTEL STANDARDS

Upper Upscale Hotel Prototype Summary

Cast in place concrete frame construction

Program room mix - to be determined after significant market analysis and research with specificity to the Anaheim Resort Areas market needs

Swimming pool with spa

Exterior sun deck

Upper-Upscale Hotel Workout area

Porte-cochere sized to accommodate multiple vehicles

Efficient layout with a cost effective FTE requirement

Line chute

In house food and beverage operations

Laundry operations

Upper-Upscale Hotel Executive Club Lounge

Elevators - 3 guest, 1 service; all traction with a gearless upgrade option

Public Area Features

Full designed Urban Bar & Eatery concept for the food and beverage outlets

Flexible private dining area

Outlet seating; Eatery - 82 / Bar - 37, exact seating based upon market demand

Wireless high speed internet access throughout all public and function space

Free standing front desk POD design

Movable partitions with a 54 STC rating

Separate function space arrival area

Meeting space minimum pursuant to scope of work, divisible into independent rooms, full back serviced

Pre-function space as required including exterior pre-function area

Audio/Visual system

Full designed, FF&E specified, sourced and priced

Self-service sundry/business center area adjoining the front desk

Upper-Upscale Hotel's express checkout service

Guestroom Features

The Upper-Upscale Hotel Bed in accordance with Flag specified bed

Mixture of Large, three and four-fixture Baths

Upper-Upscale Hotel designed model room

Guestroom HVAC - 2-pipe specified with a 4-pipe option and digital wall thermostats

Two, two-line phone handsets and High Speed Internet Access

Large flat panel LCD television

Pay per view movie system

In room refreshment center

In room safe

Upper-Upscale Hotel Green Program

Electronic card key locks

Full designed, FF&E specified, sourced and priced

Upper-Upscale Hotel brand standard OS&E; specified, sourced and priced

EXHIBIT D

SCHEDULE OF PERFORMANCE – CONDENSED SCHEDULE

	PERFORMANCE ITEM	DATE
1.	Agency and Developer execute DDA.	On or before June 15, 2011.
2.	Agency and Developer open Escrow.	Within thirty (30) days after Agency and Developer execute DDA.
3.	Agency acquires/has control of all Third Party Property.	On or before March 15, 2012.*
4.	Developer completes its Site Investigation pursuant to Section 204.	On or before the Due Diligence Date.
5.	Developer submits and Agency approves the identity of the Hotel Operator, Franchisor, and Franchise Agreement and Developer executes the Franchise Agreement.	On or before January 1, 2013.
6.	Developer submits completed application for PUD/Site Plan approval.	On or before June 1, 2012.
7.	City approves, conditionally approves or rejects PUD/Site Plan	On or before August 1, 2012.
8.	Agency approves or rejects cost of Agency Improvements pursuant to Section 205.1(m).	On or before January 1, 2012.
9.	Developer provides evidence of financing.	On or before March 15, 2013.
10.	Agency completes demolition, Site clearance and remediation, if applicable, pursuant to Paragraph II.1. of the Scope of Development	On or before March 15, 2013.
11.	Developer completes Construction Drawings	On or before January 1, 2013.

* If the Agency does not acquire all of the Third Party Property by such date, then each subsequent date set forth in this Schedule of Performance will be extended on a day-for-day basis for each day after March 15, 2012 through and including the date upon which Agency acquires all of the Third Party Property.

EXHIBIT D

-1-

	PERFORMANCE ITEM	DATE
12.	Developer and Agency Close Escrow and Developer commences grading.	On or before June 15, 2013. ¹
13.	Construction Commencement Date.	On or before June 15, 2013.
14.	Off Site Improvements Completed by Agency	Concurrently with completion of the Developer Improvements.
15.	Developer Completes Construction of the Developer Improvements	Within twenty six (26) month after Close of Escrow.

¹ Although the outside date for the Closing of June 15, 2013, may not be extended for the events described in Section 602, the Closing may be extended until December 15, 2012 provided that, as of December 15, 2013, the Franchise Agreement for the Upper Upscale Hotel is still operative and neither the Developer or the Franchisor is in breach or default thereunder. The Closing may also be extended until June 15, 2014 if on December 15, 2013, the Franchise Agreement for the Upper Upscale Hotel is still operative and neither the Developer or Franchisor are in breach or default thereunder.

EXHIBIT E

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT (the "Assignment") is hereby made as of _____, 20___, by and between _____, a _____ ("_____"), and _____, a _____ ("Assignee").

RECITALS

A. Assignor and the Garden Grove Agency for Community Development (the "Agency") have entered a Disposition and Development Agreement dated _____, 2011 (the "DDA"). Pursuant to the DDA, the Agency agreed to convey [or conveyed] to the Assignor a parcel of real property referred to in the DDA as the "Site," and the Assignor agreed to construct [among other things] _____ thereon.

B. Assignor and Assignee desire to provide by this Assignment for Assignor to assign to Assignee all of its rights and obligations under the DDA [with respect to the portion of the Site described on Exhibit "A" hereto] and for Assignee to accept such assignment and assume all rights and obligations thereunder [with respect to such portion of the Site].

C. Pursuant to Section 103 of the DDA, Agency approval of a Transfer of Assignor's interest in the DDA is required in connection with the construction of _____.

D. The parties also desire for Agency to consent to such assignment and assumption, and acknowledge that such assignment and assumption is permitted pursuant to Section 103 of the DDA.

NOW, THEREFORE, Assignor and Assignee hereby agree as follows:

1. **Assignment and Assumption.** Assignor hereby assigns to Assignee all of its right, title and interest in and to the DDA [with respect to the portion of the Site described on Exhibit "A" hereto], and Assignee hereby accepts such assignment and assumes performance of all terms, covenants and conditions on the part of Assignor to be performed, occurring or arising under the DDA [with respect to such portion of the Site], from and after the date hereof with respect to _____. From and after the date hereof, Assignor shall be released from and have no further obligations under the DDA [with respect to such portion of the Site], excluding actual claims of Default which Agency made against Assignor in writing prior to the date hereof, the responsibility for which claims have not been assumed by Assignee.

2. **Successors and Assigns.** This Assignment shall be binding upon and shall inure to the benefit of Assignor and Assignee, their respective successors and assigns and Agency as third party beneficiary hereof.

EXHIBIT E

-1-

3. **Governing Law.** This Assignment has been entered into, is to be performed entirely within, and shall be governed by and construed in accordance with the laws of the State of California.

4. **Further Assurances.** Each party hereto covenants and agrees to perform all acts and things, and to prepare, execute, and deliver such written agreements, documents, and instruments as may be reasonably necessary to carry out the terms and provisions of this Assignment.

NOW, THEREFORE, the parties hereto have executed this Assignment as of the date set forth above.

ASSIGNOR:

_____,
a _____

By: _____

Its: _____

By: _____

Its: _____

ASSIGNEE:

_____, a

By: _____

Its: _____

CONSENT OF AGENCY TO ASSIGNMENT

Agency hereby acknowledges and consents to the above assignment, and releases Assignor from any further liability under the DDA, except in Assignor's capacity as a member of Assignee.

**GARDEN GROVE AGENCY FOR
COMMUNITY DEVELOPMENT,**
a public body, corporate and politic

By: _____

ATTEST:

Agency Secretary

STRADLING YOCCA CARLSON & RAUTH

Agency Special Counsel

EXHIBIT F

GRANT DEED

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO
AND SEND TAX STATEMENTS TO:

Garden Grove Agency for
Community Development
11222 Acacia Parkway
Garden Grove, California 92840
Attention: Agency Director

This document is exempt from the payment of a recording fee pursuant to Government Code Section 27383.

GRANT DEED

For valuable consideration, receipt of which is hereby acknowledged,

A. The Redevelopment Plan for the Garden Grove Community Project was approved and adopted by the City Council of the City of Garden Grove by Ordinance No. 1339, as amended by Ordinance Nos. 1388, 1476, 1548, 1576, 1642, 1699, 1760, 2035 and 2232; said ordinances and the Redevelopment Plan as so approved and amended (the "Redevelopment Plan") are incorporated herein by reference.

B. The Grantee shall refrain from restricting the rental, sale or lease of the applicable portion of the Site or the Developer Improvements on the basis of race, color, creed, religion, sex, marital status, national origin or ancestry of any person. All such deeds, leases or contracts shall contain or be subject to substantially the following nondiscrimination or nonsegregation clauses:

1. In deeds: "The grantee herein covenants by and for himself or herself, his or her heirs, executors, administrators, and assigns, and all persons claiming under or through them, that there shall be no discrimination against or segregation of, any person or group of persons on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code, as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, in the sale, lease, sublease, transfer, use, occupancy, tenure, or enjoyment of the premises herein conveyed, nor shall the grantee or any person claiming under or through him or her, establish or permit any practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants, sublessees, or vendees in the premises herein conveyed. The foregoing covenants shall run with the land."

EXHIBIT F

-1-

2. In leases: "The lessee herein covenants by and for himself or herself, his or her heirs, executors, administrators, and assigns, and all persons claiming under or through him or her, and this lease is made and accepted upon and subject to the following conditions:

"That there shall be no discrimination against or segregation of any person or group of persons, on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code, as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, in the leasing, subleasing, transferring, use, occupancy, tenure, or enjoyment of the premises herein leased nor shall the lessee himself or herself, or any person claiming under or through him or her, establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use, or occupancy, of tenants, lessees, sublessees, subtenants, or vendees in the premises herein leased."

3. In contracts: "There shall be no discrimination against or segregation of, any person or group of persons on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code, as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, in the sale, lease, sublease, transfer, use, occupancy, tenure, or enjoyment of the premises which are the subject of this Agreement, nor shall the grantee or any person claiming under or through him or her, establish or permit any practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants, sublessees, or vendees in the premises herein conveyed. The foregoing covenants shall run with the land."

The covenants against discrimination, set forth in this Section B shall continue in effect in perpetuity.

C. No violation or breach of the covenants, conditions, restrictions, provisions or limitations contained in this Grant Deed shall defeat or render invalid or in any way impair the lien or charge of any mortgage or deed of trust or security interest permitted by this Grant Deed or the DDA; provided, however, that any subsequent owner of the Site shall be bound by such remaining covenants, conditions, restrictions, limitations and provisions, whether such owner's title was acquired by foreclosure, deed in lieu of foreclosure, trustee's sale or otherwise.

D. All of the terms, covenants and conditions of this Grant Deed shall be binding upon the Grantee and its successors and assigns. Whenever the term "Grantee" is used in this Grant Deed, such term shall include any other successors and assigns as herein provided.

E. All covenants without regard to technical classification or designation shall be binding for the benefit of the Grantor, the City of Garden Grove, and their respective successors and assigns. Such covenants shall be covenants running with the land in favor of the Grantor, the City of Garden Grove, and their respective successors and assigns for the entire period during which such covenants shall be in force and effect, without regard to whether the Grantor is or remains an owner of any land or interest therein to which such covenants relate. The

EXHIBIT F

-2-

Grantor, in the event of any breach of any such covenants, shall have the right to exercise all the rights and remedies and to maintain any actions at law or suits in equity or other proper proceedings to enforce the curing of such breach.

IN WITNESS WHEREOF, the Grantor and Grantee have caused this instrument to be executed on their behalf by their respective officers hereunto duly authorized, this ____ day of _____, 2011.

GRANTOR:

**GARDEN GROVE AGENCY FOR
COMMUNITY DEVELOPMENT**, a public
body, corporate and politic

Dated: _____, 2011

By: _____

ATTEST:

Agency Secretary

APPROVED AS TO FORM:

Thomas P. Clark, Jr.
Agency General Counsel

The undersigned Grantee accepts title subject to the covenants hereinabove set forth.

GRANTEE:

a _____

Dated: _____, 2011

By: _____

Its: _____

EXHIBIT G

RELEASE OF CONSTRUCTION COVENANTS

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

_____, California _____
Attention: _____

This document is exempt from the payment of a recording fee pursuant to Government Code Section 27383.

RELEASE OF CONSTRUCTION COVENANTS

This RELEASE OF CONSTRUCTION COVENANTS (the "Release") is made by the GARDEN GROVE AGENCY FOR COMMUNITY DEVELOPMENT, a public body, corporate and politic (the "Agency"), in favor of _____, a _____ (the "Developer"), as of the date set forth below.

RECITALS

A. The Agency and the Developer have entered into that certain Disposition and Development Agreement dated _____ (the "DDA") concerning the redevelopment of certain real property situated in the City of Garden Grove, California as more fully described in Exhibit "A" attached hereto and made a part hereof.

B. As referenced in Section 310 of the DDA, the Agency is required to furnish the Developer or its successors with a Release of Construction Covenants (as defined in Section 100 of the DDA) upon completion of construction of the Developer Improvements (as defined in Section 100 of the DDA) or a portion thereof, which Release is required to be in such form as to permit it to be recorded in the Recorder's office of Orange County. This Release is conclusive determination of satisfactory completion of the construction and development required by the DDA of the Developer Improvements or such portion thereof as described in Exhibit "A" attached hereto and incorporated herein by reference.

C. The Agency has conclusively determined that such construction and development has been satisfactorily completed.

NOW, THEREFORE, the Agency hereby certifies as follows:

1. The Developer Improvements or portion thereof to be constructed by the Developer has been fully and satisfactorily completed in conformance with the DDA and is free of any claims and/or liens. Any operating requirements and all use, maintenance, security or nondiscrimination covenants contained in the DDA and other documents executed and recorded pursuant to the DDA shall remain in effect and enforceable according to their terms.

EXHIBIT G

2. Nothing contained in this instrument shall modify in any other way any other provisions of the DDA.

IN WITNESS WHEREOF, the Agency has executed this Release this _____ day of _____, 20____.

AGENCY:

**GARDEN GROVE AGENCY FOR
COMMUNITY DEVELOPMENT**, a public
body, corporate and politic

Dated: _____, 2011

By: _____
Agency Director

ATTEST:

Agency Secretary

APPROVED AS TO FORM:

Agency Special Counsel

DEVELOPER

a _____

Dated: _____, 2011

By: _____
Its: _____

EXHIBIT H

RIGHT OF ENTRY AGREEMENT

This RIGHT OF ENTRY AGREEMENT (the "Agreement") is entered into _____, 2011, by and between _____, a _____ ("GRANTEE") and the GARDEN GROVE AGENCY FOR COMMUNITY DEVELOPMENT, a public body, corporate and politic ("GRANTOR").

RECITALS

A. GRANTOR, as "Agency," and GRANTEE, as "Developer," entered into that certain Disposition and Development Agreement dated _____ (the "DDA"), pursuant to which the GRANTOR agreed, subject to the fulfillment of the Agency's Conditions Precedent to convey the Site to the GRANTEE and GRANTEE agreed, subject to Developer's Conditions Precedent to accept Conveyance of the Site and construct the Developer Improvements thereon. All capitalized terms not defined herein shall have the meaning set forth in the DDA, unless the context dictates otherwise.

B. GRANTOR currently owns the Agency Parcels and is in the process of acquiring the Third Party Property. If and to the extent the GRANTOR acquires the Third Party Property or is granted the right of entry with respect to the Third Party Property such Third Party Property shall be deemed to be part of the Agency Parcels hereunder.

RIGHT OF ENTRY AGREEMENT

1. Grant of Right of Entry. The GRANTOR hereby grants the GRANTEE, its employees, consultants, contractors, subcontractors, agents, tenants, purchasers, and designees, permission to enter upon the Agency Parcels ("Right of Entry") for the purpose of performing or causing to be performed environmental, soils, and/or topographical tests and surveys ("Investigation") and for the purpose of clearing, demolishing and rough grading ("Grading").

2. Termination. This Agreement shall terminate upon the earlier to occur of (i) _____, 20____, (ii) the Closing or (iii) termination of the DDA, unless otherwise extended by mutual agreement of the parties.

3. Assumption of Risk. GRANTEE enters the Agency Parcels and performs or causes to be performed the Investigation, at its own risk and subject to whatever hazards or conditions may exist on the Agency Parcels.

4. Condition of Agency Parcels Upon Termination of DDA Prior to Conveyance. If the DDA and this Agreement are terminated prior to Conveyance (a) in the case of Investigation, GRANTEE shall repair or replace any landscaping, structures, fences, driveways, or other improvements that are removed, damaged, or destroyed by Grantee's employees, contractors, subcontractors, agents and designees, and (b) in the case of Grading of the Agency Parcels, the Developer shall provide a rough graded level site.

5. Indemnification and hold harmless. GRANTEE shall indemnify, defend and hold harmless the GRANTOR and City, their officers, directors, employees, contractors, subcontractors, agents, and volunteers ("Indemnitees") from any and all claims, suits or actions of every name, kind and description, brought forth on account of injuries to or the death of any person or damage to property arising from or connected with the willful misconduct, negligent acts, errors or omissions, ultra-hazardous activities, activities giving rise to strict liability, or defects in design by the GRANTEE or any person directly or indirectly employed by or acting as agent for GRANTEE in the performance of this Right of Entry, except that such indemnity shall not apply to the extent such matters are caused by the negligence or willful misconduct of the GRANTOR, its officers, agents, employees or volunteers.

It is understood that the duty of GRANTEE to indemnify and hold harmless includes the duty to defend as set forth in Section 2778 of the California Civil Code.

Acceptance of insurance certificates and endorsements required under this Right of Entry does not relieve GRANTEE from liability under this indemnification and hold harmless clause. This indemnification and hold harmless clause shall apply whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

6. Insurance. During the term of this Right of Entry, GRANTEE and its contractors, subcontractors and agents shall fully comply with the terms of the law of the State of California concerning worker's compensation and shall provide insurance in accordance with the DDA.

7. Recording. Neither GRANTOR nor GRANTEE shall record this Right of Entry.

8. Attorney's Fees. If any legal action or proceeding arising out of or relating to this Right of Entry is brought by either party to this Right of Entry, the prevailing party shall be entitled to receive from the other party, in addition to any other relief that may be granted, the reasonable attorneys' fees, costs, and expenses incurred in the action or proceeding by the prevailing party.

9. Notices. All notices required or permitted under the terms of this DDA shall be in writing and sent to:

To Grantor: Garden Grove Agency for Community Development
11222 Acacia Parkway
Garden Grove, California 92840
Attention: Agency Director

with a copy to: Stradling, Yocca, Carlson & Rauth
660 Newport Center Drive, Suite 1600
Newport Beach, California 92660
Attention: Thomas P. Clark, Jr.

To Grantee: Matthew Reid
Land & Design, Inc.
8130 La Mesa Boulevard #808
La Mesa, California 91942

EXHIBIT H

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With a copy to: Allen Matkins Leck Gamble Mallory & Natsis LLP
501 West Broadway, 15th Floor
San Diego, California 92101
Attention: Tom Crosbie

10. Time is of the Essence; Entire Agreement. Time is of the essence of the terms and provisions of this Right of Entry. This Right of Entry constitutes the entire agreement between GRANTEE and GRANTOR with respect to the matters contained herein, and no alteration, amendment or any part thereof shall be affective unless in writing signed by parties sought to be charged or bound thereby.

11. Assignment. This Agreement shall be assignable as security to Grantee's Holder for the purposes and with the limitations set forth herein.

APPROVED BY: GRANTEE

LAND & DESIGN, INC.,
a California corporation

Dated: _____, 2011 By: _____
Its: _____

GRANTOR:

**GARDEN GROVE AGENCY FOR
COMMUNITY DEVELOPMENT**, a public
body, corporate and politic

Dated: _____, 2011 By: _____
Its: _____

EXHIBIT I

PREVAILING WAGE AND PUBLIC WORKS REQUIREMENTS

I. Developer's Requirements:

(1) Obtain the prevailing wage rate from the Director of Industrial Relations in accordance with Labor Code Sections 1771 and 1773.

(2) Specify the appropriate prevailing wage rates, in accordance with Labor Code Sections 1773.2 and 1777.5.

(A) The posting requirement is applicable for each job site.

EXCEPTION: If more than one worksite exists on any project, then the applicable rates may be posted at a single location which is readily available to all workers.

(B) If a wage rate for a craft, classification or type of worker is not published in the Director's general prevailing wage determinations, a request for a special determination should be made by the awarding body to Chief, Division of Labor Statistics and Research, P.O. Box 420603, San Francisco, CA 94142, at least 45 days prior to the project bid advertisement date.

(3) Notify the Division of Apprenticeship Standards, Department of Industrial Relations. See Labor Code Section 1773.3.

(4) Inform prime contractors, to the extent feasible, of relevant public work requirements:

NOTE: Requirement information may be disseminated at a pre-acceptance of bid conference or in a call for bids or at an award of bid conference.

The public works requirements are:

(A) the appropriate number of apprentices are on the job site, as set forth in Labor Code Section 1777.5.

(B) workers' compensation coverage, as set forth in Labor Code Sections 1860 and 1861.

(C) keep accurate records of the work performed on public works projects, as set forth in Labor Code Section 1812.

(D) inspection of payroll records pursuant to Labor Code Section 1776, and as set forth in Section 16400 (e) of Title 8 of the California Code of Regulations.

(E) and other requirements imposed by law.

(5) Withhold monies. See Labor Code Section 1727.

EXHIBIT I

(6) Ensure that public works projects are not split or separated into smaller work orders or projects for the purpose of evading the applicable provisions of Labor Code Section 1771.

(7) Deny the right to bid on public work contracts to contractors or subcontractors who have been debarred from bidding on public works contracts, as set forth in Labor Code Section 1777.7.

(8) Not permit workers on public works to work more than eight hours a day or 40 hours in any one calendar week, unless compensated at not less than time and a half as set forth in Labor Code Section 1815.

EXCEPTION: If the prevailing wage determination requires a higher rate of pay for overtime work than is required under Labor Code Section 1815, then that higher overtime rate must be paid, as specified in subsection 16200(a)(3)(F) of Title 8 of the California Code of Regulations.

(9) Not take or receive any portion of the workers' wages or accept a fee in connection with a public works project, as set forth in Labor Code Sections 1778 and 1779.

(10) Comply with those requirements as specified in Labor Code Sections 1776(g), 1777.5, 1810, 1813, and 1860.

II. Contractor and Subcontractor Requirements.

The contractor and subcontractors shall:

(1) Pay not less than the prevailing wage to all workers, as defined in Section 16000 of Title 8 of the California Code of Regulations, and as set forth in Labor Code Sections 1771 and 1774;

(2) Comply with the provisions of Labor Code Sections 1773.5, 1775, and 1777.5 regarding public works jobsites;

(3) Provide workers' compensation coverage as set forth in Labor Code Section 1861;

(4) Comply with Labor Code Sections 1778 and 1779 regarding receiving a portion of wages or acceptance of a fee;

(5) Maintain and make available for inspection payroll records, as set forth in Labor Code Section 1776;

(6) Pay workers overtime pay, as set forth in Labor Code Section 1815 or as provided in the collective bargaining agreement adopted by the Director of Industrial Relations as set forth in Section 16200 (a) (3) of Title 8 of the California Code of Regulations;

(7) Comply with Section 16101 of Title 8 of the California Code of Regulations regarding discrimination;

(8) Be subject to provisions of Labor Code Section 1777.7 which specifies the penalties imposed on a contractor who willfully fails to comply with provisions of Section 1777.5;

(9) Comply with those requirements as specified in Labor Code Sections 1810 and 1813; and

(10) Comply with other requirements imposed by law.

EXHIBIT I

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EXHIBIT J

CONCEPTUAL SITE PLAN

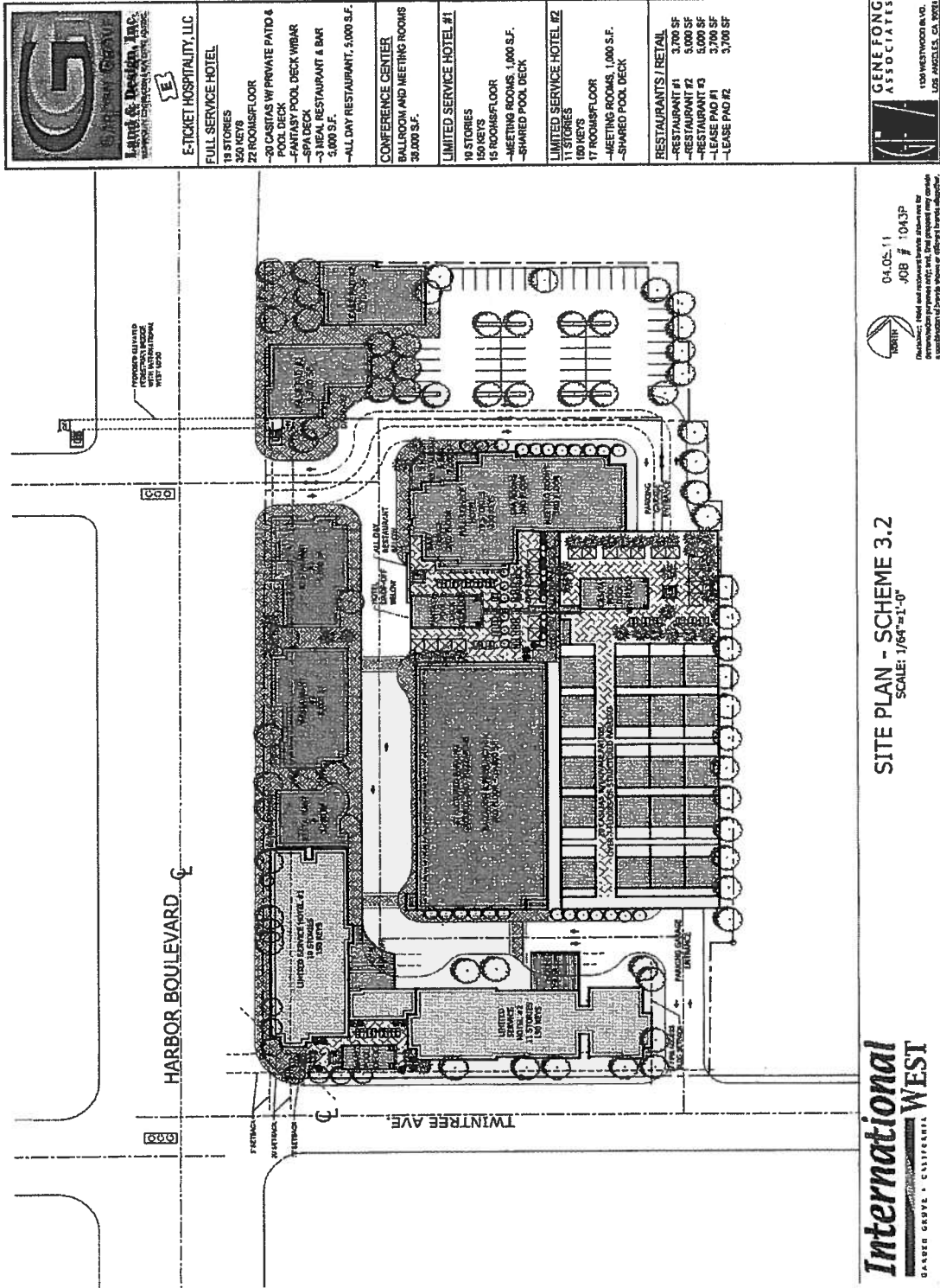


EXHIBIT J

-1-

EXHIBIT K

MEMORANDUM OF AGREEMENT

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO
AND SEND TAX STATEMENTS TO:

Garden Grove Agency for
Community Development
11222 Acacia Parkway
Garden Grove, California 92840
Attention: Agency Director

This document is exempt from the payment of a recording fee pursuant to Government Code Section 27383.

MEMORANDUM OF AGREEMENT

This **MEMORANDUM OF AGREEMENT** (the "Agreement") is entered into as of _____, 2011 by and between the **GARDEN GROVE AGENCY FOR COMMUNITY DEVELOPMENT**, a public body, corporate and politic (the "Agency"), and **LAND & DESIGN, INC.**, a California corporation (hereinafter referred to as "Developer").

RECITALS

1. Recordation of Memorandum of Agreement. This Memorandum of Agreement evidences that certain Disposition and Development Agreement between the Agency and the Developer dated _____ ("DDA"). Capitalized terms not defined herein shall have the meaning set forth in the DDA. When recorded at the Closing the DDA is a burden against Developer's fee simple interest in the Site which Site is more particularly described in Attachment No. 1 attached hereto and incorporated herein by reference. The DDA provides, among other things, and subject to the fulfillment of certain Condition Precedent, for a conveyance of the Site to the Developer and for the development and operation by Developer thereon of a Hotel and Retail/Restaurant/Entertainment Component. The Covenants shall run with the land and be binding upon the heirs, successors and assigns of Developer.

[SIGNATURES FOLLOW ON NEXT PAGE]

EXHIBIT K

-1-

IN WITNESS WHEREOF, the undersigned have executed this Memorandum of Agreement as of the ____ day of _____, 2011.

AGENCY:

**GARDEN GROVE AGENCY FOR
COMMUNITY DEVELOPMENT**, a public
body, corporate and politic

Dated: _____, 2011

By: _____
Agency Director

ATTEST:

Agency Secretary

APPROVED AS TO FORM:

Stradling Yocca Carlson & Rauth
Agency General Counsel

DEVELOPER

LAND & DESIGN, INC., a California corporation

Dated: _____, 2011

By: _____
Its: _____

STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

On _____ before me, _____, Notary
Public, personally appeared _____,
who proved to me on the basis of satisfactory evidence to be the person(s) whose names(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same
in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument
the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal

SIGNATURE OF NOTARY PUBLIC

ATTACHMENT NO. 1 TO EXHIBIT K

LEGAL DESCRIPTION

ATTACHMENT NO. 1 TO EXHIBIT K

-1-

EXHIBIT L

**PRE-APPROVED HOTEL FRANCHISES AND
RESTAURANT TENANT(S)/OPERATOR(S)**

Pre-Approved Limited Service Hotels

Aloft (Starwood)
Cambria Suites (Choice Hotels)
Country Inn and Suites (Carlson)
Courtyard (Marriott)
Element (Starwood)
Fairfield Inn and Suites (Marriott)
Four Points by Sheraton (Starwood)
Hotel Indigo (IHG)
Hyatt Place (Hyatt)
Nickelodeon Hotel
Springhill Suites (Marriott)
Summerfield Suites (Hyatt)
Towne Place Suites (Marriott)
Wingate (Wyndham)

Pre Approved Upper Upscale Hotels

Autograph Collection (Marriott)
Destination Hotels and Resorts
Fairmont
Four Seasons
Inter-Continental Hotel
Joie de Vivre Hotels
Jumeira Hotels
JW Marriott
Kessler Collection
Kimpton Hotel
Le Méridien
Loews
Luxury Collection (Starwood)
Marriott Hotels
MGM Hotel
Nickelodeon Hotel
Omni
Pan Pacific Hotel
Peabody Hotel
Planet Hollywood Hotel
Radisson Blu
Renaissance
Rosen Hotel
Sol Melia Hotels
Sonesta
Taj Hotel(s)
W Hotels

EXHIBIT L

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Westin
Wyndham Collection/Resort

Pre-Approved List of Full-Service Restaurants:

Applebees
Bahama Breeze
Bahama Breeze
BJ's Restaurant and Brewery
Black Angus
Bonefish Grill
Buffalo Wild Wings Grill and Bar
Burgerville USA
California Pizza Kitchen
Capital Grill
Carrabba's Italian Grill
Cheeseburger in Paradise
Chevy's
Chili's Grill and Bar
Chuy's Mesquite Broiler
Claim Jumper
Daily Grill
Daily Grill/The Grill
Elephant Bar
Emerill's
Famous Dave's
Farrell's
Fleming's Steakhouse
Gladstones
Golden Corral
Grand Luxe Cafe
Granite City Food and Brewery
Hard Rock Café
Houston's
Il Fornaio Cucina Italiano
Islands
Johnny Carino's
Johnny Rockets
King's Fish House
Landry's Seafood
Landry's Aquarium Restaurant
Logan's Roadhouse
Lone Star Steakhouse
LongHorn Steakhouse
Lucilles BBQ
Maggiano's/Corner Bakery Café
Maloney's
Margaritaville
Marie Callendar's/Babe's BBQ
Moe's Southwest Grill
Nascar Café

EXHIBIT L

-2-

Nobu
Old Chicago
Olive Garden
On the Border
Panda Inn
Papa Bello
Pat and Oscars
Pizzeria Uno
Prego
Qdoba Mexican Grill
RA Sushi Bar
Roadhouse Grill
RockSugar
Romano's Macaroni Grill
Ruby Tuesday's
Ruby's Diner
Season's 52
Sevilla
Smith & Wollensky
Smokey Bones BBQ
Spaghetti Factory
Texas Roadhouse
TGI Fridays
T-Rex
Uno Chicago
Wolfgang Pucks
Yard House
Z Tejas Grill

Pre-Approved List of Quick-Service Restaurants/Retail:

Crepe Café
Earl of Sandwich
Five Guys Hamburgers
Jerry Woodfired Hot Dogs
Panda Express
Panera Bread
Pink's Famous Hot Dogs
Portillos
Quiznos
Subway
The Hat
Togo's
Tommy's World Famous Hamburgers

EXHIBIT L

-3-

Pre-Approved List of Specialty Restaurants:

California Welcome Center (official State of California Retail Storefront)
Coffee Bean
Coffee Bean and Tea Leaf
Dunkin Donuts
Ghirardelli Soda Fountain & Chocolate Shop
Haagen Dazs
Jamba Juice
Lego Store
Peet's Coffee
Pink Berry
Sea World Store
Southern Maid Donut Shops
Starbucks
Universal Studios Store
Wetzels Pretzels
Yogurt Land

Pre-Approved List of Entertainment Uses

B.B. King's Blues Cafe
Fox Sports Grill
House of Blues
Howl at the Moon
Improv
Jillians
Landry's Aquarium
Laugh Out Loud Comedy
Madame Tussauds
NBA Café/City
Ripley's Aquarium
Ripley's Believe It or Not (or similar Ripley's Entertainment Venue)
Sea Life Centre
Warren and Annabelle's Magic Show or affiliate
Wonderworks

EXHIBIT M

**COVENANT CONSIDERATION
COMPUTATION EXAMPLE**

ANNUAL UPPER UPSCALE HOTEL COVENANT CONSIDERATION =
58% TOT + 50% (REMAINING REVENUES - 14.28% OF AGENCY IMPROVEMENT COST BUT NOT LESS THAN ZERO (0)).

TOTAL COVENANT CONSIDERATION COMPUTATION EXAMPLE
ASSUME THE FOLLOWING HYPOTHETICAL ASSUMPTION WITH REGARD TO THE UPPER UPSCALE HOTEL:

ADR	\$180
Number of Rooms	370
Occupancy Rate	70%
Total Agency Improvement Costs	\$15,800,000
Total Development Value	\$81,000,000
Total Annual Sales Tax Revenues	\$7,530,000
14.28% of Agency Improvement Costs	\$2,257,143

Year	Total Transient Occupancy Tax Revenues	58% Transient Occupancy Tax Revenues Per Section 409 (a)	Net Tax Increment Revenues (70%)	Total Sales Tax Revenues	Total (42% of Transient Occupancy Tax Revenues + Net Tax Increment Revenues + Sales Tax Revenues)	Amount Applied to Agency Improvement Costs	Remainder of Total Revenues	50% of Remaining Revenues
1	\$2,212,119	\$1,283,029	\$567,000	\$75,300	\$1,571,390	\$1,571,390	(\$685,753)	\$0
2	\$2,276,483	\$1,321,520	\$578,340	\$78,808	\$1,612,109	\$1,612,109	(\$845,034)	\$0
3	\$2,346,837	\$1,361,105	\$589,907	\$79,342	\$1,653,920	\$1,653,920	(\$609,223)	\$0
4	\$2,417,242	\$1,402,000	\$601,705	\$79,809	\$1,698,656	\$1,698,656	(\$509,207)	\$0
5	\$2,489,759	\$1,444,080	\$613,739	\$81,607	\$1,740,845	\$1,740,845	(\$516,198)	\$0
6	\$2,564,482	\$1,487,382	\$626,014	\$83,137	\$1,788,221	\$1,788,221	(\$470,922)	\$0
7	\$2,641,388	\$1,532,004	\$638,534	\$84,800	\$1,832,716	\$1,832,716	(\$424,427)	\$0
8	\$2,720,827	\$1,577,964	\$651,305	\$86,498	\$1,880,484	\$1,880,484	\$0	\$0
9	\$2,802,246	\$1,625,303	\$664,331	\$88,226	\$1,929,500	\$1,929,500	\$0	\$0
10	\$2,886,314	\$1,674,062	\$677,617	\$89,980	\$1,979,860	\$95,860	\$1,883,980	\$941,990
11	\$2,972,903	\$1,724,284	\$691,170	\$91,780	\$2,031,579	\$0	\$2,031,579	\$1,015,780
12	\$3,062,060	\$1,776,012	\$704,993	\$93,625	\$2,084,697	\$0	\$2,084,697	\$1,042,349
13	\$3,153,953	\$1,829,293	\$719,093	\$95,499	\$2,139,262	\$0	\$2,139,262	\$0
14	\$3,248,571	\$1,884,171	\$733,475	\$97,409	\$2,195,283	\$0	\$2,195,283	\$0
15	\$3,346,028	\$1,940,697	\$748,144	\$99,357	\$2,252,833	\$0	\$2,252,833	\$0
16	\$3,446,409	\$1,998,917	\$763,107	\$101,344	\$2,311,843	\$0	\$2,311,843	\$0
17	\$3,549,802	\$2,058,895	\$778,369	\$103,371	\$2,372,657	\$0	\$2,372,657	\$0
18	\$3,656,256	\$2,120,651	\$793,937	\$105,438	\$2,435,019	\$0	\$2,435,019	\$0
19	\$3,766,985	\$2,184,271	\$809,816	\$107,547	\$2,499,078	\$0	\$2,499,078	\$0
-	\$3,878,984	\$2,249,799	\$826,012	\$109,696	\$2,564,875	\$0	\$1,629,185	\$0

ANNUAL LIMITED SERVICE HOTEL(S) COVENANT CONSIDERATION =
 50% (NET TAX INCREMENT REVENUES + SALES TAX REVENUES +
 TRANSIENT OCCUPANCY TAX REVENUES).

TOTAL COVENANT CONSIDERATION COMPUTATION EXAMPLE
 ASSUME THE FOLLOWING HYPOTHETICAL ASSUMPTION WITH REGARD TO THE LIMITED SERVICE HOTEL(S):

ADR	\$120
Number of Rooms	300
Occupancy Rate	70%
Total Development Value	\$50,000,000
Total Annual Sales Tax Revenues	\$0

Year	Total Transient Occupancy Tax Revenues	Net Tax Increment Revenues	Total (Transient Occupancy Tax Revenues + Net Tax Increment Revenues + Sales Tax Revenues)	50% of Total Revenues Per Section 410
1	\$1,195,740	\$350,000	\$1,545,740	\$772,870
2	\$1,231,612	\$357,000	\$1,588,612	\$794,308
3	\$1,268,581	\$364,140	\$1,632,701	\$816,350
4	\$1,306,617	\$371,423	\$1,678,040	\$839,020
5	\$1,345,816	\$378,851	\$1,724,667	\$862,334
6	\$1,386,180	\$386,428	\$1,772,619	\$886,309
7	\$1,427,776	\$394,157	\$1,821,933	\$910,968
8	\$1,470,609	\$402,040	\$1,872,649	\$936,325
9	\$1,514,728	\$410,081	\$1,924,809	\$962,404
10	\$1,560,169	\$418,282	\$1,978,452	\$989,228
11	\$1,606,976	\$426,648	\$2,033,623	\$0
12	\$1,655,184	\$435,181	\$2,090,365	\$0
13	\$1,704,839	\$443,885	\$2,148,724	\$0
14	\$1,765,985	\$452,762	\$2,208,747	\$0
15	\$1,808,664	\$461,818	\$2,270,482	\$0
16	\$1,862,924	\$471,054	\$2,333,978	\$0
17	\$1,918,812	\$480,475	\$2,399,287	\$0
18	\$1,976,376	\$490,084	\$2,468,461	\$0
19	\$2,035,667	\$499,886	\$2,535,553	\$0
-	\$2,096,737	\$509,884	\$2,606,621	\$0

EXHIBIT M

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GARDEN GROVE CONSENTING TO THE APPROVAL BY THE GARDEN GROVE AGENCY FOR COMMUNITY DEVELOPMENT OF A DISPOSITION AND DEVELOPMENT AGREEMENT BY AND BETWEEN THE AGENCY AND LAND & DESIGN INC.

WHEREAS, the Garden Grove Agency for Community Development ("Agency") entered into that certain Disposition and Development Agreement with Land & Design Inc. ("Developer"), a corporation duly organized under the laws of the State of California, dated as of June 14, 2011, ("DDA"), a copy of which is on file with the Agency, pursuant to which the Developer is to acquire and develop certain property identified therein as the "Site"; and

WHEREAS, the Agency has duly considered all terms and conditions of the proposed DDA and believes that the DDA is in the best interest of the Agency and the City and the health, safety, and welfare of its residents, and in accord with the public purposes and provisions of applicable State and local laws requirements; and

WHEREAS, the Developer has submitted to the Agency and the City Council of the City of Garden Grove ("City Council") copies of the DDA substantially in the form submitted herewith; and

WHEREAS, all actions required by all applicable law with respect to the proposed DDA have been taken in an appropriate and timely manner; and

WHEREAS, the Agency and the City Council have duly considered all the terms and conditions of the proposed DDA and believes that the redevelopment of the Site pursuant thereto is in the best interests of the City of Garden Grove and the health, safety, and welfare of its residents, and in accord with the public purposes and provisions of applicable state and local laws and requirements; and

WHEREAS, pursuant to the California Environmental Quality Act, California Public Resources Code Section 21100 *et seq.* ("CEQA") and CEQA's Implementing Guidelines, California Code of Regulations, Title 14, Section 15000 *et seq.*, the Agency prepared an Initial Study and determined that the project qualifies for a Negative Declaration because the project will not have a significant effect on the environment; and

WHEREAS, the Initial Study and Negative Declaration were prepared and circulated in accordance with CEQA and CEQA's implementing guidelines and the Negative Declaration was adopted by the Agency in accordance therewith.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GARDEN GROVE DOES RESOLVE AS FOLLOWS:

Section 1. The City Council finds and determines that, based upon substantial evidence provided in the record before it, the consideration for the Agency's disposition of the Site, together with the Covenant Consideration and other items set forth in the Agreement, present not less than the fair reuse value at the use and with the covenants and conditions and development costs authorized by the Agreement.

Section 2. The City Council hereby finds and determines that the disposition of the Site by the Agency pursuant to the Agreement will eliminate blight within the Project Area by contributing to consolidation of parcels, promoting improvements, and expanding the tourist opportunities available within the community, as well as providing for the proper reuse and redevelopment of a portion of the Project Area which was declared blighted.

Section 3. The City Council hereby finds and determines that the Agreement is consistent with the provisions and goals of the Implementation Plan.

Section 4. The City Council has independently reviewed and considered the information in the Agency's Initial Study and Negative Declaration pursuant to California Code of Regulations, Title 14, Sections 15050(b) and 15096, and finds that no further environmental review is required at this time.

Section 5. The City Council hereby consents to and approves the DDA and further authorizes the Agency Director (or his designee) is hereby authorized, on behalf of the Agency, to make revisions to the Agreement which do not materially or substantially increase the Agency's obligations thereunder or materially or substantially change the uses or development permitted on the Site, to sign all documents, to make all approvals and take all actions necessary or appropriate to carry out and implement the Agreement and to administer the Agency's obligations, responsibilities and duties to be performed under the Agreement and related documents.

Section 6. The City Council acknowledges that the governing board of the Agency may authorize the Agency Director of the Agency (or his/her duly authorized representative) on behalf of the Agency, to implement the DDA and make revisions to the DDA which do not materially or substantially increase the Agency's obligations thereunder or materially or substantially change the uses or development permitted on the Site, to sign all documents, to make all approvals and take all actions necessary or appropriate to carry out and implement the DDA and the administer the Agency's obligations, responsibilities and duties to be performed under the DDA and related documents.

RESOLUTION NO. _____

A RESOLUTION OF THE GARDEN GROVE AGENCY FOR
COMMUNITY DEVELOPMENT APPROVING THE
DISPOSITION AND DEVELOPMENT AGREEMENT BETWEEN
THE AGENCY AND LAND & DESIGN INC. AND THE
AGENCY AND MAKING CERTAIN OTHER FINDINGS IN
CONNECTION THEREWITH

WHEREAS, the Garden Grove Agency for Community Development ("Agency") entered into that certain Disposition and Development Agreement with Land & Design Inc. ("Developer"), a corporation duly organized under the laws of the State of California, dated as of _____, 2011 ("DDA"), a copy of which is on file with the Agency, pursuant to which the Developer is to develop certain property identified therein as the "Site";

WHEREAS, the Agency has duly considered all terms and conditions of the proposed DDA and believes that the DDA is in the best interest of the Agency and the City and the health, safety, and welfare of its residents, and in accord with the public purposes and provisions of applicable State and local laws requirements;

WHEREAS, the Developer has submitted to the Agency and the City Council of the City of Garden Grove ("City Council") copies of the DDA substantially in the form submitted herewith; and

WHEREAS, all actions required by all applicable law with respect to the proposed DDA have been taken in an appropriate and timely manner; and

WHEREAS, the Agency and the City Council have duly considered all the terms and conditions of the proposed DDA and believes that the redevelopment of the Site pursuant to the DDA in the best interests of the City of Garden Grove and the health, safety, and welfare of its residents, and in accord with the public purposes and provisions of applicable state and local laws and requirements.

WHEREAS, the Agency is a community redevelopment agency duly organized and existing under the California Community Redevelopment Law, Health and Safety Code Section 33000, *et seq.* ("CRL"), and has been authorized to transact business and exercise the power of a redevelopment agency pursuant to action of the City Council ("City Council") of the City of Garden Grove ("City"); and

WHEREAS, the existing Garden Grove Community Project and the boundaries of the Community Project Area ("Project Area") were duly established by various ordinances of the City Council, which ordinances approved a redevelopment plan for the Garden Grove Community Project, as amended ("Redevelopment Plan"); and

WHEREAS, Agency is vested with the power to implement the Redevelopment Plan and to carry out the goals and objectives of the Garden Grove

Community Project, including without limitation the goals and objectives adopted by the Agency's implementation plan ("Implementation Plan") pursuant to the CRL; and

WHEREAS, the Agency is authorized and empowered by the CRL to enter into agreements for the acquisition, disposition and development of real property and otherwise to assist in the redevelopment of real property within a redevelopment project area in conformity with a redevelopment plan adopted for such area, to acquire real and personal property in redevelopment project areas, to receive consideration for the provision by the Agency of redevelopment assistance, to make and execute contracts and other instruments necessary or convenient to the exercise of its powers, and to incur indebtedness to finance or refinance redevelopment projects; and

WHEREAS, Land & Design Inc. ("Developer") is a corporation duly organized, in good standing and qualified to do business under the laws of the State of California and experienced in the acquisition, construction and development of hotel and retail, restaurant and entertainment facilities; and

WHEREAS, Agency wishes to assist the Developer in the construction of the Project (as hereinafter defined) by conveying to the Developer certain real property ("Site") which is comprised of certain property owned by the Agency ("Agency Property") and certain other property owned by third parties ("Third Party Property"), as shown on the Site Map attached hereto as Exhibit A and incorporated herein by reference which the Agency is currently seeking to acquire for the development of the Project and providing additional financial assistance; and

WHEREAS, Agency desires to enter into that certain DDA with Developer relating to the disposition of the Site and development and operation of the Developer Improvement, as more fully described in the DDA ("Project"); and

WHEREAS, the Agency is authorized to convey an interest in its real property to the Developer pursuant to the CRL; and

WHEREAS, pursuant to the California Environmental Quality Act (Public Resources Code Section 21000, *et seq.*) ("CEQA") and its implementing guidelines (14 California Code of Regulations Section 15000, *et seq.*) ("CEQA Guidelines"), an Initial Study was prepared for the project which is based in part on the Environmental Impact Report which was certified in August 2008 as part of the General Plan Update (State Clearinghouse No. 2008041079) as well as the Final Environmental Impact Report for the Redevelopment Project Plan certified by the Agency by Resolution No. 629 on July 2, 2002 (collectively, "Environmental Impact Reports") in connection with an amendment of the Redevelopment Plan; and

WHEREAS, the Environmental Impact Reports were designated as a program environmental impact report pursuant to Section 15180(b) of the CEQA Guidelines, and no subsequent environmental impact report is required for implementation of individual components of the General Plan and/or Redevelopment Plan because

neither a subsequent nor supplemental environmental impact report is required by Section 15162 or 15163 of the CEQA Guidelines; and

WHEREAS, the Environmental Impact Reports incorporate into the Redevelopment Plan a number of mitigation measures ("Mitigation Measures") including a mitigation monitoring program ("Mitigation Monitoring Program"); and

WHEREAS, the project will comply with the Mitigation Monitoring Program set forth in the Environmental Impact Reports; and

WHEREAS, the Agency has determined on the basis of the whole record before it, including the Environmental Impact Reports, the Initial Study and comments received, that there is no substantial evidence that the project will have a significant effect on the environment, that no further environmental review is required pursuant to CEQA Guidelines Sections 15162 and 15163, and the project qualifies for a Negative Declaration; and

WHEREAS, the Initial Study and Negative Declaration were prepared and circulated for public comment in accordance with CEQA and CEQA's implementing guidelines; and

WHEREAS, there is no evidence before the Agency that the proposed project would have any potential adverse affect on wildlife, and, as a result, the proposed project qualifies for the De Minimis impact exemption from the Department of Fish and Game environmental review fee; and

WHEREAS, the Agency has adopted an Implementation Plan pursuant to CRL Section 33490, which sets forth the objective of increasing the community's economic base by encouraging new investment in the community, insuring the optimum generation of local revenues by facilitating the redevelopment and reuse of land, maximizing the use of property to achieve the highest and best use and a feasible economic return, and promoting new investment; and

WHEREAS, by providing for the development and operation of the Project on the Site, the DDA will assist the Agency in meeting the development policies and objectives set forth in the Implementation Plan, specifically the goal of reducing blighting economic conditions and increasing employment opportunities by encouraging new investment in the community through facilitating the development of commercial properties and through the implementation of economic development programs; and

WHEREAS, pursuant to Sections 33430 and 33431 of the CRL, the Agency is authorized, after a duly noticed public hearing, to convey the Site for development pursuant to the Redevelopment Plan; and

WHEREAS, on _____, 2011, the Agency held a duly noticed public hearing on the proposed DDA in accordance with Health and Safety Code Sections 33430 and 33431, at which time the Agency reviewed and evaluated all of the information, testimony, and evidence presented during the public hearing; and

WHEREAS, notice of the public hearing was published in the Orange County News, and the proposed DDA was available for public inspection prior to the public hearing as stated in the published notice of public hearing; and

WHEREAS, all actions required by all applicable law with respect to the proposed DDA have been taken in an appropriate and timely manner; and

WHEREAS, the City Council has previously determined, in its adoption of the ordinance approving the Redevelopment Plan, that the Site were blighted; and

WHEREAS, the DDA will assist in the elimination of blight by providing for the development and operation of the Project on the Site; and

WHEREAS, the Agency has duly considered all terms and conditions of the proposed DDA and believes that the Project is in the best interests of the City of Garden Grove and the health, safety, and welfare of its residents, and in accord with the public purposes and provisions of applicable state and local laws and requirements;

NOW, THEREFORE, BE IT RESOLVED by the Garden Grove Agency for Community Development as follows:

Section 1. Each of the foregoing recitals is true and correct.

Section 2. The Agency finds and determines that, based upon substantial evidence provided in the record before it, the consideration for the Agency's conveyance of the Site pursuant to the terms and conditions of the DDA is not less than the fair reuse value of the Site.

Section 3. The Agency hereby finds and determines that the conveyance of the Site, construction and operation of the Project, and the payment of the Covenant Consideration pursuant to the DDA will eliminate blight within the Project Area by providing for the proper reuse and redevelopment of a portion of the Project Area, which was previously declared blighted.

Section 4. The Agency hereby finds and determines that the DDA is consistent with the provisions and goals of the Implementation Plan.

Section 5. The Agency hereby finds and determines the following regarding the DDA and the Project:

(a) The project does not involve substantial changes in the Redevelopment Plan which will require major revisions of the Environmental Impact Reports due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(b) No substantial changes have occurred with respect to the circumstances under which the Redevelopment Plan is being implemented which will require major revisions of the Environmental Impact Reports due to the

involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(c) No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the Environmental Impact Reports were certified as complete, shows any of the following:

(i) The project will have one or more significant effects not discussed in the Environmental Impact Reports;

(ii) Significant effects previously examined will be substantially more severe than shown in the Environmental Impact Reports;

(iii) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the Redevelopment Plan; or

(iv) Mitigation measures or alternatives, which are considerably different from those analyzed in the Environmental Impact Reports, would substantially reduce one or more significant effects on the environment.

(d) The Agency has considered the Initial Study and Proposed Negative Declaration together with comments received during the public review process.

(e) The Agency finds on the basis of the whole record before it, including the Initial Study and comments received, that there is no substantial evidence that the project will have a significant effect on the environment.

(f) The Agency further finds that the adoption of the Negative Declaration reflects the Agency's independent judgment and analysis.

(g) There is no evidence before the Agency that the proposed project will have potential for an adverse effect on wildlife resources or the habitat upon which wildlife depends.

(h) Therefore, the Agency, hereby adopts the Negative Declaration.

(i) The record of proceedings on which the Agency's decision is based is located at the City of Garden Grove, 11222 Acacia Parkway, Garden Grove, California. The custodian of the record of proceedings is the City Clerk's Office. The Agency hereby approves the DDA between the Agency and Developer, in the form of the DDA, which has been submitted herewith.

Section 6. The Agency Director and the Agency Secretary are hereby authorized to execute and attest the DDA, including any related attachments, on behalf of the Agency. Copies of the final form of the DDA, when duly executed and attested, shall be placed on file in the office of the City Clerk.

Section 7. The Agency Director (or his/her duly authorized representative) is further authorized to implement the DDA and take all further actions and execute all documents referenced therein and/or necessary and appropriate to carry out the DDA. The Agency Director (or his/her duly authorized representative) is hereby authorized to the extent necessary during the implementation of the DDA to make technical or minor changes thereto after execution, as necessary to properly implement and carry out the DDA, provided the changes shall not in any manner materially affect the rights and obligations of the Agency.

Section 8. The Agency Secretary shall certify to the adoption of this Resolution.

**GARDEN GROVE REDEVELOPMENT PROJECT
GARDEN GROVE, CALIFORNIA**

**SUMMARY REPORT PERTAINING TO THE DISPOSITION
OF CERTAIN PROPERTY WITHIN THE
GARDEN GROVE COMMUNITY
PROJECT AREA**

**California Community Redevelopment Law
Section 33433**

**PURSUANT TO PROPOSED DISPOSITION AND DEVELOPMENT
AGREEMENT BETWEEN
GARDEN GROVE AGENCY FOR COMMUNITY DEVELOPMENT
AND
LAND & DESIGN, INC.**

**Garden Grove Agency for Community Development
Garden Grove, California**

June 14, 2011

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A. INTRODUCTION

The following Summary Report ("Summary Report") has been prepared pursuant to Section 33433 of the California Health and Safety Code. This report sets forth certain details of the proposed Disposition and Development Agreement ("Agreement") between Garden Grove Agency for Community Development ("Agency") and Land & Design, Inc. ("Developer").

In accordance with Section 33433 of the California Health and Safety Code, before any property acquired by a Redevelopment Agency in whole or part, directly or indirectly with tax increment moneys is conveyed to the Developer, the City Council and Redevelopment Agency Board must approve such transaction by resolution after a joint public hearing. The notice of the time and place of the public hearing shall be published in a newspaper of general circulation in the community at least once per week for at least two successive weeks prior to the hearing.

A Summary Report has been prepared in accordance with the requirements of Section 33433. The Agency shall make available for public inspection and copying at a cost not to exceed the cost of duplication the Summary Report no later than the time of publication of the first notice of hearing. In addition to providing a general description of the project, this Summary Report describes the following:

- I. Salient Points of the Agreement:** This section summarizes the major responsibilities imposed on the Developer and the Agency by the Agreement.
- II. Cost of the Agreement to the Agency:** This section details the total cost to the Agency associated with implementing the Agreement.
- III. Estimated Value of the Interests to be Conveyed Determined at the Highest Use Permitted under the Redevelopment Plan:** This section estimates the value of the interests to be conveyed determined at the highest use permitted for the Site and the requirements imposed by the Redevelopment Plan.
- IV. Estimated Reuse Value of the Interests to be Conveyed:** This section summarizes the valuation estimate for the Site based on the required scope of development and other conditions and covenants required by the Agreement.
- V. Consideration Received and Comparison with the Established Value:** This section describes the compensation to be received by the Agency and explains any difference between the compensation to be received and the estimated value based on the highest and best use of the Site.
- VI. Blight Elimination:** This section describes the existing blighting conditions on the Site, and explains how the Agreement will assist in alleviating the blighting influence.

VII. Conformation with the AB1290; Five-Year Implementation Plan:

This section describes how the Agreement achieves the goals identified in the Agency's adopted AB 1290, Five-Year Implementation Plan.

I. SALIENT POINTS OF THE AGREEMENT

A. Project Description

The property which is the subject of this Agreement is approximately five acres (5) acres located within the boundaries of the Project Area located at the northeast quadrant of Twintree Lane and Harbor Boulevard and is comprised of certain property owned by the Agency ("Agency Property") and property currently owned by third parties ("Third Party Property").

The Agreement provides for the Agency to transfer the Site to the Developer for the proposed development that includes a hotel with approximately nineteen (19) stories and between three hundred (300) and four hundred rooms (400), including not less than ten thousand (10,000) square feet of meeting space (collectively, the "Upper Upscale Hotel"), as well as a minimum of ten thousand (10,000) and a maximum of sixty-five thousand (65,000) square feet of retail/restaurant/entertainment, including one (1) or more restaurants (the "Retail/Restaurant/Entertainment Component"), a Parking Structure, and as more specifically described in the Scope of Development (Exhibit C), and such other improvements as may be required by the Land Use Approvals (collectively, the "Upper Upscale Hotel Component"). In addition, Developer has also proposed up to two (2) Limited/Select/Focus Service/Suites/Extended Stay type hotels (collectively, the "Limited Service Hotels" and each a "Limited Service Hotel"), consisting of approximately 125 - 200 rooms each. The Limited Service Hotels are more specifically described in the Scope of Development. The Upper Upscale Hotel, the Limited Service Hotels, Retail/Restaurant/Entertainment Component, Parking Structure, and the other improvements required to be constructed on the Site pursuant to this Agreement and the Land Use Approvals are collectively referred to herein as the "Developer Improvements" or "Project," and individually "Separate Component(s)."

The Agreement requires the Agency to acquire and convey the Site, relocate the existing tenants/businesses along with carrying the cost of an existing lease for approximately two years, demolish the existing improvements, and rough grade the Site at no cost to the Developer. In return, the Developer must construct the Project.

The Agreement imposes development restrictions on the Project including quality levels, size and amenities, which impact the proposed Hotel's feasibility. As such, the Agreement requires the Agency to provide financial assistance to the Developer to mitigate the economic impact caused by the controls.

Agency Responsibilities Under the Agreement

Subject to the specific terms and conditions stated in the Agreement and outlined in the summary of the Salient Points, the Agency's key responsibilities are:

1. **Additional Property.** To acquire additional property currently owned by third parties located at 12302 Harbor, 12511, 12531, 12551, and 12571 Twintree Lane and to be conveyed to the Developer for the proposed Project.
2. **Agency Property.** To convey certain property owned by the Agency to the Developer for the proposed Project.
3. **Upper Upscale Hotel Covenant Consideration.** In consideration for the granting of the Covenants by the Developer to the Agency, Agency shall pay to the Developer annually, within thirty (30) days after receipt by the City of Transient Occupancy Tax attributable to the Upper Upscale Hotel, from the date on which Completion of Construction of the Upper Upscale Hotel occurs:
 - (a) through June 30, 2034, an amount equal to fifty-eight percent (58%) of the Transient Occupancy Tax Revenues which have been paid to and received by the City in each calendar year during such period with respect to the Upper Upscale Hotel(s); and
 - (b) for a period of twelve years, an amount equal to fifty percent (50%) of the Remaining Revenues in each calendar year during such period. Remaining Revenues means (i) an amount equal to the balance of the Transient Occupancy Tax attributable to the Upper Upscale Hotel after deducting the amounts described in (a) above (i.e., the remaining 42% of the Transient Occupancy Tax Revenues attributable to the Upper Upscale Hotel), (ii) Net Tax Increment Revenues attributable to the Upper Upscale Hotel Component in each calendar year during such period, and (iii) Sales Tax Revenues attributable to the Upper Upscale Hotel Components in each calendar year during such period, after deducting an amount equal to fourteen and 29/100 percent (14.29%) of the Agency Improvement Costs each such calendar year until the total amount of the Agency Improvement Costs has been reached.
4. **Limited Service Hotel Covenant Consideration.** In consideration for the granting of the Covenants by the Developer to the Agency, and with respect to each Limited Service Hotel on the Site, Agency shall pay to the Developer annually, for the period commencing on the date on which Completion of Construction of such Limited Service Hotel(s) has occurred and expiring ten (10) years thereafter, an amount equal to fifty percent (50%) of (i) the Transient Occupancy Tax Revenues which have been paid to and received by the City in each calendar year during such period with respect to each such Limited Service Hotel, (ii) the Net Tax Increment attributable to the Limited Service Hotel(s) in each calendar year during such period, and (iii) Sales Tax Revenues attributable to the Limited Service Hotel(s) in each calendar year

during such period. Such payments will be made to Developer within thirty (30) days after receipt of such revenues by the City or Agency, as applicable.

5. **Sunbelt Property Covenant Consideration.** In consideration for the granting of the Covenants by the Developer to the Agency, the Agency shall pay to the Developer annually with respect to the Sunbelt Property, from and after Completion of Construction of any portion of the Retail/Restaurant/Entertainment Component on the Sunbelt Property, an amount equal to fifty percent (50%) of the Net Tax Increment Revenues and Sales Tax Revenues attributable to Retail/Restaurant/Entertainment Component of the Sunbelt Property for a period of ten (10) years from the date on which Completion of Construction of each such portion of the Retail/Restaurant/Entertainment Components on the Sunbelt Property (i.e., there shall be separate 10-year payment periods for each such portion of the Retail/Restaurant/Entertainment Components on the Sunbelt Property), in each case as received by the City in each calendar year during such period. The payments required shall be prorated for any partial years at the beginning or end of the applicable periods and paid to Developer within thirty (30) days after receipt of such revenues by the City or Agency, as applicable.

Developer Responsibilities Under the Agreement

Subject terms and conditions to the specific stated in the Agreement and outlined in the summary of the Salient Points, the Developer's key responsibilities are:

1. Design and construct the specific Improvements as specified in the Scope of Development, the Land Use Approvals, and the approved Final Construction Plans.
2. Meet development milestones, including commencement and completion of construction, by the dates specified in the Schedule of Performance.

II. COST OF THE AGREEMENT TO THE AGENCY

The estimated costs incurred by the Agency to implement the Agreement are Fifteen Million Eighth Hundred Thousand Dollars (\$15,800,000), and include the following:

Agency costs to acquire the Site (relocation costs, demolition costs, and costs for hazardous materials abatement), CEQA documentation, site preparation, administrative costs, and the Agency costs for other public improvement's \$15,800,000. Agency to provide direct financial assistance to the Developer for the Project of \$15,800,000.

The Agency will receive the Property Tax Increment generated by the Project, which will partially defray the Agency cost to implement the Agreement. In addition, the City will receive the Transient Occupancy Tax (TOT) and Sales Tax Revenues

generated by the Project, which are projected to produce substantial General Fund revenues over time.

III. ESTIMATED VALUE OF THE INTERESTS TO BE CONVEYED DETERMINED AT THE HIGHEST AND BEST USE PERMITTED UNDER THE REDEVELOPMENT PLAN

This section presents an analysis of the fair market value of the Site at its highest and best use.

In appraisal terminology, the highest and best use is that use of the Site that generates the highest property value and is physically possible, financially feasible, and legally permitted. Therefore, value at highest and best use is based solely on the value created and not whether or not that use carries out the redevelopment goals and policies for the City of Garden Grove. The subject property is located in a Land Use District, the Harbor Corridor Specific Plan HCSP. The district allows for tourist related land uses including hotels, retail and entertainment land uses.

Horwath Hospitality and Leisure, LLC ("Horwath"), the Agency's economic consultant, undertook a review of available appraisals and comparable land sales in order to determine the fair market value of Site. An appraisal was conducted by Lidgard and Associates, Inc. (Lidgard) on a portion of the Subject Site, which did not include the corner portion, with a date of value of March 31, 2009. Lidgard appraisal methodology relied on the comparable sales approach to value, with a conclusion range of value from \$43.00 to \$56.00 per SF of land (rounded). Subsequent to this appraisal, Lidgard provided sales as of April 2011. Horwath concluded the value of the Site (5.0 acres) as of May 9, 2011, to be \$10,900,000, or \$50.00 per SF of land, without consideration of costs such as the removal of current improvements on the Site.

In addition, a separate analysis of five Restaurant and Retail pad sites on a total of 2.422 acres by Keyser Marston Associates, Inc. concluded to an estimated \$50 per square foot for each parcel, or a total approximate land value of \$5,275,000. Added to this value were the Cost Savings from Sitework and Landscaping, for an Effective Land Payment of \$5,908,000. Subtracting Estimated Parking Costs by the Master Developer, resulted in Remaining Land Proceeds of \$2,624,000. This was considered to partially offset the negative Residual Reuse Value of the Hotel Site.

IV. ESTIMATED REUSE VALUE OF INTERESTS TO BE CONVEYED

In an "Option 1 - Estimated Reuse Value Report - Site C Proposed for Development by Land & Design, Inc. - Upper Upscale with Casitas, Select Service and All-Suite Hotels" dated June 9, 2011, Horwath prepared a reuse valuation analysis of the proposed Project. Based upon the financial terms and conditions imposed by the Agreement, Horwath analysis concluded that the Project generates a negative reuse value inclusive of the Agency Assistance, of Thirty-Six Million Dollars

(\$36,000,000). Adjusting for the partial offset from the Restaurant and Retail pad site(s), the Project generates a negative reuse value inclusive of the Agency Assistance, of Thirty-Three Million Four Hundred Thousand Dollars (\$33,400,000), rounded.

If the Developer chooses Option 2, which is a second full-service hotel with up to 225 rooms or two (2) Upper Upscale Hotels consisting of 450 in aggregate, in an "Option 2 - Estimated Reuse Value Report - Site C Proposed for Development by Land & Design, Inc. - Upper Upscale with Casitas and Upscale Full Service Hotel" dated June 9, 2011, Horwath prepared a reuse valuation analysis of the proposed Project. Based upon the financial terms and conditions imposed by the Agreement, Horwath analysis concluded that the Project generates a negative reuse value inclusive of the Agency Assistance, of Twenty Million Dollars (\$20,000,000). Adjusting for the partial offset from the Restaurant and Retail pad site(s), the Project generates a negative reuse value inclusive of the Agency Assistance, of Seventeen Million Four Hundred Thousand Dollars (\$17,400,000), rounded.

V. CONSIDERATION RECEIVED AND COMPARISON WITH THE ESTABLISHED VALUE

The Agreement requires the Agency to convey the Agency Properties to the Developer at no cost and to provide the Developer with direct financial assistance.

The Developer is required to provide public parking in a structure on the Site, develop an Upper Upscale hotel with approximately nineteen (19) stories and between three hundred (300) and four hundred rooms (400), including not less than ten thousand (10,000) square feet of meeting space as well as a minimum of ten thousand (10,000) and a maximum of sixty-five thousand (65,000) square feet of retail/restaurant/entertainment, including one (1) or more restaurants, all as more specifically described in the Scope of Development (DDA - Exhibit C). In addition, Developer has also proposed up to two (2) Limited Service Hotels and each a "Limited Service Hotel", consisting of approximately 125 - 200 rooms each. The Limited Service Hotels are more specifically described in the Scope of Development. The Upper Upscale Hotel, the Limited Service Hotels, Retail/Restaurant/Entertainment Component, Parking Structure, and the other improvements required to be constructed on the Site pursuant to this Agreement and the Land Use Approvals are collectively referred to herein as the "Developer Improvements" or "Project," and individually "Separate Component(s)."

The Agency is also imposing extraordinary land use controls on the Site, i.e., the quality of the Project must be comparable to noted upper up-scale Westin Pasadena California. As indicated previously, the Horwath analysis concluded that the Agency Property has a negative reuse land value. Thus, Horwath concluded that the consideration to be received is essentially equal to the established fair use value.

VI. BLIGHT ELIMINATION

The Redevelopment Plan (Plan) for the Garden Grove Community Project Area governs the Site. In accordance with Section 33490 of the California Community Redevelopment Law, the Plan contains the goals and objectives and the projects and expenditures proposed to eliminate blight within the Project Area.

The Site, approximately 5 acres in size and encompasses fourteen (14) parcels, which will be used to develop the Project, is currently occupied with two (2) vacant and unimproved lots; four (4) lots that were formerly used as a trailer park (non-fixed recreational vehicle park) and are improved with vacant buildings (office, restroom, and laundry) that will be demolished; two (2) lots improved with a commercial building with the rear used as a trailer park (non-fixed recreational vehicle park) that will be demolished; four (4) lots improved with single-family homes that will be demolished; and two (2) lots comprising a portion of an unimproved backyard of two single-family home residences, which the residential structures are not part of this project. The development of the proposed Project on the Site will eliminate blight at this location by replacing substandard uses, underutilized land, uneconomic land uses, and obsolete structures defective in design character and physical condition, with a new high quality, mixed-use development. The Project will facilitate land assembly to prevent piecemeal development that would leave economic potential underachieved, re-plan, redesign and develop underdeveloped areas that are stagnant or improperly utilized, encourage private sector investment in development of the project areas, and strengthen hospitality, entertainment, retail and other commercial functions in the project areas.

VII. CONFORMANCE WITH AB 1290, FIVE-YEAR IMPLEMENTATION PLAN

The primary AB 1290 Implementation Plan program objective for the Garden Grove Community Project is to eliminate conditions which negatively impact economic development of the community by acquiring, removing, consolidating and rehabilitating substandard properties. To that end, the Agency plans to convey the Site to the Developer for the development of the Project.

Furthermore, the Agency's Implementation Plan 2010 through 2014 (Implementation Plan) also establishes a priority objective of increasing the community's economic base by encouraging new investment in the redevelopment project area. The Implementation Plan explicitly lists ensuring that optimum generation of sales tax revenues by facilitating the reuse, rehabilitation and development of commercial properties as an Agency goal. The Project, which will provide new commercial development and the subsequent transient occupancy and sales tax revenues, and property tax increment within the redevelopment project area, conforms to the Implementation Plan, and will achieve goals specifically defined in the Implementation Plan.

ENVIRONMENTAL CHECKLIST FORM

1. **PROJECT TITLE:**
Land & Design, Inc. Disposition and Development Agreement
2. **LEAD AGENCY:**
City of Garden Grove
11222 Acacia Parkway
P.O. Box 3070
Garden Grove, CA 92840
3. **CONTACT PERSON:**
Greg Blodgett, Senior Project Manager, City of Garden Grove
4. **PROJECT LOCATION:** The proposed project is located on the northeast corner Harbor Boulevard and Twintree Lane, Assessor's Parcel Numbers: 231-521-01, 231-521-02, 231-521-03, 231-521-04, 231-521-05, 231-521-06, 231-521-07, 231-521-08, 231-521-09, 231-521-10, 231-491-18, 231-491-19, 231-491-20, and 231-491-21 in the City of Garden Grove.
5. **PROJECT SPONSOR:**
City of Garden Grove Economic Development Department
11222 Acacia Parkway
Garden Grove, CA 92840
6. **ENVIRONMETNAL SETTING:**
The project site is approximately 5 acres in size and encompasses fourteen (14) parcels. The project site includes two (2) vacant and unimproved lots; four (4) lots that were formerly used as a trailer park and are improved with vacant buildings that will be demolished; two (2) lots improved with commercial buildings with the rear used as a trailer park that will be demolished; four (4) lots improved with single-family homes that will be demolished; and two (2) lots comprising a portion of an unimproved backyard of two single-family home residences, which the residential structures are not part of this project.

Ten (10) of the lots have a General Plan Land Use Designation of International West Mixed Use and are zoned HCSP-TZN (Harbor Corridor Specific Plan-Transition Zone North); two (2) lots have a General Plan Land Use Designation of International West Mixed Use and are zoned R-1 (Single-Family Residential); while the remaining two (2) lots have a General Plan Land Use Designation of Low Density Residential and are zoned R-1 (Single-Family Residential). The project includes changing the residential properties' General Plan Land Use Designation from Low Density Residential to International West Mixed Use and a corresponding zoning change from R-1 to Planned Unit Development (PUD). In addition, the other properties' zoning will be changed from HCSP-TZN (Harbor Corridor Specific Plan-Transition Zone North) to PUD.

POSTED**MAY 20 2011**

TOM DALY, CLERK-RECORDER

By  DEPUTY

The project site abuts commercial uses to the north; commercial and single-family homes to the south; single-family homes to the east; and commercial and hotel uses to the west, including vacant commercial properties.

7. **GENERAL PLAN DESIGNATION:**
International West Mixed Use and Low Density Residential

POSTED

8. **ZONING:**
HCSP-TZN (Harbor Corridor Specific Plan- Transition Zone North) and R-1
(Single-Family Residential).

MAY 20 2011

TOM DALY, CLERK-RECORDER

By  DE

9. **DESCRIPTION OF PROJECT:**
Consideration of a Disposition and Development Agreement between Land & Design, Inc. and the Garden Grove Agency for Community Development for a proposal to develop and construct a hotel with approximately nineteen (19) stories and between three hundred (300) and four hundred (400) rooms, as well as a minimum of ten thousand (10,000) square feet of retail/restaurant/entertainment, including one (1) or more restaurants (the "Retail/Restaurant/Entertainment Component"), a Parking Structure, and not less than ten thousand (10,000) square feet of meeting space (the "Meeting Space Component") (collectively, the "Upper Upscale Hotel"). In addition, Developer has also proposed to construct up to a maximum of sixty five thousand (65,000) square feet of retail/restaurant/entertainment, including one (1) or more restaurants. In addition, Developer has also proposed to construct up to two (2) Limited/Select/Focus Service/Suites/Extended Stay type hotels (collectively, the "Limited Service Hotels"), consisting of approximately one hundred twenty five to three hundred (125-300) rooms each.

10. **OTHER AGENCIES WHOSE APPROVAL (AND PERMITS) IS REQUIRED:**
City of Garden Grove Agency for Community Development.

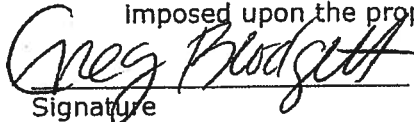
ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated," as indicated by the checklist on the following pages.

<input type="checkbox"/> Land Use/Planning	<input type="checkbox"/> Transportation/Traffic	<input type="checkbox"/> Public Services/Service Systems
<input type="checkbox"/> Population/Housing	<input type="checkbox"/> Biological Resources	<input type="checkbox"/> Utilities and Services
<input type="checkbox"/> Geology/Soils	<input type="checkbox"/> Recreation	<input type="checkbox"/> Aesthetics
<input type="checkbox"/> Hydrology/Water Quality	<input type="checkbox"/> Hazards & Hazardous Materials	<input type="checkbox"/> Cultural Resources
<input type="checkbox"/> Air Quality	<input type="checkbox"/> Noise	<input type="checkbox"/> Greenhouse Gas Emissions
<input type="checkbox"/> Mineral Resources	<input type="checkbox"/> Mandatory Findings of Significance	<input type="checkbox"/> Agricultural and Forestry Resources

DETERMINATION:
On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project COULD have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.


Signature

Greg Blodgett
Printed Name

Date May 20, 2011

For:
City of Garden Grove

POSTED

MAY 20 2011

TOM DALY, CLERK-RECORDER

By  DEPUTY

EVALUATION OF ENVIRONMENTAL IMPACTS:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cited in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.)
2. All answers must take into account the whole of the action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analysis," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such efforts were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are "*Less than Significant with Mitigation Measures Incorporated*," describe the mitigating measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g. general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is elected.
9. The explanation of each issue should identify:
 - a) The significance criteria or threshold, if any, used to evaluate each question; and
 - b) The mitigation measure identified, if any, to reduce the impact to less than significance

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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I. AESTHETICS*

Would the project:

- a. Have a substantial adverse effect on a scenic vista?
- b. Substantially damage scenic resources, including but not limited to trees, rock, outcroppings, and historic buildings within a state scenic highway?

Response (a-b): The project site is not located adjacent to any officially designated scenic vistas or highways. The project site is located in an urbanized area that is surrounded by commercial and residential uses. The proposed site improvements will be designed to be compatible with the Community Design Element as stated in the General Plan and with other improvements and developments in the area.

- c. Substantially degrade the existing visual character or quality of the site and its surroundings?

Response: The property is located in the International West Resort District, which is intended as a tourist destination that offers hotels, restaurants, retail, and entertainment venues. The properties located northwest of the project site are improved with hotels and restaurants. There are no unique or scenic visual resources on the project site or in its vicinity. The proposed hotel and restaurant project will be consistent with the visual character of the area.

During the design review phase, the architectural design of the project, including exterior paint colors, architectural detailing, and street and on-site landscaping, will be reviewed to ensure consistency with the vision of the International West Resort District as set forth in the City's adopted General Plan. The proposed development, along with recommended conditions of approval, will ensure compatibility with the goals and objectives of the Community Design Element contained in the City's adopted General Plan, and other similar developments in the area.

- d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Response: The project site is located in an urban area where illumination is provided by building and pole-mounted lighting both on the site and in the immediate vicinity of the project site. Although the project will contribute additional lighting within the area, the project is required to adhere to all Municipal Code requirements pertaining to maximum light levels. When specific project details are developed and available during the entitlement phase of the project, a Light and Glare Study and a Shade and Shadow Study will be prepared to evaluate possible impacts to adjacent uses, and all appropriate mitigation measures will be specified in the conditions of approval.

II. AGRICULTURE AND FOREST RESOURCES*

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as Defined by Government Code Section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Response (a-e): According to the California Department of Conservation Farmland Mapping and Monitoring Program, the site has not been mapped as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The project is not zoned for farmland or forest land and is not located within an area that is used or zoned for farming or forest uses. The project is not subject to a Williamson Act contract, and thus will not conflict with a Williamson Act contract, as the properties are not zoned or used for agricultural purposes.

The project is located in an urbanized area, and the properties are zoned HSCP-TZN (Harbor Corridor Specific Plan-Transition Zone North) and R-1 (Single-Family Residential), and have a General Plan Land Use designation of International West Mixed Use and Low Density Residential. The properties with a land use designation of Low Density Residential will be changed to International West Mixed Use, and all the properties will be rezoned to a Planned Unit Development to allow the proposed development. The project site includes two (2) vacant and unimproved lots; two (2) lots that were formerly used as a trailer park and are improved with vacant buildings that will be demolished; two (2) lots improved with commercial buildings that will be demolished; four (4) lots improved with single-family homes that will be demolished; and two (2) lots comprising a portion of an undeveloped backyard of two single-family residences, which the residential structures will not be part of this project. The project does not propose a change of zoning that would conflict with or convert existing forest or timberland zoning.

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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There are no forest lands within this area, so no loss of forest land or conversion of forest land to non-forest use will occur.

The project site is not located in close proximity to forest land or farmland designated by the California Department of Conservation. Therefore, the project does not involve other changes that, due to their location or nature, would result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

III. AIR QUALITY*

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Response (a-d): The project will not conflict with adopted air quality plan. The project site is located within the South Coast Air Quality Management District (SCAQMD). SCAQMD has adopted both regional and localized air quality significance thresholds. A project's air quality impacts can be separated into short-term impacts from construction, and long-term permanent impacts from project operations. Short-term impacts generally include fugitive dust from construction activities (i.e., demolition, grading, and dirt-hauling) and gaseous emissions from the use of heavy equipment in addition to the use of solvents and paint at the project site; while long-term operational impacts typically include vehicles traveling in and out of the project site and land use emissions. When specific project details are developed and available during the entitlement phase, an Air Quality Study will be prepared to analyze the project's potential short-term and long-term air quality impacts.

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| e. Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Response: No objectionable odors would be created by the proposed development. Temporary odors may occur within the area during the construction phase of the project as a result of the construction material used, such as paint, coatings, solvents, and gas powered vehicles and equipment in the immediate vicinity of the project site. These emissions, however, dissipate rapidly. The General Plan EIR addressed odors that may arise as the result of new construction.

Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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IV. BIOLOGICAL RESOURCES*

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional or state habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Response (a-f): The project is located within a highly urbanized area and is devoid of any native vegetation. There are no identified species or habitats on the site. The properties that comprise the project site include parcels used as a trailer park, commercial/retail uses, single-family homes, and two (2) vacant and unimproved lots. Endangered species are not expected to occur in the area due to the lack of suitable habitat and heavy disturbance of the existing environment.

The project site does not contain any standing surface water. Therefore, there would be no potential impact on riparian habitats or other sensitive riparian natural communities. Additionally, there would not be any potential impacts on federally protected wetlands, marsh, or vernal pools.

The project does not conflict with any local policies or ordinances protecting biological resources. Additionally, as indicated in the Final Environmental Impact Report prepared and certified in August 2008 for the General Plan 2030 Update, State Clearinghouse No. 2008041079 (the "General Plan EIR"), the projected development intensity for the International West Mixed Use area would not conflict with any local,

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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regional or state habitat conservation plan. No biological resource impacts are anticipated.

V. CULTURAL RESOURCES*

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Disturb any human remains, including those interred outside of formal cemeteries? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Response (a-d): The site is located in an urbanized area, and, according to the General Plan EIR, no significant historical, archeological, paleontological, or geological resources were identified within the International West Mixed Use area, nor are there any known burial sites within the project site area. If unanticipated archeological resources, paleontological resources, or human remains are discovered during construction, all attempts will be made to preserve in place or leave in an undisturbed state in compliance with California Health & Safety Code § 7050.5 and Public Resources Code § 20183.2. No cultural resources impacts are anticipated.

VI. GEOLOGY AND SOILS*

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii. Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii. Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iv. Landslide? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Response (i-iv): According to the General Plan EIR, the nearest major active fault along which a rupture or a major seismic event could occur is the Newport-Inglewood Fault. This fault is located just west of Dana Point Harbor and continues north through Newport Beach into south Los Angeles County. The seismic parameters of the site are similar to those of other areas in Orange County during the maximum credible event along the Newport-Inglewood Fault Zone that is estimated to be of 7.5 magnitude. No fault rupture is expected in the immediate vicinity of the project.

	Potentially	Potentially	Less than	
Potentially	Significant	Significant	Significant	No
Significant	Unless	Unless	Impact	Impact
Impact	Mitigated	Mitigated		

Liquefaction could potentially occur during a maximum intensity event along the Newport-Inglewood fault due to the possibly saturated nature of the sandy soils in the area.

Some exposure to seismic-related hazards, therefore, is expected. All construction, however, shall comply with applicable building codes including, but not limited to, the California Building Code, Fire Code, and other related City requirements. In general, seismic issues are common for most of South California, and adherence to project design features, the California Building Code, Fire Code, and City requirements would ensure that the impacts due to seismic ground shaking or failure would be less than significant. As a result, the risk of loss, injury, or death involving seismic rupture or shaking would be considered less than significant and no mitigation measures would be necessary.

Additionally, the project area is relatively flat and therefore would not normally be subject to landslides or mudslides. The construction of the proposed project will likely involve excavations and such excavation work will be required to be performed in accordance with all applicable codes and standards to minimize the threat of a landslide or mudslide. No impacts are anticipated.

- b. Result in substantial soil erosion or the loss of topsoil?

Response: The General Plan EIR states that "The City of Garden Grove is characterized as gentle slopes ranging from 0 to 2 percent. Alluvial sediments, deposited by ancestral Santa Ana River, underlie the City. Alluvium sediments are typically comprised of a variety of materials including fine particles of silt and clay and larger particles of sand and gravel. The City is 99 percent built out as an urbanized city. The General Plan 2030 Update focused on preserving existing residential neighborhoods, guiding the remaining development and redevelopment opportunities and encouraging revitalization of selected areas. Much of the area available for new development or redevelopment would be on infill sites covered by primarily disturbed vegetation or impermeable surfaces. This would result in minimal soil erosion or loss of top soil." The project will require excavation and grading of the site in order to accommodate the proposed project, which will require preparation of a grading plan. Site drainage will be required to meet Engineering Services Division standards requiring storm water drainage to flow off the site. This storm water drainage, however, must also comply with applicable Water Quality Management Plan ("WQMP") provisions. This will allow the overall drainage pattern to flow to the adjoining streets or storm drains in and around the subject site depending on the magnitude of the project's intensity and density. Drainage easements may be required for storm drain purposes. The location of the easement(s) and the size of storm drains will be determined before site preparation begins. In order to mitigate potential site drainage issues, all construction involving excavation and/or grading is required to adhere to the requirements of the Engineering Services Division. All improvements are required to adhere to applicable codes including the California Building Code, and State and Federal Occupational Safety requirement.

- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- d. Be located on expansive soil, as defined in Table

	Potentially	Potentially	Less than	
Potentially	Significant	Significant	Significant	No
Significant	Unless	Unless	Impact	Impact
Impact	Mitigated	Mitigated		

18-1-B of the Uniform Building code (1994), creating substantial risks of life or property?

Response (b-d): The site is not located on an identified landslide hazard area where local topographical, geological, geotechnical and subsurface conditions signify landslide potential. Vertical displacement or subsidence of the land surface can be caused by several factors, including the withdrawal of oil, gas, or water from underlying formations, decomposition of buried organic material, and construction of heavy manmade structures above underlying poorly consolidated materials. None of these or any other conditions typically contributing to subsidence are expected in the project area. All new construction is required to adhere to the requirements of the Engineering Services Division to address any subsidence of the land. All improvements are required to adhere to applicable codes including the California Building Code, and State and Federal Occupational Safety requirements.

- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Response: The subject site and project will be served by the City's sewers system and therefore no alternative wastewater disposal system is needed to support the project. No impacts are anticipated.

VII. GREEN HOUSE GAS EMISSIONS*

Would the project:

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Response (a-b): The project would result in both short-term and long-term emissions. The project would result in short-term emissions of greenhouse gases during construction and long-term emissions after construction is completed and the project becomes operational. When specific project details are developed and available during the entitlement phase, an Air Quality Impact Study will be prepared to analyze the project's potential greenhouse gas (GHG) impacts, and is required to comply with statewide significance threshold levels, if applicable, or with the South Coast Air Quality Management District's (SCAQMD) standard for devising an acceptable methodology to properly analyze GHG emissions.

VIII. HAZARDS AND HAZARDOUS MATERIALS*

Would the project:

- a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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hazardous materials into the environment?

- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Response (a-c): Similar to other large hotel and restaurant developments, hazardous materials, including paints, solvents, and other materials, may be stored on-site and utilized in daily operations or maintenance of the property. All proposed uses within the project, however, must comply with applicable federal, state, and local regulations pertaining to the transport, storage, use and/or disposal of hazardous materials on the site. There will be no health hazards or potential for health hazards created by the proposed development or uses. The development will not create any health hazards or increase the potential of exposure to existing hazards through the day-to-day operations of the project or through any transport of hazardous materials. The project will not increase the risk of accidental explosion or release of hazardous substances or waste within one-quarter mile of a school.

- d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?

Response: The project is not located on a site that has been included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Since the site is not located on a hazardous materials site, no impact is anticipated.

- e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

- f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Response (e-f): The project site is not located within an airport land use plan, within two-miles of a public airport or public use airport, or within the vicinity of private airstrip. Therefore, the project would not result in a safety hazard for people residing or working in the project area. No impacts are anticipated.

- g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Response: The project would not physically interfere with an adopted emergency response plan or emergency evacuation plan.

- h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Response: The project is within a highly urbanized area and is not located adjacent to any wildlands or an area where residences are intermixed with wildlands.

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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Therefore, based on the location of the project, no exposure of people or structures to a risk of loss, injury, or death involving a wildfire is anticipated.

IX. HYDROLOGY AND WATER QUALITY*

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a. Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted?) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface run-off in a manner which would result in flooding on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. Create or contribute run-off water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f. Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Response (a-f):

The Federal Clean Water Act establishes a framework for regulating potential water quality impacts from construction activities through the National Pollutant Discharge Elimination System (NPDES) program. The proposed project is required to comply with State regional, and local water quality standards, including the requirements of the California Regional Water Quality Board implementing the NPDES program and the requirements of the Garden Grove Sanitation District and the Garden Grove Public Works Water Services Division such as the implementation of a Storm Water Pollution Prevention Plan ("SWPPP") and Water Quality Management Plan ("WQMP"), including the operation of Best Management Practices to prevent and reduce the potential release of pollutants.

The project site is located within an urbanized area with existing residential and commercial uses. Both the site and the area surrounding the site are almost entirely covered with impermeable surfaces. The project, therefore, will not involve operations that could affect aquifers' recharge capability or alter the direction of groundwater flow beyond existing conditions. Project construction will not require

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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substantial excavation or other related below-grade work, and is not expected to use of large quantities of water. Any water pumped out, if necessary, will be subject to discharge requirements of the Regional Water Quality Control Board, the Garden Grove Sanitation District, and the Garden Grove Public Works Water Services Division.

There are no surface waters within the project area. The Santa Ana River is located east of the project site. All run-off from the area is, and will continue to be, collected in local and regional storm drain facilities. These waters will be transported with other urban run-off into City and County drainage facilities as regulated by the City and County NPDES programs.

There will be less than significant change in absorption rates, drainage patterns and in the rate or amount of surface run-off as of the land is presently developed. To ensure proper drainage is provided, grading and drainage plans are required to be incorporated into the construction plans and approved by the Engineering Services Division prior to issuance of any building permits and commencement of construction. When specific project details are developed and available during the entitlement phase, a Water Quality Impact Report will be prepared for the project that addresses any additional water quality and run-off issues that may arise due to the construction and operation of the proposed project.

- g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Response (g-i): The project area is located within the Regular Flood Hazard Zone "X", as determined by the Federal Emergency Management Agency Flood Insurance Rate Map No. 06059C0141J (Community No. 060220, Panel No. 0141J), issued on December 3, 2009. Flood Zone "X" includes areas of 500 year flood; with average depths of less than one foot, or with drainage areas less than one square mile; and areas protected by levees from 100-year floods. Titles 6, 9, and 14 of the City's Municipal Code provide regulations to minimize flooding, and losses resulting from flooding. In particular, Title 9, Chapter 12 establishes a Flood Hazard Overlay Zone which includes the City's floodplain management regulations. The risk of flood is also addressed in the City's Emergency Management Plan. In addition, grading improvement plans will be required to address potential flooding in designing the placement of the buildings, the height of the building pads, and related improvements to ensure the development meets the Federal Emergency Management Agency ("FEMA") requirements. Compliance with the City's Municipal Code, the City's Emergency Management Plan and grading improvement plan restrictions reduce potential flood impacts a level of less than significant. Flood Zone "X" is not subject to the Flood Hazard Overlay Zone.

- j. Inundation by seiche, tsunami, or mudflow?

	Potentially	Potentially	Less than	
	Significant	Significant	Significant	No
	Impact	Unless	Impact	Impact
		Mitigated		

Response: Seiches, tsunamis, and mudflows are not anticipated to occur in the vicinity of this project due to its distance from the coast, absence of large bodies of water, or hilly or mountainous areas that potentially could cause mudflows.

X. LAND USE AND PLANNING*

Would the project:

- a. Physically divide an established community?

Response: The project site includes two (2) vacant and unimproved lots; two (2) lots that were formerly used as a trailer park and are improved with vacant buildings that will be demolished; two (2) lots improved with commercial buildings that will be demolished; four (4) lots improved with single-family homes that will be demolished; and two (2) lots comprising a portion of an undeveloped backyard of two single-family residences, which the residential structures will not be part of this project. The proposed Planned Unit Development zoning designation and subsequent intended development of the site are compatible with the surrounding area, and will not physically divide existing residential or commercial developments in the area. During construction there may be disruptions in traffic patterns or an increase in noise. These impacts are considered to be less than significant as these disruptions are temporary in nature and were addressed in the General Plan EIR.

- b. Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Response: The subject site is comprised of fourteen (14) parcels with a combined land area of approximately 5 acres. The project site abuts commercial uses to the north; commercial and single-family homes to the south; single-family homes to the east; and commercial and hotel uses to the west, including vacant commercial properties.

The project site includes two (2) vacant and unimproved lots; four (4) vacant lots that were formerly used as a trailer park and are improved with vacant buildings that will be demolished); two (2) lots improved with commercial buildings with the rear used as a trailer park that will be demolished that will be demolished; four (4) lots improved with single-family homes that will be demolished; and two (2) lots comprising a portion of an undeveloped backyard of two single-family residences, which the residential structures will not be part of this project.

The properties have a General Plan Land Use Designation of International West Mixed Use and Low Density Residential, and are zoned HCSP-TZN (Harbor Corridor Specific Plan-Transition Zone North) and R-1 (Single-Family Residential). The project includes changing the General Plan Land Use Designation for four (4) parcels from Low Density Residential properties to International West Mixed Use and changing their zoning from R-1 to Planned Unit Development (PUD). In addition, the other property's zoning will be changed from HCSP-TZN (Harbor Corridor Specific Plan-Transition Zone North) to PUD. With the changing of the General Plan Land Use designation and zoning, the project will be consistent with the goals of the General Plan Element for the International West Mixed Use which allows for resort, entertainment, retail, and hotels.

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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The proposed project includes the construction of a hotel with approximately nineteen (19) stories and between three hundred (300) and four hundred (400) rooms, as well as a minimum of ten thousand (10,000) square feet of retail/restaurant/entertainment, including one (1) or more restaurants (the "Retail/Restaurant/Entertainment Component"), a Parking Structure, and not less than ten thousand (10,000) square feet of meeting space (the "Meeting Space Component") (collectively, the "Upper Upscale Hotel"). In addition, Developer has also proposed to construct up to a maximum of sixty five thousand (65,000) square feet of retail/restaurant/entertainment, including one (1) or more restaurants. In addition, Developer has also proposed to construct up to two (2) Limited/Select/Focus Service/Suites/Extended Stay type hotels (collectively, the "Limited Service Hotels"), consisting of approximately one hundred twenty five to three hundred (125-300) rooms each.

Therefore, no conflict with the General Plan Land Use designation or the property's zoning is anticipated, since the project is a resort hotel, which is the intended land use for properties within the International West Mixed Use area. As set forth in this initial study, the project does not conflict with any other applicable land use plan, policy, or regulation adopted by an agency with jurisdiction over the project.

- c. Conflict with any applicable habitat conservation plan or natural community conservation plan?

Response: The proposed project is located within a highly urbanized area of Orange County and is in conformance with applicable federal, state and City of Garden Grove environmental requirements and plans. The General Plan EIR analyzed intense commercial development for this area, including hotels, restaurants, and entertainment venues, and associated potential impacts such as increased traffic in the area, water and sewer concerns, and design issues. The project is not located within an area that is subject to any habitat conservation plan or natural community conservation plan.

XI. MINERAL RESOURCES*

Would the project:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Response (a-b): The City's General Plan and the Harbor Boulevard Specific Plan identify known areas with mineral resources. The project is not located in any known area with mineral resources identified in the City's General Plan or the Harbor Boulevard Specific Plan.

XII. NOISE*

Would the project result in:

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other

Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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agencies?

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Response (a-d): When specific project details are developed and available during the entitlement phase of the project, a Noise Study will be required for the project that analyzes the potential noise impacts generated by the development, such as the noise generated from the additional traffic created by the project (roadway noise), exterior noise generated from the exterior pool area, the loading/unloading area, the trash compactor, the parking structure, noise generated during construction of the project, and interior noise levels. The sensitive noise areas are located directly to the east of the property, and are improved with single-family homes.

Construction will occur within the project area. Although construction noise could cause an annoyance for surrounding uses, due to the temporary nature of any construction activities and the fact that construction activities and future development would be required to adhere to the County and City noise ordinance, the impact of extreme noise levels from any potential construction activities is considered less than significant. Noise from the proposed use will not be extreme as the activities are limited and regulated by the Garden Grove Municipal Code. Furthermore, activities that are likely to increase noise within the proposed development, have been addressed in the General Plan EIR.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Response (e-f): The project site is not located within an airport land use plan, within two-miles of a public airport or public use airport, or within the vicinity of private airstrip. No impacts are anticipated.

XIII. POPULATION AND HOUSING*

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

- | | Potentially Significant Impact | Potentially Significant Unless Mitigated | Less than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|--------------------------|
| b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Response (a-c): Due to the nature of the proposed development, the project will not increase population and housing in the immediate area, other than temporary transient occupancy. There are four single-family residential units existing on the site that will be displaced as a result of the proposed development. These residential units are not designated as affordable housing. This minimal displacement will not necessitate the construction of replacement housing elsewhere. In addition, the proposed project is located in a highly urbanized area and all infrastructure is already in place. The proposed development will be designed to be in conformance with the development standards for the proposed zoning designation of hotel development. The development of the project is within the thresholds that were considered and addressed within the General Plan EIR.

XIV. PUBLIC SERVICES*

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Fire protection?

Response: The City of Garden Grove Fire Department provides emergency response service to the project area. The project is not likely to induce significant growth and will not result in a substantial new demand for fire protection services. New construction, however, will occur, and due to the nature of the uses, there will be a slight increase in need for fire protection services. The development will be required to comply with the conditions of approval of the Fire Department including, but not limited to, providing a fire sprinkler system, ensuring clearly unobstructed emergency paths of travel, providing and maintaining a water storage system for fire fighting purposes, and compliance with other regulations per the Fire Department's specifications that address this type of development.

Police protection?

Response: The Garden Grove Police Department provides police protection in the area. The project is not likely to induce growth beyond that planned for the site and will not result in substantial new demand for police protection services. There are no anticipated physical changes within the area that would significantly affect police protection. However, due to the nature of the proposed use, it is likely that there will be minimal increased demand for police protection. The development shall comply with the conditions of approval of the Police Department.

Schools?

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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Response: The proposed development is a transient use that will not increase the number of children within the Garden Grove Unified School District. This development is subject to the applied mitigation school fees currently applied to new development in the City by the Garden Grove Unified School District. The Developer shall provide the Community Development Department proof of payment of appropriate school fees, adopted by the Garden Grove Unified School District, prior to the issuance of building permits in accordance with the provisions of state law.

Parks?

Response: The proposed development is not located on a site that was previously developed as a park or is a site that is designated for parkland. The project will not require the creation of additional parkland. The proposed project would not result in population growth which could otherwise increase the burden on parks and/or other recreational facilities. Additionally, the developer is required to pay park in-lieu fees that are applied to the City's parks and recreation programs.

Other public facilities?

Response: It is not likely that the project will increase demands on other governmental services.

XV. RECREATION*

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that the substantial physical deterioration of the facility would occur or be accelerated?

Response: The proposed project will provide private recreational amenities on the premises for guests, such as an outdoor pool and/or indoor recreation spaces. No increase in use of the existing parks or other public recreational facilities that are located within the immediate area are anticipated that could substantially cause the deterioration of an existing park or other recreational facilities. Additionally, the developer is required to pay park in-lieu fees that are applied to the City's parks and recreation programs.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Response: The proposed project will provide on-site recreational amenities such as outdoor pool and/or indoor recreation spaces, which will be constructed concurrently with the buildings. When specific project details are developed and available during the entitlement phase of the project, the proposed outdoor recreational facilities will be evaluated for possible impacts to adjacent uses, such as noise, and all appropriate mitigation measures will be established to reduce possible impacts.

XVI. TRANSPORTATION*

Would the project:

a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit, and non-motorized

Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

- b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Response (a-d): The development is likely to increase vehicle trips and traffic congestion in the area, but not beyond the scope analyzed in the General Plan EIR. When specific project details are developed and available during the entitlement phase of the project, the applicant may be required to prepare a traffic analysis for the proposed project should the City's Traffic Engineer deem it appropriate due to the final layout and design of the project. Any future traffic analysis will include measures to mitigate any identified impacts and also include any significant traffic related improvements in order to facilitate the proposed development. This will include any increased traffic during the construction of the project, which are temporary in nature and typically do not create a significant impact. All projects involving construction in the public right-of-way will be required to submit a traffic safety plan to minimize traffic congestion.

- e. Result in inadequate emergency access?
- f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Response: Barriers for pedestrians or bicyclists may occur during the period of construction. If barriers are required, the applicant will be required to submit a traffic safety plan for review and approval by the City prior to the commencement of construction in the public right-of-way in order to ensure the safety of pedestrians and/or bicyclists.

XVII. UTILITIES AND SERVICE SYSTEMS*

Would the project:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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Response: As explained above, the project is required to implement the requirements of the Regional Water Quality Control Board.

- b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Response: see (e) below.

- c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Response: The project area is a highly urbanized area and storm water drainage facilities are in place and adequate to meet the needs for this area including those generated by this project.

- d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Response: When specific project details are developed and available during the entitlement phase of the project, a Water Supply Assessment Study (WSA) will be prepared to calculate if the project complies with the thresholds established by Senate Bill 610.

- e. Result in determination by the wastewater treatment provider, which serves or may service the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Response (b, e): The Garden Grove Sanitary District provides sewer service to the City of Garden Grove. The Garden Grove Sanitary District and the Orange County Sanitation District charge fees for sewerage connection. These fees are required to construct new sewer infrastructure and/or incremental expansions to the existing sewerage system to accommodate individual development. New developments are not permitted to connect to sewer systems unless there is sufficient capacity to accommodate the new development. Therefore, new development is not permitted to exceed the available capacity of wastewater conveyance systems or treatment facilities. The Garden Grove Sanitary District has determined that the existing infrastructure and wastewater treatment capacity is sufficient to meet projected increased sewage flows from the proposed project. No new or expanded wastewater treatment facilities would be required.

- f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

- g. Comply with federal, state, and local statutes and regulations related to solid waste?

Response (f-g): Solid waste disposal services are administered by the Garden Grove Sanitary District. Collection services are provided via a contract with a private trash collection contractor. As part of the development of this site, the overall solid waste disposal system will be coordinated with the Garden Grove Sanitary District

Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact	No Impact
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and their contractor for specific matters such as trash pick-up times, number and types of trash receptacles, and the locations of such trash receptacles.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?
- b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?
- c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

XIX. EARLIER ANALYSIS

Earlier analyses may have been used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D).

a. EARLIER ANALYSIS:

1. The City of Garden Grove General Plan Update.
2. The City of Garden Grove Existing Conditions Report.
3. The City of Garden Grove Final Environmental Impact Report for the General Plan Update, State Clearinghouse No. 2008041079, August 2008.
4. Title 9 of the Garden Grove Municipal Code.
5. Redevelopment Project Plan and subsequent EIR dated July 2, 2002, Resolution No 629.
6. Garden Grove Sanitary District Sewer Deficiency Analysis and Sewer Improvement Master Plan.

b. IMPACTS ADEQUATELY ADDRESSED:

1. Land Use
2. Population and Housing
3. Geophysical
4. Water
5. Air Quality
6. Transportation
7. Noise

8. Public Services
9. Aesthetics
10. Green House Gas Emissions

c. MITIGATION MEASURES:

The project is consistent with the analysis that was done within The City of Garden Grove Final Environmental Impact Report for the General Plan 2030 Update, State Clearinghouse No. 2008041079, and Redevelopment Project Plan and EIR, July 2, 2002. The project will be required to adhere to all mitigation measures as stated within the current General Plan's EIR, Redevelopment Plan EIR, as well as conditions of approval and any future studies that will be required during the design phase and entitlement review process for the project.

FW: hi

Subject: FW: hi
From: Matthew Reid <matt.reid@landanddesign.com>
Date: Wed, 06 Jul 2011 12:26:48 -0700
To: Greg Blodgett <Greg1@ci.garden-grove.ca.us>
CC: Dave Rose <drose3@charter.net>, AIA Fong <gfong@GFAARCHITECTS.com>

Greg,
Why isn't AECOM using our latest site plan?

Matthew Reid

Land & Design, Inc.
8130 La Mesa Blvd | Suite 808 | La Mesa, CA 91942
619.335.5896 Google voice | 619.462.4144 fax
Skype – matthew.reid.ca
matt.reid@landanddesign.com

From: AIA Fong <gfong@GFAARCHITECTS.com>
Date: Wed, 6 Jul 2011 12:02:01 -0700
To: Matthew Reid <matt.reid@landanddesign.com>
Cc: Dave Rose <drose3@charter.net>, Michael Labasan <mlabasan@GFAARCHITECTS.com>
Subject: FW: hi

Matt,

Jayna Morgan at AECOM has requested that we send her our site plan dated 2-23-11 for the environmental report. Why is she not using our latest site plan dated 5-31-11? Please give us your authorization to send her our site plan and which one?

Thanks,

Gene Fong, AIA
President
gfong@gfaarchitects.com

GENE FONG ASSOCIATES | 1130 Westwood Blvd. Los Angeles, CA 90024 | T.310.209.7520 | F.310.209.7516

From: Morgan, Jayna [<mailto:Jayna.Morgan@aecom.com>]
Sent: Wednesday, July 06, 2011 11:13 AM
To: Gene Fong
Subject: RE: hi

From: Morgan, Jayna
Sent: Tuesday, July 05, 2011 3:12 PM
To: 'GFong@GFArchitects.com'
Subject: International West- Site Plan Request

Hi Gene,

Thank you for speaking with me regarding obtaining a CADD and PDF of your site plan for the above referenced project.

As I stated, I would like to include the latest site plan in the traffic study and WSA- Water Supply Assessment for the project.

I look forward to hearing from you.

Jayna Morgan
AECOM
T. 949.660.8044

From: Gene Fong [<mailto:gfong@GFAARCHITECTS.com>]
Sent: Wednesday, July 06, 2011 11:09 AM
To: Morgan, Jayna
Subject: hi

Testing

Gene Fong, AIA
President
gfong@gfaarchitects.com

GENE FONG ASSOCIATES | 1130 Westwood Blvd. Los Angeles, CA 90024 | T.310.209.7520 | F.310.209.7516

Subject: AECOM Irvine address

From: "Morgan, Jayna" <Jayna.Morgan@aecom.com>

Date: Wed, 6 Jul 2011 15:27:41 -0700

To: Matthew Reid <matt.reid@landanddesign.com>

CC: Greg Blodgett <greg1@ci.garden-grove.ca.us>

Hi Again,

Please see the address below. I have also invited our traffic engineer to attend the meeting.

I look forward to meeting you in person.

See you on the 14th.

Jayna Morgan

Environmental Planner

Design + Planning

jayna.morgan@aecom.com

AECOM

2737 Campus Drive, Irvine, CA 92612 USA

T 949.660.8044 F 949.660.1046

www.aecom.com

Subject: Fwd: Part 2 of 2: The Garden Grove "C" Hotel and Restaurant Traffic Impact Study (JN:0762-2011-01/RK9011)
From: Greg Blodgett <greg1@ci.garden-grove.ca.us>
Date: Wed, 6 Jul 2011 15:44:39 -0700 (PDT)
To: Matthew Reid <matt.reid@landanddesign.com>
CC: Paul Guerrero <paulg@ci.garden-grove.ca.us>

Greg Blodgett
SR Project Manager
City of Garden Grove
Economic Development

----- Forwarded Message -----

From: "Jayna Morgan" <Jayna.Morgan@aecom.com>
To: "Karl Hill" <karlh@garden-grove.org>
Cc: "greg1" <greg1@garden-grove.org>
Sent: Thursday, June 23, 2011 11:04:46 AM
Subject: FW: Part 2 of 2: The Garden Grove "C" Hotel and Restaurant Traffic Impact Study (JN:0762-2011-01/RK9011)

Hi Again,

Here is part 2 of the Traffic Study.

Jayna Morgan

AECOM

T. 949.660.8044

From: Nancy Quach [mailto:nq@rkengineer.com]
Sent: Wednesday, May 18, 2011 5:00 PM
To: greg1@ci.garden-grove.ca.us
Cc: Morgan, Jayna; Bob Kahn; Rogier Goedecke
Subject: Part 2 of 2: The Garden Grove "C" Hotel and Restaurant Traffic Impact Study (JN:0762-2011-01/RK9011)

Dear Mr. Blodgett:

Please find the attached PDF of Part 2: Garden Grove Site "C" Hotel and Restaurant Traffic Impact Study, City of Garden Grove (JN:0762-2011-01/RK9011). If you would

like hardcopies of the report, please feel free to contact us at (949) 474-0809 or via e-mail. We would be happy to send them out to you.

If you have any questions, please do not hesitate to call us at (949) 474-0809.

We have enjoyed teaming with you on this project and look forward to partnering with you on future projects.

Kind regards,

Nancy Quach
Administrative Assistant

transportation planning / traffic engineering & design
acoustical engineering / community traffic calming
4000 Westerly Place, Suite 280
Newport Beach, CA 92660
tel. 949.474.0809
fax. 949.474.0902
www.rkengineer.com

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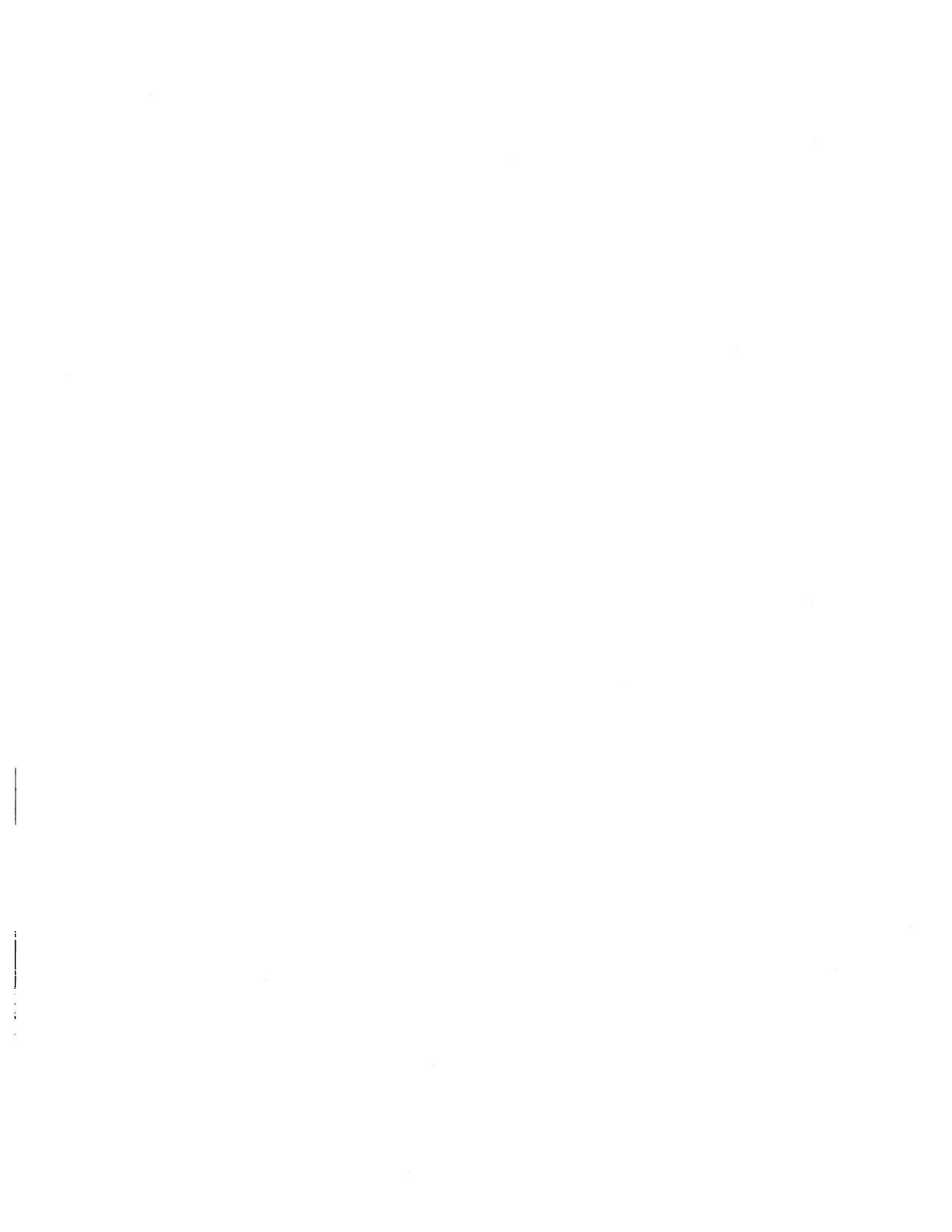


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RK9011 (Part 2).pdf	Content-Description: RK9011 (Part 2).pdf
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	Content-Encoding: base64

Appendices



Appendix A

Traffic Count Worksheets

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: West St

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: WEDNESDAY

PROJECT# 10-5173-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	
7:00 AM	6	51	13	32	60	10	13	180	8	14	76	15	478
7:15 AM	9	70	16	28	58	11	24	245	18	12	100	20	611
7:30 AM	18	74	26	48	83	19	24	242	22	22	107	33	718
7:45 AM	13	87	35	36	66	15	51	287	19	18	155	25	807
8:00 AM	8	64	22	35	63	27	45	259	13	13	101	28	678
8:15 AM	9	44	32	37	69	24	18	249	10	13	98	31	634
8:30 AM	7	44	13	22	35	11	17	202	5	10	81	15	462
8:45 AM	6	52	16	16	45	10	11	160	5	12	95	18	446
TOTAL VOLUMES =	76	486	173	254	479	127	203	1824	100	114	813	185	4834

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	48	269	115	156	281	85	138	1037	64	66	461	117	2837
PEAK HR. FACTOR:		0.800			0.870			0.868			0.813		0.879

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: West St

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: WEDNESDAY

PROJECT# 10-5173-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	
4:00 PM	26	90	21	34	73	20	18	112	11	23	168	39	635
4:15 PM	15	76	19	26	65	28	17	188	8	19	209	41	711
4:30 PM	19	82	21	26	81	24	15	140	10	27	229	28	702
4:45 PM	31	92	13	28	77	22	18	184	12	31	233	40	781
5:00 PM	19	92	15	38	90	22	19	130	12	26	211	28	702
5:15 PM	20	66	21	31	55	18	16	197	15	30	250	54	773
5:30 PM	15	102	24	33	90	21	24	153	14	30	251	37	794
5:45 PM	25	88	27	28	69	23	14	182	20	31	230	35	772
TOTAL VOLUMES =	NL 170	NT 688	NR 161	SL 244	ST 600	SR 178	EL 141	ET 1286	ER 102	WL 217	WT 1781	WR 302	TOTAL 5870

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	85	352	73	130	312	83	77	664	53	117	945	159	3050
PEAK HR. FACTOR:		0.904			0.875			0.871			0.914		0.960

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: West St

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Lampson Ave

DAY: WEDNESDAY

PROJECT# 10-5173-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	
7:00 AM	10	55	9	12	58	5	12	37	9	6	19	9	241
7:15 AM	5	89	14	14	70	9	15	49	13	10	29	11	328
7:30 AM	18	124	25	19	98	32	31	57	15	25	33	24	501
7:45 AM	8	97	21	17	103	33	23	58	23	20	44	24	471
8:00 AM	7	77	14	11	62	5	15	55	26	11	32	13	328
8:15 AM	5	66	18	15	76	8	8	58	17	12	38	11	332
8:30 AM	4	54	5	11	45	7	7	54	11	9	23	4	234
8:45 AM	4	49	7	4	59	7	7	53	10	9	25	5	239
TOTAL VOLUMES =	NL 61	NT 611	NR 113	SL 103	ST 571	SR 106	EL 118	ET 421	ER 124	WL 102	WT 243	WR 101	TOTAL 2674

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	38	364	78	62	339	78	77	228	81	68	147	72	1632
PEAK HR. FACTOR:		0.719			0.783			0.928			0.815		0.814

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: West St

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Lampson Ave

DAY: WEDNESDAY

PROJECT# 10-5173-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	2	0	1	2	0	1	1	1	1	1	0	
4:00 PM	9	97	18	5	84	2	15	59	4	11	55	22	381
4:15 PM	22	85	14	7	73	8	13	44	15	13	54	22	370
4:30 PM	14	94	22	11	77	13	6	54	10	14	66	18	399
4:45 PM	11	108	21	12	89	13	11	44	14	19	80	27	449
5:00 PM	15	106	22	9	69	16	13	62	16	13	73	35	449
5:15 PM	19	100	14	19	65	16	11	52	14	14	82	27	433
5:30 PM	15	118	13	16	105	12	12	54	6	14	89	25	479
5:45 PM	22	93	18	13	93	8	8	49	10	17	61	20	412
TOTAL VOLUMES =	127	801	142	92	655	88	89	418	89	115	560	196	3372

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	60	432	70	56	328	57	47	212	50	60	324	114	1810
PEAK HR. FACTOR:		0.962			0.829			0.849			0.973		0.945

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Katella Ave

DAY: WEDNESDAY

PROJECT# 10-5173-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	
7:00 AM	19	104	25	16	90	25	29	220	20	49	150	18	765
7:15 AM	21	101	50	10	119	40	27	245	18	43	209	10	893
7:30 AM	25	147	57	12	113	46	34	298	38	54	207	14	1045
7:45 AM	29	166	76	31	153	50	41	309	33	43	170	14	1115
8:00 AM	26	115	60	15	129	47	31	253	33	46	183	19	957
8:15 AM	26	114	44	29	107	49	40	266	23	56	157	21	932
8:30 AM	24	115	45	28	124	56	44	183	42	54	165	23	903
8:45 AM	22	115	43	31	114	70	22	203	34	37	143	15	849
TOTAL VOLUMES =	192	977	400	172	949	383	268	1977	241	382	1384	134	7459

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	106	542	237	87	502	192	146	1126	127	199	717	68	4049
PEAK HR. FACTOR:	0.816			0.834			0.913			0.895			0.908

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Katella Ave

DAY: WEDNESDAY

PROJECT# 10-5173-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	
4:00 PM	36	209	77	25	142	78	67	227	43	60	255	30	1249
4:15 PM	30	180	66	25	138	96	62	212	42	50	256	28	1185
4:30 PM	42	205	78	21	168	77	70	191	33	68	310	17	1280
4:45 PM	44	203	55	25	138	71	67	237	36	53	287	23	1239
5:00 PM	40	165	49	25	136	76	52	227	43	67	330	37	1247
5:15 PM	26	186	70	12	163	76	60	234	35	38	311	26	1237
5:30 PM	40	207	72	19	144	91	67	215	55	61	327	20	1318
5:45 PM	42	186	68	17	149	88	45	233	39	54	257	18	1196
TOTAL VOLUMES =	300	1541	535	169	1178	653	490	1776	326	451	2333	199	9951

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	150	761	246	81	581	314	246	913	169	219	1255	106	5041
PEAK HR. FACTOR:		0.907			0.961			0.976			0.910		0.956

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Orangewood Ave

DAY: WEDNESDAY

PROJECT# 10-5173-004

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	1	2	0	1	2	0	
7:00 AM	12	120	15	11	105	10	11	108	6	19	55	17	489
7:15 AM	10	160	25	10	127	3	19	138	13	35	75	14	629
7:30 AM	11	217	13	15	146	8	13	161	16	20	95	29	744
7:45 AM	16	238	26	14	148	12	17	167	15	26	54	21	754
8:00 AM	10	170	25	17	150	6	11	181	8	16	73	26	693
8:15 AM	12	179	35	14	122	9	8	116	17	24	36	17	589
8:30 AM	11	162	24	16	148	5	8	127	7	23	54	23	608
8:45 AM	4	155	21	23	132	9	12	87	14	14	53	16	540
TOTAL VOLUMES =	NL 86	NT 1401	NR 184	SL 120	ST 1078	SR 62	EL 99	ET 1085	ER 96	WL 177	WT 495	WR 163	TOTAL 5046

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	47	785	89	56	571	29	60	647	52	97	297	90	2820
PEAK HR. FACTOR:		0.822			0.943			0.949			0.840		0.935

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Orangewood Ave

DAY: WEDNESDAY

PROJECT# 10-5173-004

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	1	2	0	1	2	0	
4:00 PM	27	243	45	19	220	15	10	81	12	31	105	17	825
4:15 PM	17	206	29	22	203	21	17	77	17	41	121	19	790
4:30 PM	21	260	43	30	246	14	14	69	19	37	118	22	893
4:45 PM	24	239	42	29	206	12	14	80	17	43	119	31	856
5:00 PM	26	222	25	32	222	8	17	70	15	36	153	24	850
5:15 PM	14	255	58	26	234	15	10	86	21	43	149	19	930
5:30 PM	29	296	49	30	236	12	12	89	17	52	152	20	994
5:45 PM	32	239	37	21	210	15	10	93	19	38	147	25	886
TOTAL VOLUMES =	190	1960	328	209	1777	112	104	645	137	321	1064	177	7024

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	101	1012	169	109	902	50	49	338	72	169	601	88	3660
PEAK HR. FACTOR:		0.857			0.954			0.941			0.958		0.921
CONTROL:	Signalized												

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: WEDNESDAY

PROJECT# 10-5173-005

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	3	1	2	3	1	2	2	1	2	2	1	
7:00 AM	13	131	20	10	115	26	29	232	18	15	72	25	706
7:15 AM	16	144	33	16	121	24	32	244	16	26	96	24	792
7:30 AM	26	163	30	25	122	30	37	269	20	21	128	27	898
7:45 AM	31	187	31	31	141	26	46	212	33	10	122	23	893
8:00 AM	14	124	31	25	112	17	42	249	36	23	98	16	787
8:15 AM	24	168	28	31	129	24	32	251	27	15	93	19	841
8:30 AM	16	127	31	28	116	21	36	192	24	20	88	20	719
8:45 AM	15	119	29	19	102	22	28	143	31	16	69	18	611
TOTAL VOLUMES =	NL 155	NT 1163	NR 233	SL 185	ST 958	SR 190	EL 282	ET 1792	ER 205	WL 146	WT 766	WR 172	TOTAL 6247

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	95	642	120	112	504	97	157	981	116	69	441	85	3419
PEAK HR. FACTOR:		0.860			0.900			0.959			0.845		0.952

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: WEDNESDAY

PROJECT# 10-5173-005

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	3	1	2	3	1	2	2	1	2	2	1	
4:00 PM	22	190	42	41	159	37	37	144	20	41	206	23	962
4:15 PM	29	198	35	47	162	57	28	149	23	31	157	33	949
4:30 PM	33	208	42	34	188	45	41	151	19	37	237	34	1069
4:45 PM	38	249	43	45	169	63	44	151	23	42	182	38	1087
5:00 PM	39	208	47	41	141	55	34	150	33	23	204	33	1008
5:15 PM	41	249	45	56	174	66	49	158	24	52	212	47	1173
5:30 PM	44	227	43	33	161	55	40	146	21	53	267	55	1145
5:45 PM	44	234	51	47	193	41	48	171	19	37	203	53	1141
TOTAL VOLUMES =	290	1763	348	344	1347	419	321	1220	182	316	1668	316	8534

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	168	918	186	177	669	217	171	625	97	165	886	188	4467
PEAK HR. FACTOR:		0.949			0.898			0.938			0.826		0.952

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 04/20/2011

LOCATION: City of Garden Grove

E-W STREET: Sheraton Project Access

DAY: WEDNESDAY

PROJECT# 11-1044-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	0	1	0	0	1	0	
7:00 AM	1	146		0	140	0				5			292
7:15 AM	3	201		1	164	1				4			374
7:30 AM	2	263		0	192	4				3			464
7:45 AM	1	246		2	196	3				7			455
8:00 AM	4	200		1	195	9				10			419
8:15 AM	2	195		0	188	1				9			395
8:30 AM	1	157		1	211	5				5			380
8:45 AM	3	200		0	171	5				7			386
TOTAL VOLUMES =	17	1608	0	5	1457	28	0	0	50	0	0	0	3165

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	9	904	0	3	771	17	0	0	29	0	0	0	1733
PEAK HR. FACTOR:		0.861			0.965			0.725			0.000		0.934

CONTROL: 1-Way Stop EB

NL & SL are U-Turns movements

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 04/20/2011

LOCATION: City of Garden Grove

E-W STREET: Sheraton Project Access

DAY: WEDNESDAY

PROJECT# 11-1044-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	0	1	0	0	1	0	
4:00 PM	4	307		3	205	1			4				524
4:15 PM	4	265		3	250	7			0				529
4:30 PM	2	340		1	249	7			3				602
4:45 PM	6	310		2	250	9			4				581
5:00 PM	2	361		1	226	7			6				603
5:15 PM	3	340		1	255	8			3				610
5:30 PM	4	367		2	238	8			8				627
5:45 PM	2	316		1	238	2			5				564
TOTAL VOLUMES =	27	2606	0	14	1911	49	0	0	33	0	0	0	4640

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES =	15	1378	0	6	969	32	0	0	21	0	0	0	2421
PEAK HR. FACTOR:		0.939			0.954			0.656			0.000		0.965

CONTROL: 1-Way Stop EB

NL & SL are U-Turns movements

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 04/20/2011

LOCATION: City of Garden Grove

E-W STREET: Twintree Ave

DAY: WEDNESDAY

PROJECT# 11-1044-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	
7:00 AM	9	143	3	2	149	7	6	0	10	4	2	3	338
7:15 AM	0	190	4	1	159	2	4	1	9	6	1	7	384
7:30 AM	4	252	3	0	190	0	4	0	15	3	2	7	480
7:45 AM	7	231	2	2	192	3	6	1	6	2	2	2	456
8:00 AM	6	201	4	2	194	3	3	1	7	4	3	6	434
8:15 AM	3	173	2	4	187	1	2	0	3	8	1	3	387
8:30 AM	6	154	5	0	206	2	2	1	11	5	2	5	399
8:45 AM	4	187	1	3	171	2	3	0	10	0	0	5	386
TOTAL VOLUMES =	39	1531	24	14	1448	20	30	4	71	32	13	38	3264

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	20	857	11	8	763	7	15	2	31	17	8	18	1757
PEAK HR. FACTOR:		0.857			0.977			0.632			0.827		0.915

CONTROL: 2-Way Stop EB & WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 04/20/2011

LOCATION: City of Garden Grove

E-W STREET: Twintree Ave

DAY: WEDNESDAY

PROJECT# 11-1044-002

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	0	1	0	0	1	0	
4:00 PM	8	297	6	6	194	5	1	0	4	5	0	4	530
4:15 PM	6	255	16	11	232	2	2	0	4	4	1	10	543
4:30 PM	4	339	11	11	236	3	1	1	8	6	1	7	628
4:45 PM	6	298	11	4	237	5	4	1	6	2	0	8	582
5:00 PM	6	337	20	7	222	2	1	0	3	4	0	10	612
5:15 PM	8	337	14	11	238	8	3	1	2	4	2	12	640
5:30 PM	5	342	18	5	226	4	6	1	3	6	1	9	626
5:45 PM	12	299	12	13	234	7	7	1	10	4	1	14	614
TOTAL VOLUMES =	55	2504	108	68	1819	36	25	5	40	35	6	74	4775

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	31	1315	64	36	920	21	17	3	18	18	4	45	2492
PEAK HR. FACTOR:		0.966			0.950			0.528			0.882		0.973

CONTROL: 2-Way Stop EB & WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Lampson Ave

DAY: WEDNESDAY

PROJECT# 10-5173-006

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	
7:00 AM	18	135	18	10	115	6	4	45	8	19	23	9	410
7:15 AM	14	153	15	11	156	3	2	59	9	23	33	11	489
7:30 AM	13	227	31	18	182	4	10	52	9	27	41	15	629
7:45 AM	18	221	28	12	159	5	13	91	18	24	46	21	656
8:00 AM	19	218	28	13	198	6	9	58	13	21	30	12	625
8:15 AM	16	159	25	16	157	5	14	78	24	18	35	15	562
8:30 AM	11	165	26	11	151	2	15	43	15	20	19	11	489
8:45 AM	11	116	23	14	113	2	7	40	21	25	29	6	407
TOTAL VOLUMES =	120	1394	194	105	1231	33	74	466	117	177	256	100	4267

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	66	825	112	59	696	20	46	279	64	90	152	63	2472
PEAK HR. FACTOR:		0.925			0.893			0.797			0.838		0.942

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Lampson Ave

DAY: WEDNESDAY

PROJECT# 10-5173-006

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	1	1	0	1	1	0	
4:00 PM	17	264	32	17	211	16	15	36	7	33	62	10	720
4:15 PM	18	279	44	7	187	6	12	39	13	22	69	12	708
4:30 PM	16	254	34	14	260	11	16	57	18	29	64	17	790
4:45 PM	21	279	28	10	198	16	14	42	14	24	91	21	758
5:00 PM	25	261	45	13	175	13	18	50	14	31	85	10	740
5:15 PM	23	287	35	11	200	10	13	54	21	34	82	9	779
5:30 PM	27	324	36	10	218	13	10	50	23	42	96	15	864
5:45 PM	22	286	33	16	196	16	21	48	16	21	62	20	757
TOTAL VOLUMES =	169	2234	287	98	1645	101	119	376	126	236	611	114	6116

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	96	1151	144	44	791	52	55	196	72	131	354	55	3141
PEAK HR. FACTOR:	0.899			0.920			0.918			0.882			0.909

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Blue Spruce Ave

DAY: WEDNESDAY

PROJECT# 10-5173-007

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	3	0	1	3	0	0	0	0	0	1	0	
7:00 AM		165	5	1	127					5		7	310
7:15 AM		183	3	1	199					10		7	403
7:30 AM		285	8	1	221					15		10	540
7:45 AM		269	10	1	203					6		8	497
8:00 AM		247	12	5	242					10		10	526
8:15 AM		194	6	4	189					3		8	404
8:30 AM		188	4	2	183					6		6	389
8:45 AM		149	3	3	182					8		3	348
TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1680	51	18	1546	0	0	0	0	63	0	59	3417

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	995	36	11	855	0	0	0	0	34	0	36	1967
PEAK HR. FACTOR:		0.880			0.877			0.000			0.700		0.911

CONTROL: 1-Way Stop WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Blue Spruce Ave

DAY: WEDNESDAY

PROJECT# 10-5173-007

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	3	0	1	3	0	0	0	0	0	1	0	
4:00 PM		331	8	2	248					8		3	600
4:15 PM		350	15	8	215					6		4	598
4:30 PM		350	11	6	287					5		5	664
4:45 PM		297	15	0	257					8		11	588
5:00 PM		358	16	4	237					4		7	626
5:15 PM		336	13	9	252					14		8	632
5:30 PM		396	21	6	268					8		8	707
5:45 PM		354	13	4	241					8		6	626
TOTAL VOLUMES =	0	2772	112	39	2005	0	0	0	0	61	0	52	5041

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	0	1444	63	23	998	0	0	0	0	34	0	29	2591
PEAK HR. FACTOR:		0.903			0.932			0.000			0.716		0.916

CONTROL: 1-Way Stop WB

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 09/01/2010

LOCATION: City of Garden Grove

E-W STREET: Palm St

DAY: WEDNESDAY

PROJECT# 10-1075-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	0	1	0	0.5	0.5	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	140	1	15	126	3	9	5	1	3	8	8	319
7:15 AM	3	177	1	18	180	5	6	7	0	0	2	15	414
7:30 AM	2	178	1	16	166	10	16	5	1	2	5	31	433
7:45 AM	2	233	1	24	167	9	8	5	4	2	10	20	485
8:00 AM	6	201	8	30	172	10	14	0	1	2	10	20	474
8:15 AM	4	178	2	23	150	13	13	8	7	0	10	28	436
8:30 AM	4	149	9	22	151	13	8	4	3	1	16	20	400
8:45 AM	7	167	3	23	152	15	15	8	4	4	12	18	428
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	28	1423	26	171	1264	78	89	42	21	14	73	160	3389

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	14	790	12	93	655	42	51	18	13	6	35	99	1828
PEAK HR. FACTOR:		0.864			0.932			0.732			0.921		0.942

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 09/01/2010

LOCATION: City of Garden Grove

E-W STREET: Palm St

DAY: WEDNESDAY

PROJECT# 10-1075-001

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	0	1	0	0.5	0.5	1	
4:00 PM	3	304	5	26	210	37	29	10	15	0	22	38	699
4:15 PM	9	288	5	16	210	24	29	9	7	3	27	44	671
4:30 PM	4	299	8	20	217	27	27	14	6	0	16	33	671
4:45 PM	15	281	7	12	198	34	30	10	12	1	22	38	660
5:00 PM	3	298	8	23	215	33	29	8	12	3	14	40	686
5:15 PM	13	312	7	16	220	32	49	17	8	4	10	44	732
5:30 PM	6	302	5	33	200	23	35	6	7	2	16	24	659
5:45 PM	5	297	5	23	179	28	34	8	10	0	18	42	649
TOTAL VOLUMES =	58	2381	50	169	1649	238	262	82	77	13	145	303	5427

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	35	1190	30	71	850	126	135	49	38	8	62	155	2749
PEAK HR. FACTOR:		0.945			0.966			0.750			0.922		0.939

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Garden Grove Blvd

DAY: WEDNESDAY

PROJECT# 10-5173-008

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	3	1	1	3	1	2	3	0	2	3	0	
7:00 AM	32	132	34	17	134	7	22	89	64	22	69	8	630
7:15 AM	43	150	29	15	183	17	26	97	54	28	68	10	720
7:30 AM	48	223	49	17	208	15	47	126	77	43	85	12	950
7:45 AM	42	244	64	21	223	25	53	145	86	38	89	14	1044
8:00 AM	48	192	46	25	163	21	57	130	62	33	80	8	865
8:15 AM	51	180	34	23	163	30	41	157	56	35	70	14	854
8:30 AM	40	159	35	20	151	15	42	132	52	30	85	8	769
8:45 AM	48	130	40	24	140	18	29	98	38	18	72	6	661
TOTAL VOLUMES =	352	1410	331	162	1365	148	317	974	489	247	618	80	6493

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	189	839	193	86	757	91	198	558	281	149	324	48	3713
PEAK HR. FACTOR:		0.872			0.868			0.913			0.924		0.889

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Garden Grove Blvd

DAY: WEDNESDAY

PROJECT# 10-5173-008

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	3	1	1	3	1	2	3	0	2	3	0	
4:00 PM	78	235	47	30	183	32	75	162	47	60	196	27	1172
4:15 PM	76	324	51	24	189	39	62	137	48	49	169	21	1189
4:30 PM	82	259	46	13	227	45	65	161	50	68	178	28	1222
4:45 PM	77	271	41	35	212	36	61	123	54	50	168	26	1154
5:00 PM	93	273	53	20	197	37	74	136	44	57	197	36	1217
5:15 PM	74	302	50	19	222	43	68	156	39	53	184	23	1233
5:30 PM	81	278	57	24	198	31	79	137	47	55	214	14	1215
5:45 PM	93	285	63	30	205	39	70	148	66	41	168	18	1226
TOTAL VOLUMES =	654	2227	408	195	1633	302	554	1160	395	433	1474	193	9628

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	341	1138	223	93	822	150	291	577	196	206	763	91	4891
PEAK HR. FACTOR:	0.965			0.938			0.937			0.914			0.992

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

CA-22 WB Off-Ramp-Banner

E-W STREET: Dr

DAY: WEDNESDAY

PROJECT# 10-5173-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 3	NR 1	SL 0	ST 3	SR 0	EL 0	ET 1	ER 0	WL 1.5	WT 0.5	WR 1	TOTAL
7:00 AM	7	168	111		207	9	10		25	188	11	20	756
7:15 AM	3	222	105		286	2	8		34	175	19	22	876
7:30 AM	12	291	87		321	8	14		36	207	13	25	1014
7:45 AM	12	275	146		317	6	19		32	197	18	30	1052
8:00 AM	4	332	84		285	6	16		20	225	15	20	1007
8:15 AM	9	251	96		264	9	12		18	187	9	34	889
8:30 AM	7	197	93		234	2	13		22	188	10	29	795
8:45 AM	8	217	56		247	6	15		15	186	6	26	782
TOTAL VOLUMES =	62	1953	778	0	2161	48	107	0	202	1553	101	206	7171

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	37	1149	413	0	1187	29	61	0	106	816	55	109	3962
PEAK HR. FACTOR:		0.923			0.924			0.819			0.942		0.942

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

CA-22 WB Off-Ramp-Banner

E-W STREET: Dr

DAY: WEDNESDAY

PROJECT# 10-5173-009

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	1	0	3	0	0	1	0	1.5	0.5	1	
4:00 PM	21	336	72		316	12	23		22	155	31	58	1046
4:15 PM	16	352	86		284	10	27		18	171	25	46	1035
4:30 PM	23	345	97		309	14	10		20	168	22	40	1048
4:45 PM	19	325	166		325	11	17		22	167	29	42	1123
5:00 PM	14	356	97		295	11	27		15	144	24	47	1030
5:15 PM	21	416	70		349	15	25		13	152	22	45	1128
5:30 PM	16	414	104		316	15	17		19	145	24	37	1107
5:45 PM	13	463	85		286	12	10		12	126	30	32	1069
TOTAL VOLUMES =	143	3007	777	0	2480	100	156	0	141	1228	207	347	8586

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	70	1511	437	0	1285	52	86	0	69	608	99	171	4388
PEAK HR. FACTOR:		0.945			0.918			0.923			0.922		0.973

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Trask Ave

DAY: WEDNESDAY

PROJECT# 10-5173-010

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	1	1	3	0	1	2	1	1	2	1	
7:00 AM	7	149	100	72	283	12	16	107	104	13	34	121	1018
7:15 AM	12	176	114	58	331	19	15	137	90	15	32	139	1138
7:30 AM	11	204	106	98	338	14	29	145	118	19	48	157	1287
7:45 AM	22	230	100	113	379	16	22	174	96	37	108	181	1478
8:00 AM	8	180	91	70	337	9	24	134	111	28	97	216	1305
8:15 AM	9	188	78	57	372	19	34	108	103	14	33	134	1149
8:30 AM	11	177	97	65	281	20	17	104	102	13	43	103	1033
8:45 AM	13	162	97	61	318	23	31	78	108	27	27	88	1033
TOTAL VOLUMES =	93	1466	783	594	2639	132	188	987	832	166	422	1139	9441

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	50	802	375	338	1426	58	109	561	428	98	286	688	5219
PEAK HR. FACTOR:		0.871			0.897			0.940			0.786		0.883

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Harbor Blvd

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Trask Ave

DAY: WEDNESDAY

PROJECT# 10-5173-010

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 3	NR 1	SL 1	ST 3	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	
4:00 PM	19	276	98	79	225	35	23	115	80	14	46	130	1140
4:15 PM	20	301	125	78	292	35	29	115	109	10	41	124	1279
4:30 PM	19	280	102	61	305	38	45	134	77	12	55	140	1268
4:45 PM	27	311	114	91	334	32	42	129	94	20	58	157	1409
5:00 PM	20	288	120	61	245	32	46	107	102	21	40	133	1215
5:15 PM	23	323	111	97	298	30	36	114	75	25	44	148	1324
5:30 PM	18	297	107	84	265	35	42	141	102	24	50	195	1360
5:45 PM	22	297	115	93	308	28	38	146	97	16	53	226	1439
TOTAL VOLUMES =	168	2373	892	644	2272	265	301	1001	736	142	387	1253	10434

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	83	1205	453	335	1116	125	162	508	376	86	187	702	5338
PEAK HR. FACTOR:		0.952		0.918			0.918			0.826			0.927

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: CA-22 EB On-Ramp

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Trask Ave

DAY: WEDNESDAY

PROJECT# 10-5173-011

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	0	0	1	2	1	0	0	2	0	
7:00 AM						49	139	112			105	13	418
7:15 AM						47	173	138			126	16	500
7:30 AM						51	189	163			169	14	586
7:45 AM						83	175	247			230	15	750
8:00 AM						69	104	210			257	24	664
8:15 AM						65	136	118			137	19	475
8:30 AM						57	167	103			122	13	462
8:45 AM						45	176	72			109	11	413
TOTAL VOLUMES =	0	0	0	0	0	466	1259	1163	0	0	1255	125	4268

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	0	0	0	0	0	250	641	758	0	0	782	69	2500
PEAK HR. FACTOR:		0.000			0.753			0.829			0.757		0.833

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: CA-22 EB On-Ramp DATE: 05/05/2010 LOCATION: City of Garden Grove
 E-W STREET: Trask Ave DAY: WEDNESDAY PROJECT# 10-5173-011

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	0	0	0	0	0	1	2	1	0	0	2	0	
4:00 PM						46	193	108			136	10	493
4:15 PM						53	223	113			136	9	534
4:30 PM						63	204	111			155	15	548
4:45 PM						89	201	139			165	17	611
5:00 PM						91	191	116			130	14	542
5:15 PM						77	206	116			153	15	567
5:30 PM						64	190	146			183	9	592
5:45 PM						63	237	138			202	10	650
TOTAL VOLUMES =	0	0	0	0	0	546	1645	987	0	0	1260	99	4537

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	0	0	0	0	0	295	824	516	0	0	668	48	2351
PEAK HR. FACTOR:		0.000			0.810			0.893			0.844		0.904

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Haster St

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: WEDNESDAY

PROJECT# 10-5173-012

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 1	WL 1	WT 2	WR 1	
7:00 AM	23	84	26	26	105	16	15	207	15	21	67	9	614
7:15 AM	38	86	30	31	112	19	16	262	19	11	87	9	720
7:30 AM	27	91	22	30	111	26	26	289	34	29	93	25	803
7:45 AM	36	116	30	26	123	24	25	247	20	17	105	10	779
8:00 AM	29	137	22	25	134	29	25	263	43	25	113	13	858
8:15 AM	34	113	20	34	114	19	28	232	26	12	93	14	739
8:30 AM	22	79	22	32	108	14	20	223	17	14	93	13	657
8:45 AM	21	72	18	26	90	23	22	164	20	12	86	11	565
TOTAL VOLUMES =	230	778	190	230	897	170	177	1887	194	141	737	104	5735

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	126	457	94	115	482	98	104	1031	123	83	404	62	3179
PEAK HR. FACTOR:		0.900			0.924			0.901			0.909		0.926

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Haster St

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: WEDNESDAY

PROJECT# 10-5173-012

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 1	WL 1	WT 2	WR 1	
4:00 PM	29	124	22	26	99	45	32	154	19	25	181	25	781
4:15 PM	23	125	25	25	115	32	35	188	29	29	225	21	872
4:30 PM	37	146	23	37	131	38	31	139	30	29	218	17	876
4:45 PM	39	132	27	24	111	32	43	175	27	21	221	35	887
5:00 PM	34	110	31	37	133	32	29	148	29	34	207	30	854
5:15 PM	34	124	26	39	153	48	35	191	25	31	274	29	1009
5:30 PM	43	136	31	35	128	32	23	156	22	41	292	30	969
5:45 PM	30	133	28	35	113	39	39	196	29	36	235	34	947
TOTAL VOLUMES =	269	1030	213	258	983	298	267	1347	210	246	1853	221	7195

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	141	503	116	146	527	151	126	691	105	142	1008	123	3779
PEAK HR. FACTOR:		0.905			0.858			0.873			0.877		0.936

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Haster St

DATE: 05/06/2010

LOCATION: City of Garden Grove

E-W STREET: Lampson Ave

DAY: THURSDAY

PROJECT# 10-5173-013

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	
7:00 AM	14	72	7	10	108	8	8	35	26	10	21	12	331
7:15 AM	20	97	7	18	132	10	12	35	26	20	18	13	408
7:30 AM	28	123	14	25	132	12	16	83	24	23	29	20	529
7:45 AM	36	133	26	39	126	22	20	70	37	25	25	34	593
8:00 AM	22	130	17	38	125	21	26	46	30	29	35	72	591
8:15 AM	26	107	16	23	122	24	23	61	34	15	35	28	514
8:30 AM	26	84	12	13	108	17	18	43	39	9	13	14	396
8:45 AM	21	89	13	8	116	12	12	36	35	11	14	11	378
TOTAL VOLUMES =	193	835	112	174	969	126	135	409	251	142	190	204	3740

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	112	493	73	125	505	79	85	260	125	92	124	154	2227
PEAK HR. FACTOR:		0.869			0.948			0.925			0.680		0.939

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Haster St

DATE: 05/06/2010

LOCATION: City of Garden Grove

E-W STREET: Lampson Ave

DAY: THURSDAY

PROJECT# 10-5173-013

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	
4:00 PM	30	103	10	11	103	10	16	30	13	11	43	17	397
4:15 PM	34	124	13	18	153	19	21	44	16	13	49	16	520
4:30 PM	37	132	14	15	148	19	25	62	20	30	80	18	600
4:45 PM	40	172	18	16	152	12	23	58	21	32	87	17	648
5:00 PM	40	154	16	15	157	17	22	51	18	28	100	23	641
5:15 PM	21	146	14	21	145	20	29	59	18	15	91	20	599
5:30 PM	31	153	10	17	136	14	15	41	21	22	90	17	567
5:45 PM	27	157	13	23	138	11	23	62	13	18	86	21	592
TOTAL VOLUMES =	260	1141	108	136	1132	122	174	407	140	169	626	149	4564

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	138	604	62	67	602	68	99	230	77	105	358	78	2488
PEAK HR. FACTOR:		0.874			0.975			0.949			0.896		0.960
CONTROL:	Signalized												

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Lewis St

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: WEDNESDAY

PROJECT# 10-5173-014

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 1	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	
7:00 AM	15	45	35	12	44	10	14	207	19	64	77	15	557
7:15 AM	10	50	37	10	62	8	21	302	27	80	95	17	719
7:30 AM	18	78	72	19	114	8	12	285	27	74	105	15	827
7:45 AM	16	76	41	15	111	9	26	286	41	82	120	23	846
8:00 AM	14	64	36	11	71	13	18	224	33	83	123	28	718
8:15 AM	19	48	31	15	57	5	30	300	23	72	112	19	731
8:30 AM	16	33	36	13	52	14	13	217	20	46	106	14	580
8:45 AM	8	40	23	17	41	7	17	172	14	37	100	19	495
TOTAL VOLUMES =	116	434	311	112	552	74	151	1993	204	538	838	150	5473

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	67	266	180	60	353	35	86	1095	124	311	460	85	3122
PEAK HR. FACTOR:		0.763			0.794			0.924			0.915		0.923

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Lewis St

DATE: 05/05/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: WEDNESDAY

PROJECT# 10-5173-014

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 1	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	
4:00 PM	26	72	79	30	40	18	17	172	21	33	185	21	714
4:15 PM	28	66	72	23	43	27	23	196	18	30	235	26	787
4:30 PM	18	70	74	26	53	16	36	181	24	34	245	36	813
4:45 PM	35	77	98	35	50	12	19	194	24	49	231	37	861
5:00 PM	50	103	99	34	53	14	27	179	16	43	241	38	897
5:15 PM	36	78	82	35	66	20	22	196	18	43	281	54	931
5:30 PM	47	88	101	42	68	18	24	203	33	42	294	52	1012
5:45 PM	41	82	56	29	45	15	21	220	20	45	262	40	876
TOTAL VOLUMES =	281	636	661	254	418	140	189	1541	174	319	1974	304	6891

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	174	351	338	140	232	67	94	798	87	173	1078	184	3716
PEAK HR. FACTOR:		0.856		0.857				0.938			0.925		0.918

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: State College Blvd

DATE: 05/06/2010

LOCATION: City of Garden Grove

E-W STREET: I-5 NB Ramps

DAY: THURSDAY

PROJECT# 10-5173-015

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	4	1	1	4	1	0	0	0	1.5	0.5	1	
7:00 AM	2	98	36	11	132	2				20	19	59	379
7:15 AM	7	128	26	8	195	2				24	18	62	470
7:30 AM	3	130	49	8	213	4				41	18	89	555
7:45 AM	6	131	47	12	226	1				42	16	98	579
8:00 AM	2	138	25	6	216	5				34	24	70	520
8:15 AM	5	106	28	10	194	4				36	19	91	493
8:30 AM	3	113	25	9	208	3				29	25	53	468
8:45 AM	3	124	29	8	205	2				34	14	64	483
TOTAL VOLUMES =	31	968	265	72	1589	23	0	0	0	260	153	586	3947

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	16	505	149	36	849	14	0	0	0	153	77	348	2147
PEAK HR. FACTOR:		0.910			0.940			0.000			0.926		0.927

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: State College Blvd

DATE: 05/06/2010

LOCATION: City of Garden Grove

E-W STREET: I-5 NB Ramps

DAY: THURSDAY

PROJECT# 10-5173-015

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	4	1	1	4	1	0	0	0	1.5	0.5	1	
4:00 PM	2	174	94	3	212	13				10	52	44	604
4:15 PM	6	189	80	2	217	8				20	95	54	671
4:30 PM	11	210	107	3	266	7				22	96	75	797
4:45 PM	22	197	91	9	237	4				22	131	77	790
5:00 PM	24	233	119	7	269	3				23	138	79	895
5:15 PM	25	225	101	6	257	6				13	184	67	884
5:30 PM	17	210	89	9	242	3				19	163	57	809
5:45 PM	10	209	60	2	206	5				21	130	65	708
TOTAL VOLUMES =	117	1647	741	41	1906	49	0	0	0	150	989	518	6158

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES =	88	865	400	31	1005	16	0	0	0	77	616	280	3378
PEAK HR. FACTOR:		0.900		0.943			0.000			0.921			0.944

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: State College Blvd

DATE: 05/06/2010

LOCATION: City of Garden Grove

E-W STREET: I-5 SB Ramps

DAY: THURSDAY

PROJECT# 10-5173-016

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	4.5	0.5	0	4	1	1.5	0.5	2	0	0	0	
7:00 AM		124	1		115	37	11	38	84				410
7:15 AM		151	0		167	53	9	26	72				478
7:30 AM		175	1		212	42	6	40	78				554
7:45 AM		167	0		215	55	20	53	118				628
8:00 AM		148	0		206	43	16	42	90				545
8:15 AM		118	0		176	54	21	43	113				525
8:30 AM		128	0		193	46	13	41	99				520
8:45 AM		136	0		176	63	19	52	87				533
TOTAL VOLUMES =	0	1147	2	0	1460	393	115	335	741	0	0	0	4193

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	608	1	0	809	194	63	178	399	0	0	0	2252
PEAK HR. FACTOR:		0.865			0.929			0.838			0.000		0.896

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: State College Blvd

DATE: 05/06/2010

LOCATION: City of Garden Grove

E-W STREET: I-5 SB Ramps

DAY: THURSDAY

PROJECT# 10-5173-016

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	4.5	0.5	0	4	1	1.5	0.5	2	0	0	0	
4:00 PM		266	3		156	64	9	38	70				606
4:15 PM		265	3		182	65	19	27	78				639
4:30 PM		310	4		217	57	19	26	66				699
4:45 PM		301	1		190	73	17	46	77				705
5:00 PM		345	1		190	89	16	38	57				736
5:15 PM		341	1		200	85	12	30	82				751
5:30 PM		290	2		196	68	14	37	67				674
5:45 PM		267	1		176	58	19	43	106				670
TOTAL VOLUMES =	0	2385	16	0	1507	559	125	285	603	0	0	0	5480

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	0	1297	7	0	797	304	64	140	282	0	0	0	2891
PEAK HR. FACTOR:		0.942			0.966			0.868			0.000		0.962

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: State College Blvd

DATE: 05/06/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: THURSDAY

PROJECT# 10-5173-017

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	3	2	2	3	1	2	3	1	2	3	1	
7:00 AM	16	82	50	12	123	56	43	216	10	89	97	11	805
7:15 AM	16	93	60	28	138	72	58	260	24	101	116	10	976
7:30 AM	12	94	69	45	166	106	66	268	19	133	134	12	1124
7:45 AM	18	92	63	31	195	88	48	269	34	140	131	14	1123
8:00 AM	20	79	51	24	163	108	43	243	29	123	122	11	1016
8:15 AM	11	70	40	35	172	86	28	231	35	125	107	16	956
8:30 AM	14	71	54	21	195	70	42	231	29	131	100	7	965
8:45 AM	16	80	47	25	192	57	39	154	22	161	90	10	893
TOTAL VOLUMES =	123	661	434	221	1344	643	367	1872	202	1003	897	91	7858

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	66	358	243	128	662	374	215	1040	106	497	503	47	4239
PEAK HR. FACTOR:		0.953			0.918			0.964			0.918		0.943

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: State College Blvd

DATE: 05/06/2010

LOCATION: City of Garden Grove

E-W STREET: Chapman Ave

DAY: THURSDAY

PROJECT# 10-5173-017

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 2	NT 3	NR 2	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	
4:00 PM	38	174	124	12	180	35	93	268	21	55	169	25	1194
4:15 PM	31	182	110	22	202	48	65	240	24	99	185	19	1227
4:30 PM	38	220	126	31	189	59	83	269	21	101	200	21	1358
4:45 PM	35	197	158	18	172	72	86	268	30	96	218	20	1370
5:00 PM	38	238	163	24	144	88	92	288	16	100	236	16	1443
5:15 PM	40	213	143	28	120	134	90	273	22	77	304	24	1468
5:30 PM	37	192	95	12	141	101	90	295	20	89	269	32	1373
5:45 PM	43	196	116	17	201	70	68	226	17	76	237	24	1291
TOTAL VOLUMES =	300	1612	1035	164	1349	607	667	2127	171	693	1818	181	10724

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES =	150	840	559	82	577	395	358	1124	88	362	1027	92	5654
PEAK HR. FACTOR:		0.882			0.934			0.969			0.914		0.963

CONTROL: Signalized

Appendix B

Existing Conditions
Intersection Analysis


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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #101 WEST STREET AT CHAPMAN AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.623
Loss Time (sec):      5           Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        30          Level Of Service:                B
*****
Street Name:          WEST STREET          CHAPMAN AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Prot+Permit          Prot+Permit          Prot+Permit          Permit+Prot
Rights:               Include              Include              Include              Include
Min. Green:           0 0 0 0            0 0 0 0            0 0 0 0            0 0 0 0
Y+R:                  4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0
Lanes:                1 0 1 1 0          1 0 1 1 0          1 0 1 1 0          1 0 2 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             48 269 115 156 281 85 138 1037 64 66 461 117
Growth Adj:           1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01
Initial Bse:          48 272 116 158 284 86 139 1047 65 67 466 118
User Adj:             1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:           48 272 116 158 284 86 139 1047 65 67 466 118
Reduct Vol:           0 0 0 0            0 0 0 0            0 0 0 0            0 0 0 0
Reduced Vol:          48 272 116 158 284 86 139 1047 65 67 466 118
PCE Adj:              1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:          48 272 116 158 284 86 139 1047 65 67 466 118
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment:           1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85
Lanes:                1.00 1.40 0.60 1.00 1.54 0.46 1.00 1.88 0.12 1.00 2.00 1.00
Final Sat.:           1700 2382 1018 1700 2610 790 1700 3202 198 1700 3400 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.03 0.11 0.11 0.09 0.11 0.11 0.08 0.33 0.33 0.04 0.14 0.08
Crit Moves:           ****              ****              ****              ****
*****

```

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #101 WEST STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.580
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with columns for Street Name (WEST STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, Lanes.

Volume Module:

Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module:

Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module:

Table with columns for Vol/Sat, Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #102 WEST STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.394
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Street Name: WEST STREET LAMPSON AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Prot+Permit Prot+Permit Permitted Permitted

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 1 0 1 0 1 1 0 1 1 0 1 0 1 0 1

-----|-----|-----|-----|

Volume Module:

Base Vol: 38 364 78 62 339 78 77 228 81 68 147 72

Growth Adj: 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01

Initial Bse: 38 368 79 63 342 79 78 230 82 69 148 73

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 38 368 79 63 342 79 78 230 82 69 148 73

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 38 368 79 63 342 79 78 230 82 69 148 73

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 38 368 79 63 342 79 78 230 82 69 148 73

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 1.00 1.65 0.35 1.00 1.63 0.37 1.00 1.00 1.00 1.00 1.00 1.00

Final Sat.: 1700 2800 600 1700 2764 636 1700 1700 1445 1700 1700 1445

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.02 0.13 0.13 0.04 0.12 0.12 0.05 0.14 0.06 0.04 0.09 0.05

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #102 WEST STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.453
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

Table with columns for Street Name (WEST STREET, LAMPSON AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Prot+Permit, Permitted), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module:

Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #103 HARBOR STREET AT KATELLA AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.524
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes. Rows include HARBOR STREET and KATELLA AVENUE with North, South, East, and West bound movements.

-----|-----|-----|-----|

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume. Rows include various adjustment factors.

-----|-----|-----|-----|

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat. Rows include saturation flow values and adjustments.

-----|-----|-----|-----|

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves. Rows include capacity analysis values.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #103 HARBOR STREET AT KATELLA AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.636
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: B

Table with columns for Street Name (HARBOR STREET, KATELLA AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #104 HARBOR STREET AT ORANGEWOOD AVENUE

Cycle (sec):	100	Critical Vol./Cap.(X):	0.522
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Street Name:	HARBOR STREET						ORANGEWOOD AVENUE														
Approach:	North Bound			South Bound			East Bound			West Bound											
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected						Protected						Protected								
Rights:	Include						Include						Include								
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	1	1	0	1	0	1	1	0	

-----|-----|-----|-----|-----|-----|

Volume Module:												
Base Vol:	47	785	89	56	571	29	60	647	52	97	297	90
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	47	793	90	57	577	29	61	653	53	98	300	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	47	793	90	57	577	29	61	653	53	98	300	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	793	90	57	577	29	61	653	53	98	300	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	47	793	90	57	577	29	61	653	53	98	300	91

-----|-----|-----|-----|-----|-----|

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.69	0.31	1.00	2.86	0.14	1.00	1.85	0.15	1.00	1.53	0.47
Final Sat.:	1700	4581	519	1700	4854	247	1700	3147	253	1700	2609	791

-----|-----|-----|-----|-----|-----|

Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.03	0.12	0.12	0.04	0.21	0.21	0.06	0.11	0.11
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #104 HARBOR STREET AT ORANGEWOOD AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.582
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with columns for Street Name (HARBOR STREET, ORANGEWOOD AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Include), Min. Green, Y+R, and Lanes.

Table for Volume Module with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 HARBOR STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.522
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 25 Level Of Service: A

Street Name:	HARBOR STREET						CHAPMAN AVENUE					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	1	2	0	2	0	1	1

Volume Module:

Base Vol:	95	642	120	112	504	97	157	981	116	69	441	85
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	96	648	121	113	509	98	159	991	117	70	445	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	96	648	121	113	509	98	159	991	117	70	445	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	648	121	113	509	98	159	991	117	70	445	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	96	648	121	113	509	98	159	991	117	70	445	86

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1445	3400	5100	1445	3400	3400	1445	3400	3400	1445

Capacity Analysis Module:

Vol/Sat:	0.03	0.13	0.08	0.03	0.10	0.07	0.05	0.29	0.08	0.02	0.13	0.06
Crit Moves:	****			****			****			****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #105 HARBOR STREET AT CHAPMAN AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.598
Loss Time (sec):      5           Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        29          Level Of Service:             A
*****
Street Name:          HARBOR STREET          CHAPMAN AVENUE
Approach:              North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Protected          Protected          Protected          Protected
Rights:               Include           Include           Include           Include
Min. Green:           0   0   0          0   0   0          0   0   0          0   0   0
Y+R:                  4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0
Lanes:                2 0 3 0 1          2 0 3 0 1          2 0 2 0 1          2 0 2 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             168 918 186        177 669 217        171 625 97         165 886 188
Growth Adj:           1.01 1.01 1.01    1.01 1.01 1.01    1.01 1.01 1.01    1.01 1.01 1.01
Initial Bse:          170 927 188        179 676 219        173 631 98         167 895 190
User Adj:             1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Volume:           170 927 188        179 676 219        173 631 98         167 895 190
Reduct Vol:           0   0   0          0   0   0          0   0   0          0   0   0
Reduced Vol:          170 927 188        179 676 219        173 631 98         167 895 190
PCE Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
FinalVolume:          170 927 188        179 676 219        173 631 98         167 895 190
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700    1700 1700 1700    1700 1700 1700    1700 1700 1700
Adjustment:           1.00 1.00 0.85    1.00 1.00 0.85    1.00 1.00 0.85    1.00 1.00 0.85
Lanes:                2.00 3.00 1.00    2.00 3.00 1.00    2.00 2.00 1.00    2.00 2.00 1.00
Final Sat.:           3400 5100 1445    3400 5100 1445    3400 3400 1445    3400 3400 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.05 0.18 0.13    0.05 0.13 0.15    0.05 0.19 0.07    0.05 0.26 0.13
Crit Moves:           ****          ****          ****          ****
*****

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[10.1]

Street Name: Harbor Boulevard Project Access 2 / Sheraton Acces

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 1 0 2 1 0 1 0 2 1 0 0 0 0 0 1 0 0 1 0 0

Volume Module:

Table with 12 columns for volume metrics: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows include values for each of the four approaches.

Critical Gap Module:

Table with 12 columns for critical gap metrics: Critical Gp, FollowUpTim. Rows include values for each of the four approaches.

Capacity Module:

Table with 12 columns for capacity metrics: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows include values for each of the four approaches.

Level Of Service Module:

Table with 12 columns for level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows include values for each of the four approaches.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E
Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.2]

Street Name: Harbor Boulevard Project Access 2 / Sheraton Acces
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 1 0 2 1 0 1 0 2 1 0 0 0 0 0 1 0 0 1 0 0

Volume Module:
Base Vol: 15 1378 0 6 969 32 0 0 21 0 0 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 15 1378 0 6 969 32 0 0 21 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 15 1378 0 6 969 32 0 0 21 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 15 1378 0 6 969 32 0 0 21 0 0 0

Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx 6.9 7.5 6.5 6.9
FollowUpTim: 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx 3.3 3.5 4.0 3.3

Capacity Module:
Cnflct Vol: 1001 xxxxx xxxxxx 1378 xxxxx xxxxxx xxxxx xxxxx 339 1743 2421 459
Potent Cap.: 700 xxxxx xxxxxx 504 xxxxx xxxxxx xxxxx xxxxx 663 57 33 554
Move Cap.: 700 xxxxx xxxxxx 504 xxxxx xxxxxx xxxxx xxxxx 663 53 32 554
Volume/Cap: 0.02 xxxxx xxxxx 0.01 xxxxx xxxxx xxxxx xxxxx 0.03 0.00 0.00 0.00

Level Of Service Module:
2Way95thQ: 0.1 xxxxx xxxxxx 0.0 xxxxx xxxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxxx
Control Del: 10.3 xxxxx xxxxxx 12.2 xxxxx xxxxxx xxxxxx xxxxx 10.6 xxxxxx xxxxx xxxxxx
LOS by Move: B * * B * * * * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx 0 xxxxxx
SharedQueue: xxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxxx
Shrd ConDel: xxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 10.6 xxxxxx
ApproachLOS: * * B *

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #135 Harbor Boulevard (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: D [30.8]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Harbor Boulevard and Twintree Lane with various movement details.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across different movements.

Critical Gap Module table showing Critical Gap and FollowUpTim values for different movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. for different movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #135 Harbor Boulevard (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: F[86.8]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Harbor Boulevard and Twintree Lane with North, South, East, and West bound movements.

Volume Module:

Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume. Rows include Harbor Boulevard and Twintree Lane.

Critical Gap Module:

Table with columns for Critical Gp and FollowUpTim. Rows include Harbor Boulevard and Twintree Lane.

Capacity Module:

Table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. Rows include Harbor Boulevard and Twintree Lane.

Level Of Service Module:

Table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS. Rows include Harbor Boulevard and Twintree Lane.

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #106 HARBOR STREET AT LAMPSON AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):      0.490
Loss Time (sec):      5           Average Delay (sec/veh):    xxxxxx
Optimal Cycle:        23          Level Of Service:          A
*****
Street Name:          HARBOR STREET          LAMPSON AVENUE
Approach:              North Bound          South Bound          East Bound          West Bound
Movement:              L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:                Prot+Permit          Prot+Permit          Permitted            Permitted
Rights:                  Include              Include              Include              Include
Min. Green:              0 0 0              0 0 0              0 0 0              0 0 0
Y+R:                    4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0
Lanes:                   1 0 2 1 0          1 0 2 1 0          1 0 1 0 1          1 0 1 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:                66 825 112          59 696 20          46 279 64          90 152 63
Growth Adj:              1.01 1.01 1.01      1.01 1.01 1.01      1.01 1.01 1.01      1.01 1.01 1.01
Initial Bse:              67 833 113          60 703 20          46 282 65          91 154 64
User Adj:                 1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
PHF Adj:                  1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
PHF Volume:              67 833 113          60 703 20          46 282 65          91 154 64
Reduct Vol:               0 0 0              0 0 0              0 0 0              0 0 0
Reduced Vol:             67 833 113          60 703 20          46 282 65          91 154 64
PCE Adj:                  1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
MLF Adj:                  1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
FinalVolume:             67 833 113          60 703 20          46 282 65          91 154 64
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:                1700 1700 1700      1700 1700 1700      1700 1700 1700      1700 1700 1700
Adjustment:              1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 0.85      1.00 1.00 0.85
Lanes:                   1.00 2.64 0.36      1.00 2.92 0.08      1.00 1.00 1.00      1.00 1.00 1.00
Final Sat.:             1700 4490 610        1700 4958 142      1700 1700 1445      1700 1700 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:                 0.04 0.19 0.19      0.04 0.14 0.14      0.03 0.17 0.04      0.05 0.09 0.04
Crit Moves:              ****                ****                ****                ****
*****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #106 HARBOR STREET AT LAMPSON AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.576
Loss Time (sec):      5           Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        27          Level Of Service:                A
*****
Street Name:          HARBOR STREET          LAMPSON AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Prot+Permit          Prot+Permit          Permitted           Permitted
Rights:               Include             Include             Include             Include
Min. Green:           0 0 0              0 0 0              0 0 0              0 0 0
Y+R:                  4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0
Lanes:                1 0 2 1 0          1 0 2 1 0          1 0 1 0 1          1 0 1 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             96 1151 144        44 791 52          55 196 72          131 354 55
Growth Adj:           1.01 1.01 1.01    1.01 1.01 1.01    1.01 1.01 1.01    1.01 1.01 1.01
Initial Bse:          97 1163 145        44 799 53          56 198 73          132 358 56
User Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Adj:               1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Volume:           97 1163 145        44 799 53          56 198 73          132 358 56
Reduct Vol:           0 0 0              0 0 0              0 0 0              0 0 0
Reduced Vol:          97 1163 145        44 799 53          56 198 73          132 358 56
PCE Adj:               1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
MLF Adj:               1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
FinalVolume:          97 1163 145        44 799 53          56 198 73          132 358 56
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700    1700 1700 1700    1700 1700 1700    1700 1700 1700
Adjustment:           1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 0.85    1.00 1.00 0.85
Lanes:                1.00 2.67 0.33    1.00 2.81 0.19    1.00 1.00 1.00    1.00 1.00 1.00
Final Sat.:           1700 4533 567    1700 4785 315    1700 1700 1445    1700 1700 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.06 0.26 0.26    0.03 0.17 0.17    0.03 0.12 0.05    0.08 0.21 0.04
Crit Moves:           ****              ****              ****              ****
*****

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Level Of Service Computation Report
 2000 HCM Unsignalized Method (Base Volume Alternative)

 Intersection #110 HARBOR BOULEVARD AT BLUE SPRUCE AVENUE

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: D[25.8]

Street Name:	HARBOR BOULEVARD					BLUE SPRUCE AVENUE												
Approach:	North Bound		South Bound			East Bound			West Bound									
Movement:	L	T	R	L	T	R	L	T	R	L	T	R						
Control:	Uncontrolled					Uncontrolled			Stop Sign			Stop Sign						
Rights:	Include					Include			Include			Include						
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	995	36	11	855	0	0	0	0	34	0	36
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	1005	36	11	864	0	0	0	0	34	0	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1005	36	11	864	0	0	0	0	34	0	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1005	36	11	864	0	0	0	0	34	0	36

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	6.5	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	1041	xxxx	xxxxx	xxxx	xxxx	xxxxx	1333	1909	353
Potent Cap.:	xxxx	xxxx	xxxxx	676	xxxx	xxxxx	xxxx	xxxx	xxxxx	148	69	649
Move Cap.:	xxxx	xxxx	xxxxx	676	xxxx	xxxxx	xxxx	xxxx	xxxxx	146	68	649
Volume/Cap:	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	0.24	0.00	0.06

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	243	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	25.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx				25.8	
ApproachLOS:	*			*			*				D	

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #110 HARBOR BOULEVARD AT BLUE SPRUCE AVENUE

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: F [82.3]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include HARBOR BOULEVARD and BLUE SPRUCE AVENUE with North, South, East, and West bound movements.

Volume Module: Table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module: Table showing Critical Gp and FollowUpTim for each approach.

Capacity Module: Table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level Of Service Module: Table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for each approach.

Note: Queue reported is the number of cars per lane.


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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #132 HARBOR BOULEVARD AT PALM STREET
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.361
Loss Time (sec):      5           Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        19          Level Of Service:                A
*****
Street Name:          HARBOR BOULEVARD          PALM STREET
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|-----|
Control:              Protected          Protected          Permitted          Permitted
Rights:               Ignore           Include           Include           Include
Min. Green:           0 0 0            0 0 0            0 0 0            0 0 0
Y+R:                  4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:                1 0 3 0 1        1 0 2 1 0        0 0 1! 0 0        0 1 0 0 1
-----|-----|-----|-----|-----|
Volume Module:
Base Vol:             14 790          12 93 655         42 51 18          13 6 35           99
Growth Adj:           1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01
Initial Bse:          14 798          12 94 662         42 52 18          13 6 35           100
User Adj:              1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:           14 798          0 94 662         42 52 18          13 6 35           100
Reduct Vol:           0 0 0            0 0 0            0 0 0            0 0 0
Reduced Vol:          14 798          0 94 662         42 52 18          13 6 35           100
PCE Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:          14 798          0 94 662         42 52 18          13 6 35           100
-----|-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:           1.00 1.00 0.85  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.85
Lanes:                 1.00 3.00 1.00  1.00 2.82 0.18  0.62 0.22 0.16  0.15 0.85 1.00
Final Sat.:           1700 5100 1445  1700 4793 307  1057 373 270  249 1451 1445
-----|-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.01 0.16 0.00  0.06 0.14 0.14  0.03 0.05 0.05  0.00 0.02 0.07
Crit Moves:           ****          ****          ****          ****
*****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #132 HARBOR BOULEVARD AT PALM STREET
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.516
Loss Time (sec):      5           Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        24          Level Of Service:                A
*****
Street Name:          HARBOR BOULEVARD          PALM STREET
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Protected          Protected          Permitted          Permitted
Rights:               Ignore           Include           Include           Include
Min. Green:           0 0 0            0 0 0            0 0 0            0 0 0
Y+R:                  4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:                1 0 3 0 1        1 0 2 1 0        0 0 1 0 0        0 1 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             35 1190 30       71 850 126       135 49 38         8 62 155
Growth Adj:           1.01 1.01 1.01   1.01 1.01 1.01   1.01 1.01 1.01   1.01 1.01 1.01
Initial Bse:          35 1202 30       72 859 127       136 49 38         8 63 157
User Adj:             1.00 1.00 0.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:              1.00 1.00 0.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Volume:           35 1202 0         72 859 127       136 49 38         8 63 157
Reduct Vol:           0 0 0            0 0 0            0 0 0            0 0 0
Reduced Vol:         35 1202 0         72 859 127       136 49 38         8 63 157
PCE Adj:              1.00 1.00 0.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:              1.00 1.00 0.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:         35 1202 0         72 859 127       136 49 38         8 63 157
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:            1700 1700 1700   1700 1700 1700   1700 1700 1700   1700 1700 1700
Adjustment:           1.00 1.00 0.85   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 0.85
Lanes:                1.00 3.00 1.00   1.00 2.61 0.39   0.61 0.22 0.17   0.11 0.89 1.00
Final Sat.:          1700 5100 1445 1700 4442 658 1034 375 291 194 1506 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.02 0.24 0.00   0.04 0.19 0.19   0.08 0.13 0.13   0.00 0.04 0.11
Crit Moves:          ****          ****          ****          ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #111 HARBOR STREET AT GARDEN GROVE BOULEVARD

Cycle (sec): 100 Critical Vol./Cap.(X): 0.553
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 26 Level Of Service: A

Street Name:	HARBOR STREET						GARDEN GROVE BOULEVARD					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	2	0	2	1	0	2

Volume Module:

Base Vol:	189	839	193	86	757	91	198	558	281	149	324	48
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	191	847	195	87	765	92	200	564	284	150	327	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	847	195	87	765	92	200	564	284	150	327	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	847	195	87	765	92	200	564	284	150	327	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	847	195	87	765	92	200	564	284	150	327	48

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	2.00	1.00	2.00	2.61	0.39
Final Sat.:	1700	5100	1445	1700	5100	1445	3400	3400	1445	3400	4442	658

Capacity Analysis Module:

Vol/Sat:	0.11	0.17	0.13	0.05	0.15	0.06	0.06	0.17	0.20	0.04	0.07	0.07
Crit Moves:	****			****			****		****	****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #111 HARBOR STREET AT GARDEN GROVE BOULEVARD
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.671
Loss Time (sec):      5           Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        34          Level Of Service:          B
*****
Street Name:          HARBOR STREET          GARDEN GROVE BOULEVARD
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Protected          Protected          Protected          Protected
Rights:               Include           Include           Include           Include
Min. Green:           0 0 0            0 0 0            0 0 0            0 0 0
Y+R:                  4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:                1 0 3 0 1        1 0 3 0 1        2 0 2 1 0        2 0 2 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:             341 1138 223    93 822 150    291 577 196    206 763 91
Growth Adj:           1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01
Initial Bse:          344 1149 225    94 830 152    294 583 198    208 771 92
User Adj:              1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:               1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:           344 1149 225    94 830 152    294 583 198    208 771 92
Reduct Vol:           0 0 0            0 0 0            0 0 0            0 0 0
Reduced Vol:          344 1149 225    94 830 152    294 583 198    208 771 92
PCE Adj:               1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:               1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:          344 1149 225    94 830 152    294 583 198    208 771 92
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:           1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:                1.00 3.00 1.00  1.00 3.00 1.00  2.00 2.24 0.76  2.00 2.68 0.32
Final Sat.:           1700 5100 1445  1700 5100 1445  3400 3807 1293  3400 4557 543
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.20 0.23 0.16  0.06 0.16 0.10  0.09 0.15 0.15  0.06 0.17 0.17
Crit Moves:          ****          ****          ****          ****
*****

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 Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #112 HARBOR STREET AT CA-22 WB OFF-RAMP / BANNER DR.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.671

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 34 Level Of Service: B

Street Name: HARBOR STREET CA-22 WB OFF-RAMP / BANNER DR.

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Permitted Split Phase Split Phase

Rights: Ignore Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 0 0 2 1 0 0 0 1 1 0 0 1

-----|-----|-----|-----|

Volume Module:

Base Vol: 37 1149 413 0 1187 29 61 0 106 816 55 109

Growth Adj: 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01

Initial Bse: 37 1160 417 0 1199 29 62 0 107 824 56 110

User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 37 1160 0 0 1199 29 62 0 107 824 56 110

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 37 1160 0 0 1199 29 62 0 107 824 56 110

PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 37 1160 0 0 1199 29 62 0 107 824 56 110

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85

Lanes: 1.00 3.00 1.00 0.00 2.93 0.07 0.37 0.00 0.63 1.87 0.13 1.00

Final Sat.: 1700 5100 1445 0 4978 122 621 0 1079 3185 215 1445

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.02 0.23 0.00 0.00 0.24 0.24 0.10 0.00 0.10 0.26 0.26 0.08

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #112 HARBOR STREET AT CA-22 WB OFF-RAMP / BANNER DR.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.658
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes. Rows include HARBOR STREET and CA-22 WB OFF-RAMP / BANNER DR. with various traffic parameters.

Volume Module: Table showing traffic volume data for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume across different approaches.

Saturation Flow Module: Table showing saturation flow data for Sat/Lane, Adjustment, Lanes, and Final Sat. across different approaches.

Capacity Analysis Module: Table showing capacity analysis data for Vol/Sat, Crit Moves, and other metrics across different approaches.

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                          Level Of Service Computation Report
                          ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #113 HARBOR STREET AT TRASK AVENUE
*****
Cycle (sec):           100           Critical Vol./Cap.(X):           0.870
Loss Time (sec):       5             Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         72           Level Of Service:              D
*****
Street Name:          HARBOR STREET          TRASK AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Protected          Protected          Protected          Protected
Rights:               Include          Include          Include          Ovl
Min. Green:           0 0 0          0 0 0          0 0 0          0 0 0
Y+R:                  4.0 4.0 4.0    4.0 4.0 4.0    4.0 4.0 4.0    4.0 4.0 4.0
Lanes:                1 0 3 0 1      1 0 3 0 1      1 0 2 0 1      1 0 2 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             50 802 375    338 1426    58 109 561 428    98 286 688
Growth Adj:           1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01
Initial Bse:          51 810 379    341 1440    59 110 567 432    99 289 695
User Adj:             1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:           51 810 379    341 1440    59 110 567 432    99 289 695
Reduct Vol:           0 0 0          0 0 0          0 0 0          0 0 0
Reduced Vol:         51 810 379    341 1440    59 110 567 432    99 289 695
PCE Adj:              1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:         51 810 379    341 1440    59 110 567 432    99 289 695
OvlAdjVol:           -----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment:           1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
Lanes:                1.00 3.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00 1.00 2.00 1.00
Final Sat.:           1700 5100 1445 1700 5100 1445 1700 3400 1445 1700 3400 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.03 0.16 0.26 0.20 0.28 0.04 0.06 0.17 0.30 0.06 0.08 0.48
OvlAdjV/S:           -----|-----|-----|-----|
Crit Moves:           ****  ****  ****  ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #113 HARBOR STREET AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.954
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

Table with columns for Street Name (HARBOR STREET, TRASK AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume, and OvlAdjVol.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, OvlAdjV/S, and Crit Moves.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #114 CA-22 EB ON-RAMP AT TRASK AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.500
Loss Time (sec):      5            Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        44           Level Of Service:                A
*****
Street Name:          CA-22 EB ON-RAMP          TRASK AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Protected          Permitted          Protected          Permitted
Rights:               Include           Ignore             Include           Include
Min. Green:           0 0 0 0          0 0 0 0          0 0 0 0          0 0 0 0
Y+R:                  4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:                0 0 0 0 0        0 0 0 0 1        2 0 1 0 0        0 0 1 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:             0 0 0 0          0 0 250          641 758          0 0 782 69
Growth Adj:           1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01
Initial Bse:          0 0 0 0          0 0 253          647 766          0 0 790 70
User Adj:             1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:           0 0 0 0          0 0 0 0          647 766          0 0 790 70
Reduct Vol:           0 0 0 0          0 0 0 0          0 0 0 0          0 0 0 0
Reduced Vol:          0 0 0 0          0 0 0 0          647 766          0 0 790 70
PCE Adj:              1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:          0 0 0 0          0 0 0 0          647 766          0 0 790 70
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:           1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 1.00
Lanes:                0.00 0.00 0.00  0.00 0.00 1.00  2.00 1.00 0.00  0.00 1.84 0.16
Final Sat.:           0 0 0 0          0 0 1445        3400 1700          0 0 3124 276
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.00 0.00 0.00  0.00 0.00 0.00  0.19 0.45 0.00  0.00 0.25 0.25
Crit Moves:                               ****
*****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #114 CA-22 EB ON-RAMP AT TRASK AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.507
Loss Time (sec):      5           Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        24          Level Of Service:                A
*****
Street Name:          CA-22 EB ON-RAMP          TRASK AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|-----|
Control:              Protected          Permitted          Protected          Permitted
Rights:              Include          Ignore          Include          Include
Min. Green:           0 0 0 0          0 0 0 0          0 0 0 0          0 0 0 0
Y+R:                  4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:                0 0 0 0 0        0 0 0 0 1        2 0 1 0 0        0 0 1 1 0
-----|-----|-----|-----|-----|
Volume Module:
Base Vol:             0 0 0 0          0 0 295          824 516          0 0 668 48
Growth Adj:           1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01
Initial Bse:          0 0 0 0          0 0 298          832 521          0 0 675 48
User Adj:             1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:           0 0 0 0          0 0 0 0          832 521          0 0 675 48
Reduct Vol:           0 0 0 0          0 0 0 0          0 0 0 0          0 0 0 0
Reduced Vol:         0 0 0 0          0 0 0 0          832 521          0 0 675 48
PCE Adj:              1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:         0 0 0 0          0 0 0 0          832 521          0 0 675 48
-----|-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:           1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 1.00
Lanes:                0.00 0.00 0.00  0.00 0.00 1.00  2.00 1.00 0.00  0.00 1.87 0.13
Final Sat.:           0 0 0 0          0 0 1445      3400 1700          0 0 3172 228
-----|-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.00 0.00 0.00  0.00 0.00 0.00  0.24 0.31 0.00  0.00 0.21 0.21
Crit Moves:          *****
*****

```

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #115 HASTER STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.522
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

Table with columns for Street Name (HASTER STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #115 HASTER STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.660
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with columns for Street Name (HASTER STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Include), Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves, and other performance metrics.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #116 HASTER STREET AT LAMPSON AVENUE
*****
Cycle (sec):          100.          Critical Vol./Cap.(X):          0.476
Loss Time (sec):      5             Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        23            Level Of Service:                A
*****
Street Name:          HASTER STREET          LAMPSON AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Permitted          Permitted          Permitted          Permitted
Rights:               Include            Include            Include            Include
Min. Green:           0 0 0             0 0 0             0 0 0             0 0 0
Y+R:                  4.0 4.0 4.0       4.0 4.0 4.0       4.0 4.0 4.0       4.0 4.0 4.0
Lanes:                1 0 2 0 1         1 0 2 0 1         1 0 1 0 1         1 0 1 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             112 493 73        125 505 79        85 260 125        92 124 154
Growth Adj:           1.01 1.01 1.01   1.01 1.01 1.01   1.01 1.01 1.01   1.01 1.01 1.01
Initial Bse:          113 498 74        126 510 80        86 263 126        93 125 156
User Adj:             1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Volume:          113 498 74        126 510 80        86 263 126        93 125 156
Reduct Vol:           0 0 0             0 0 0             0 0 0             0 0 0
Reduced Vol:          113 498 74        126 510 80        86 263 126        93 125 156
PCE Adj:              1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:         113 498 74        126 510 80        86 263 126        93 125 156
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700   1700 1700 1700   1700 1700 1700   1700 1700 1700
Adjustment:           1.00 1.00 0.85   1.00 1.00 0.85   1.00 1.00 0.85   1.00 1.00 0.85
Lanes:                1.00 2.00 1.00   1.00 2.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
Final Sat.:          1700 3400 1445   1700 3400 1445   1700 1700 1445   1700 1700 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.07 0.15 0.05   0.07 0.15 0.06   0.05 0.15 0.09   0.05 0.07 0.11
Crit Moves:          ****                ****                ****                ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #116 HASTER STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.582
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

Table with columns for Street Name (HASTER STREET, LAMPSON AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach and movement.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach and movement.

Capacity Analysis Module table showing Vol/Sat and Crit Moves for each approach and movement.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #117 LEWIS STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.726
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C

Table with columns for Street Name (LEWIS STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #117 LEWIS STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.746
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: C

Table with columns for Street Name (LEWIS STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Include), and various traffic volume and delay metrics.

Volume Module: Table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module: Table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach.

Capacity Analysis Module: Table showing Vol/Sat and Crit Moves for each approach.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #118 STATE COLLEGE BLVD. AT I-5 NB RAMPS

Cycle (sec): 100 Critical Vol./Cap.(X): 0.302
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 17 Level Of Service: A

Street Name:	STATE COLLEGE BOULEVARD						I-5 NB RAMPS					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1	1	0	0	0	0	0	2

Volume Module:

Base Vol:	16	505	149	36	849	14	0	0	0	153	77	348
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	16	510	150	36	857	14	0	0	0	155	78	351
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	510	0	36	857	14	0	0	0	155	78	351
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	510	0	36	857	14	0	0	0	155	78	351
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	16	510	0	36	857	14	0	0	0	155	78	351

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	4.00	1.00	1.00	4.00	1.00	0.00	0.00	0.00	2.00	1.00	2.00
Final Sat.:	3400	6800	1445	1700	6800	1445	0	0	0	3393	1707	2890

Capacity Analysis Module:

Vol/Sat:	0.00	0.08	0.00	0.02	0.13	0.01	0.00	0.00	0.00	0.05	0.05	0.12
Crit Moves:	****				****							****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #118 STATE COLLEGE BLVD. AT I-5 NB RAMPS
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.408
Loss Time (sec):      5            Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        20            Level Of Service:                A
*****
Street Name:          STATE COLLEGE BOULEVARD          I-5 NB RAMPS
Approach:              North Bound          South Bound          East Bound          West Bound
Movement:              L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|-----|
Control:               Protected          Protected          Split Phase          Split Phase
Rights:                Ignore          Include          Include          Include
Min. Green:            0 0 0          0 0 0          0 0 0          0 0 0
Y+R:                   4.0 4.0 4.0    4.0 4.0 4.0    4.0 4.0 4.0    4.0 4.0 4.0
Lanes:                 2 0 4 0 1      1 0 4 0 1      0 0 0 0 0      1 1 1 0 2
-----|-----|-----|-----|-----|
Volume Module:
Base Vol:              88 865 400      31 1005 16      0 0 0          77 616 280
Growth Adj:           1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01  1.01 1.01 1.01
Initial Bse:           89 874 404      31 1015 16      0 0 0          78 622 283
User Adj:              1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:            89 874 0         31 1015 16      0 0 0          78 622 283
Reduct Vol:            0 0 0           0 0 0           0 0 0           0 0 0
Reduced Vol:           89 874 0         31 1015 16      0 0 0           78 622 283
PCE Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:           89 874 0         31 1015 16      0 0 0           78 622 283
-----|-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:            1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 0.85
Lanes:                 2.00 4.00 1.00  1.00 4.00 1.00  0.00 0.00 0.00  1.00 2.00 2.00
Final Sat.:            3400 6800 1445  1700 6800 1445  0 0 0           1700 3400 2890
-----|-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.03 0.13 0.00  0.02 0.15 0.01  0.00 0.00 0.00  0.05 0.18 0.10
Crit Moves:           ****                ****                ****
*****

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Level Of Service Computation Report
 ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

 Intersection #119 STATE COLLEGE BLVD. AT I-5 SB RAMPS

Cycle (sec): 100 Critical Vol./Cap.(X): 0.310
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 18 Level Of Service: A

Street Name: STATE COLLEGE BOULEVARD I-5 SB RAMPS

Approach:	North Bound			South Bound			East Bound			West Bound													
Movement:	L	T	R	L	T	R	L	T	R	L	T	R											
Control:	Permitted			Permitted			Permitted			Protected													
Rights:	Include			Ignore			Include			Include													
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0											
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0											
Lanes:	0	0	4	1	0	0	0	0	4	0	1	0	1	1	0	0	0	2	0	0	0	0	0

-----|-----|-----|-----|-----|

Volume Module:

Base Vol:	0	608	1	0	809	194	63	178	399	0	0	0
Growth Adj:	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Initial Bse:	0	614	1	0	817	196	64	180	403	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	614	1	0	817	0	64	180	403	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	614	1	0	817	0	64	180	403	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	614	1	0	817	0	64	180	403	0	0	0

-----|-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	0.00	4.99	0.01	0.00	4.00	1.00	1.00	1.00	2.00	0.00	0.00	0.00
Final Sat.:	0	8486	14	0	6800	1445	1700	1700	2890	0	0	0

-----|-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat:	0.00	0.07	0.07	0.00	0.12	0.00	0.04	0.11	0.14	0.00	0.00	0.00
Crit Moves:	****			****			****					

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #119 STATE COLLEGE BLVD. AT I-5 SB RAMPS
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.303
Loss Time (sec):      5           Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        17          Level Of Service:                A
*****
Street Name:         STATE COLLEGE BOULEVARD          I-5 SB RAMPS
Approach:            North Bound          South Bound          East Bound          West Bound
Movement:            L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Permitted          Permitted          Permitted          Protected
Rights:              Include          Ignore          Include          Include
Min. Green:           0 0 0 0          0 0 0 0          0 0 0 0          0 0 0 0
Y+R:                 4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:               0 0 4 1 0        0 0 4 0 1        1 1 0 0 2        0 0 0 0 0
-----|-----|-----|-----|
Volume Module:
Base Vol:             0 1297 7 0 797 304 64 140 282 0 0 0
Growth Adj:          1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01
Initial Bse:         0 1310 7 0 805 307 65 141 285 0 0 0
User Adj:            1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:             1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:          0 1310 7 0 805 0 65 141 285 0 0 0
Reduct Vol:          0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol:         0 1310 7 0 805 0 65 141 285 0 0 0
PCE Adj:             1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:             1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Volume:        0 1310 7 0 805 0 65 141 285 0 0 0
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:            1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment:          1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
Lanes:               0.00 4.97 0.03 0.00 4.00 1.00 1.00 1.00 2.00 0.00 0.00 0.00
Final Sat.:          0 8454 46 0 6800 1445 1700 1700 2890 0 0 0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:             0.00 0.15 0.15 0.00 0.12 0.00 0.04 0.08 0.10 0.00 0.00 0.00
Crit Moves:          ****          ****          ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #120 STATE COLLEGE BLVD. AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes. Rows include STATE COLLEGE BOULEVARD and CHAPMAN AVENUE with North and South Bound movements.

Volume Module: Table showing various volume and adjustment factors like Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume, and OvlAdjVol.

Saturation Flow Module: Table showing Sat/Lane, Adjustment, Lanes, and Final Sat values.

Capacity Analysis Module: Table showing Vol/Sat, OvlAdjV/S, and Crit Moves values.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #120 STATE COLLEGE BLVD. AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.594
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

Street Name: STATE COLLEGE BOULEVARD CHAPMAN AVENUE

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected
Rights: Ovl Ovl Ovl Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 2 0 3 0 2 2 0 3 0 1 2 0 3 0 1 2 0 3 0 1

Volume Module:
Base Vol: 150 840 559 82 577 395 358 1124 88 362 1027 92
Growth Adj: 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01 1.01
Initial Bse: 152 848 565 83 583 399 362 1135 89 366 1037 93
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 152 848 565 83 583 399 362 1135 89 366 1037 93
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 152 848 565 83 583 399 362 1135 89 366 1037 93
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 152 848 565 83 583 399 362 1135 89 366 1037 93
OvlAdjVol: 254 245 24

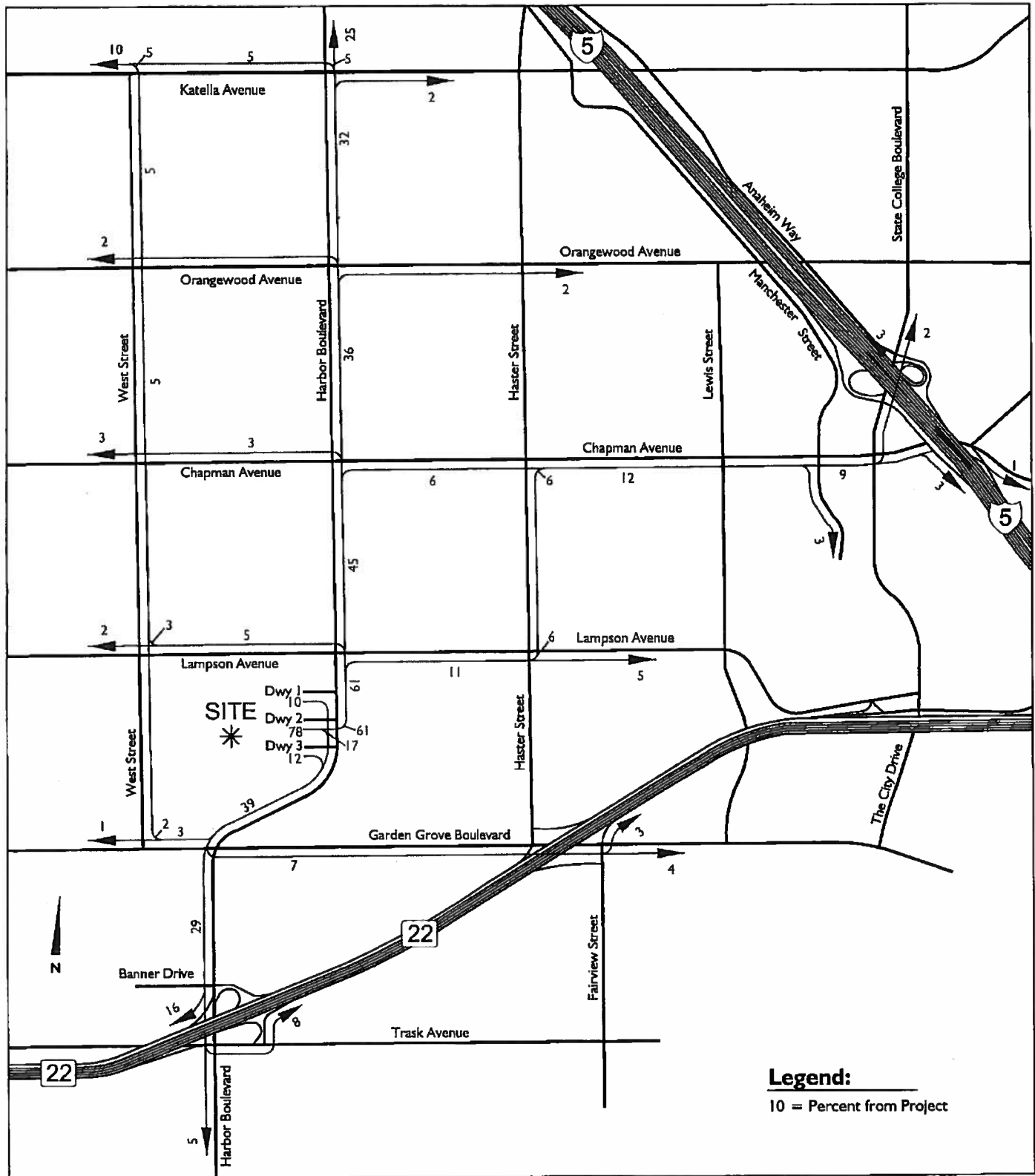
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
Lanes: 2.00 3.00 2.00 2.00 3.00 1.00 2.00 3.00 1.00 2.00 3.00 1.00
Final Sat.: 3400 5100 2890 3400 5100 1445 3400 5100 1445 3400 5100 1445

Capacity Analysis Module:
Vol/Sat: 0.04 0.17 0.20 0.02 0.11 0.28 0.11 0.22 0.06 0.11 0.20 0.06
OvlAdjV/s: 0.09 0.17 0.02
Crit Moves: **** **** **** ****

Appendix C

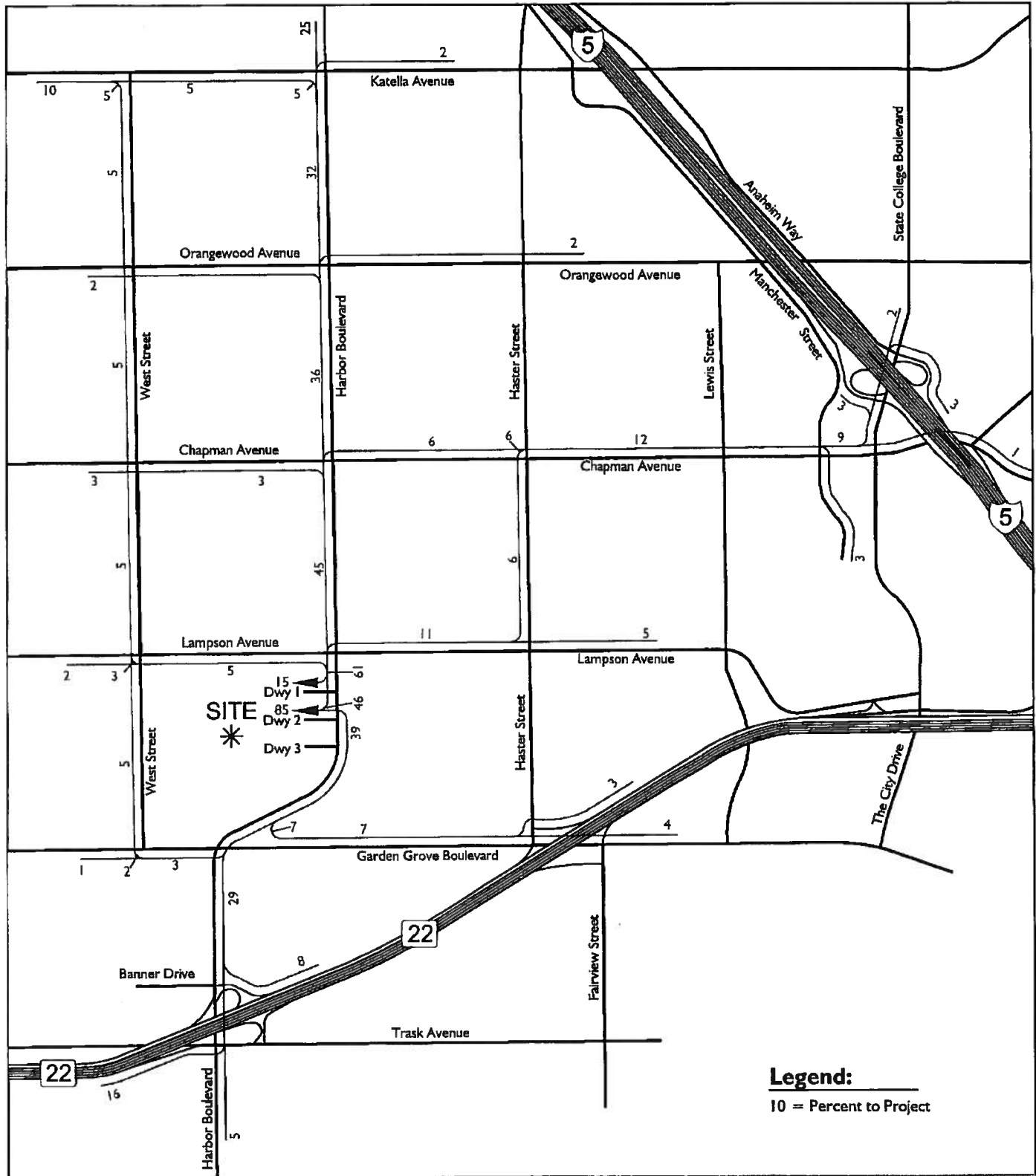
Cumulative Project List

The Garden Grove Water Park Outbound Trip Distribution



Outbound

The Garden Grove Water Park Inbound Trip Distribution

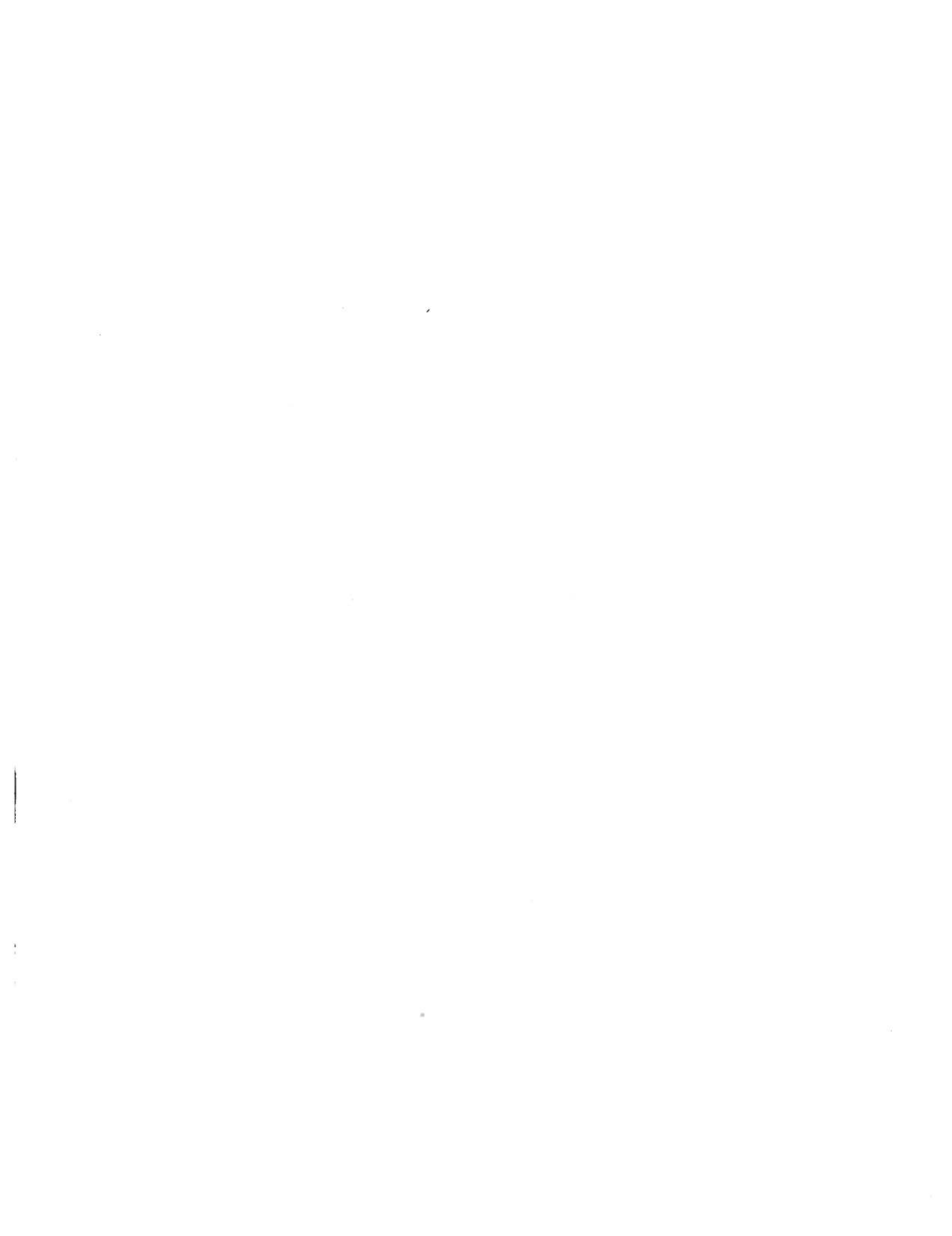


Inbound

N

Appendix D

Project Buildout (Year 2014) Without Project Conditions
Intersection Analysis Worksheets



Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #101 WEST STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.642

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 32 Level Of Service: B

Street Name: WEST STREET CHAPMAN AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Prot+Permit Prot+Permit Prot+Permit Permit+Prot

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1

-----|-----|-----|-----|

Volume Module:

Base Vol: 48 269 115 156 281 85 138 1037 64 66 461 117

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 50 280 120 162 292 88 144 1078 67 69 479 122

Added Vol: 0 3 0 0 7 0 0 4 0 0 2 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 50 283 120 162 299 88 144 1082 67 69 481 122

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 50 283 120 162 299 88 144 1082 67 69 481 122

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 50 283 120 162 299 88 144 1082 67 69 481 122

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 50 283 120 162 299 88 144 1082 67 69 481 122

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85

Lanes: 1.00 1.41 0.59 1.00 1.54 0.46 1.00 1.88 0.12 1.00 2.00 1.00

Final Sat.: 1700 2389 1011 1700 2625 775 1700 3203 197 1700 3400 1445

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.03 0.12 0.12 0.10 0.11 0.11 0.08 0.34 0.34 0.04 0.14 0.08

Crit Moves: **** **** **** ****

Level of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #101 WEST STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.600

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: A

Street Name: WEST STREET CHAPMAN AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Prot+Permit Prot+Permit Prot+Permit Permit+Prot

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1

Volume Module:

Base Vol: 85 352 73 130 312 83 77 664 53 117 945 159

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 88 366 76 135 324 86 80 691 55 122 983 165

Added Vol: 0 8 0 0 6 0 0 4 0 0 5 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 88 374 76 135 330 86 80 695 55 122 988 165

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 88 374 76 135 330 86 80 695 55 122 988 165

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 88 374 76 135 330 86 80 695 55 122 988 165

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 88 374 76 135 330 86 80 695 55 122 988 165

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85

Lanes: 1.00 1.66 0.34 1.00 1.59 0.41 1.00 1.85 0.15 1.00 2.00 1.00

Final Sat.: 1700 2826 574 1700 2696 704 1700 3150 250 1700 3400 1445

Capacity Analysis Module:

Vol/Sat: 0.05 0.13 0.13 0.08 0.12 0.12 0.05 0.22 0.22 0.07 0.29 0.11

Crit Moves: **** **** **** ****

```

-----
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #102 WEST STREET AT LAMPSON AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.409
Loss Time (sec):      5            Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        20           Level Of Service:                A
*****
Street Name:          WEST STREET          LAMPSON AVENUE
Approach:             North Bound        South Bound        East Bound        West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Prot+Permit        Prot+Permit        Permitted         Permitted
Rights:               Include           Include           Include           Include
Min. Green:           0  0  0            0  0  0            0  0  0            0  0  0
Y+R:                  4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0
Lanes:                1 0 1 1 0          1 0 1 1 0          1 0 1 0 1          1 0 1 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             38 364 78          62 339 78          77 228 81          68 147 72
Growth Adj:           1.04 1.04 1.04    1.04 1.04 1.04    1.04 1.04 1.04    1.04 1.04 1.04
Initial Bse:          40 379 81          64 353 81          80 237 84          71 153 75
Added Vol:            0  1  0            4  3  0            0  3  0            0  1  2
PasserByVol:          0  0  0            0  0  0            0  0  0            0  0  0
Initial Fut:          40 380 81          68 356 81          80 240 84          71 154 77
User Adj:             1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Volume:           40 380 81          68 356 81          80 240 84          71 154 77
Reduct Vol:           0  0  0            0  0  0            0  0  0            0  0  0
Reduced Vol:          40 380 81          68 356 81          80 240 84          71 154 77
PCE Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
FinalVolume:          40 380 81          68 356 81          80 240 84          71 154 77
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700    1700 1700 1700    1700 1700 1700    1700 1700 1700
Adjustment:           1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 0.85    1.00 1.00 0.85
Lanes:               1.00 1.65 0.35    1.00 1.63 0.37    1.00 1.00 1.00    1.00 1.00 1.00
Final Sat.:          1700 2801 599    1700 2768 632    1700 1700 1445    1700 1700 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.02 0.14 0.14    0.04 0.13 0.13    0.05 0.14 0.06    0.04 0.09 0.05
Crit Moves:           ****             ****             ****             ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #102 WEST STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.470

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 22 Level Of Service: A

Street Name: WEST STREET LAMPSON AVENUE

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:

Base Vol:	60	432	70	56	328	57	47	212	50	60	324	114
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	62	449	73	58	341	59	49	220	52	62	337	119
Added Vol:	0	3	0	4	3	0	0	3	0	0	3	5
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	452	73	62	344	59	49	223	52	62	340	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	452	73	62	344	59	49	223	52	62	340	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	452	73	62	344	59	49	223	52	62	340	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	62	452	73	62	344	59	49	223	52	62	340	124

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	1.00	1.72	0.28	1.00	1.71	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1700	2929	471	1700	2900	500	1700	1700	1445	1700	1700	1445

Capacity Analysis Module:

Vol/Sat:	0.04	0.15	0.15	0.04	0.12	0.12	0.03	0.13	0.04	0.04	0.20	0.09
Crit Moves:	****			****			****			****		

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-----
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #103 HARBOR STREET AT KATELLA AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.539
Loss Time (sec):      5            Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        25            Level Of Service:          A
*****
Street Name:          HARBOR STREET          KATELLA AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Protected          Protected          Protected          Protected
Rights:               Include           Include           Include           Include
Min. Green:           0 0 0            0 0 0            0 0 0            0 0 0
Y+R:                  4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:                2 0 3 0 1        2 0 3 0 1        2 0 3 0 1        2 0 3 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             106 542 237      87 502 192      146 1126 127      199 717 68
Growth Adj:           1.04 1.04 1.04   1.04 1.04 1.04   1.04 1.04 1.04   1.04 1.04 1.04
Initial Bse:          110 564 246      90 522 200      152 1171 132      207 746 71
Added Vol:            3 14 1           0 34 0           0 0 7            3 0 0
PasserByVol:          0 0 0            0 0 0            0 0 0            0 0 0
Initial Fut:          113 578 247      90 556 200      152 1171 139      210 746 71
User Adj:             1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
PHF Volume:           113 578 247      90 556 200      152 1171 139      210 746 71
Reduct Vol:           0 0 0            0 0 0            0 0 0            0 0 0
Reduced Vol:          113 578 247      90 556 200      152 1171 139      210 746 71
PCE Adj:              1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00   1.00 1.00 1.00
FinalVolume:          113 578 247      90 556 200      152 1171 139      210 746 71
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700   1700 1700 1700   1700 1700 1700   1700 1700 1700
Adjustment:           1.00 1.00 0.85   1.00 1.00 0.85   1.00 1.00 0.85   1.00 1.00 0.85
Lanes:                2.00 3.00 1.00   2.00 3.00 1.00   2.00 3.00 1.00   2.00 3.00 1.00
Final Sat.:           3400 5100 1445   3400 5100 1445   3400 5100 1445   3400 5100 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.03 0.11 0.17   0.03 0.11 0.14   0.04 0.23 0.10   0.06 0.15 0.05
Crit Moves:           ****  ****          ****  ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #103 HARBOR STREET AT KATELLA AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.655
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 33 Level Of Service: B

Table with columns for Street Name (HARBOR STREET, KATELLA AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

-----|-----|-----|-----|

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

-----|-----|-----|-----|

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

-----|-----|-----|-----|

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #104 HARBOR STREET AT ORANGEWOOD AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.542
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with columns for Street Name (HARBOR STREET, ORANGEWOOD AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected), Rights (Include), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach and movement.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for each approach and movement.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat and Crit Moves for each approach and movement.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #104 HARBOR STREET AT ORANGEWOOD AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.599
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 29 Level Of Service: A

Street Name:	HARBOR STREET					ORANGEWOOD AVENUE						
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:

Base Vol:	101	1012	169	109	902	50	49	338	72	169	601	88
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	105	1052	176	113	938	52	51	352	75	176	625	92
Added Vol:	3	50	3	0	41	0	0	0	3	3	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	108	1102	179	113	979	52	51	352	78	179	625	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	1102	179	113	979	52	51	352	78	179	625	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	1102	179	113	979	52	51	352	78	179	625	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	1102	179	113	979	52	51	352	78	179	625	92

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.58	0.42	1.00	2.85	0.15	1.00	1.64	0.36	1.00	1.74	0.26
Final Sat.:	1700	4388	712	1700	4843	257	1700	2783	617	1700	2966	434

Capacity Analysis Module:

Vol/Sat:	0.06	0.25	0.25	0.07	0.20	0.20	0.03	0.13	0.13	0.11	0.21	0.21
Crit Moves:	****			****			****			****		

```

-----
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #105 HARBOR STREET AT CHAPMAN AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.543
Loss Time (sec):      5           Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        26          Level Of Service:                A
*****
Street Name:          HARBOR STREET          CHAPMAN AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Protected          Protected          Protected          Protected
Rights:               Include           Include           Include           Include
Min. Green:           0 0 0            0 0 0            0 0 0            0 0 0
Y+R:                  4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:                2 0 3 0 1        2 0 3 0 1        2 0 2 0 1        2 0 2 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             95 642 120        112 504 97        157 981 116        69 441 85
Growth Adj:           1.04 1.04 1.04    1.04 1.04 1.04    1.04 1.04 1.04    1.04 1.04 1.04
Initial Bse:          99 668 125        116 524 101       163 1020 121       72 459 88
Added Vol:            2 20 3            0 49 0            0 0 4            8 0 0
PasserByVol:         0 0 0            0 0 0            0 0 0            0 0 0
Initial Fut:          101 688 128       116 573 101       163 1020 125       80 459 88
User Adj:             1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Volume:           101 688 128       116 573 101       163 1020 125       80 459 88
Reduct Vol:           0 0 0            0 0 0            0 0 0            0 0 0
Reduced Vol:          101 688 128       116 573 101       163 1020 125       80 459 88
PCE Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
FinalVolume:          101 688 128       116 573 101       163 1020 125       80 459 88
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700    1700 1700 1700    1700 1700 1700    1700 1700 1700
Adjustment:           1.00 1.00 0.85    1.00 1.00 0.85    1.00 1.00 0.85    1.00 1.00 0.85
Lanes:                2.00 3.00 1.00    2.00 3.00 1.00    2.00 2.00 1.00    2.00 2.00 1.00
Final Sat.:           3400 5100 1445    3400 5100 1445    3400 3400 1445    3400 3400 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.03 0.13 0.09    0.03 0.11 0.07    0.05 0.30 0.09    0.02 0.13 0.06
Crit Moves:           ****             ****             ****             ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #105 HARBOR STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.626
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: B

Table with columns for Street Name (HARBOR STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

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Volume Module:

Table with columns for various volume and adjustment factors: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLE Adj, Final Volume.

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Saturation Flow Module:

Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

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Capacity Analysis Module:

Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E)
Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B [10.3]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Harbor Boulevard and Project Access 2 / Sheraton Access with various movement and lane configurations.

Volume Module table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Final Volume. Rows show volume data for each approach.

Critical Gap Module table with columns: Critical Gap, FollowUpTim. Rows show critical gap and follow-up time for each approach.

Capacity Module table with columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows show capacity-related metrics for each approach.

Level Of Service Module table with columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows show level of service and delay for each approach.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E
Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B(13.0)

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include Harbor Boulevard and Project Access 2 / Sheraton Access with various movement and lane configurations.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module table showing Critical Gap and FollowUpTim for each approach.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for each approach.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #135 Harbor Boulevard (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: E[37.0]

Street Name: Harbor Boulevard Twintree Lane

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 1 0 2 1 0 1 0 2 1 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:

Table with 13 columns and 13 rows of volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table with 13 columns and 2 rows of critical gap data including Critical Gp and FollowUpTim.

Capacity Module:

Table with 13 columns and 4 rows of capacity data including Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table with 13 columns and 10 rows of level of service data including 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #135 Harbor Boulevard (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 5.8 Worst Case Level Of Service: F[156.3]

Street Name:	Harbor Boulevard						Twintree Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1	0	2	1	0	2	1	0	0	0	0	1

Volume Module:

Base Vol:	31	1315	64	36	920	21	17	3	18	18	4	45
Growth Adj:	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Initial Bse:	32	1354	66	37	948	22	18	3	19	19	4	46
Added Vol:	0	70	0	0	58	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	1424	66	37	1006	22	18	3	19	19	4	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	32	1424	66	37	1006	22	18	3	19	19	4	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	32	1424	66	37	1006	22	18	3	19	19	4	46

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxxx	4.1	xxxx	xxxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxxx	2.2	xxxx	xxxxxx	3.5	4.0	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	1027	xxxx	xxxxxx	1490	xxxx	xxxxxx	1631	2645	346	1932	2623	508
Potent Cap.:	684	xxxx	xxxxxx	457	xxxx	xxxxxx	69	24	656	41	24	516
Move Cap.:	684	xxxx	xxxxxx	457	xxxx	xxxxxx	48	21	656	32	21	516
Volume/Cap:	0.05	xxxx	xxxx	0.08	xxxx	xxxx	0.36	0.15	0.03	0.58	0.19	0.09

Level Of Service Module:

2Way95thQ:	0.1	xxxx	xxxxxx	0.3	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
Control Del:	10.5	xxxx	xxxxxx	13.6	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
LOS by Move:	B	*	*	B	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	72	xxxxxx	xxxx	80	xxxxxx
SharedQueue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	2.3	xxxxxx	xxxxxx	4.5	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	102	xxxxxx	xxxxxx	156	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	F	*	*	F	*
ApproachDel:	xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	102.4	xxxxxxx	xxxxxxx	156.3	xxxxxxx	
ApproachLOS:	*	*	*	*	*	*	F	*	F	F	*	F

 Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #106 HARBOR STREET AT LAMPSON AVENUE
*****
Cycle (sec):      100          Critical Vol./Cap.(X):      0.518
Loss Time (sec):   5          Average Delay (sec/veh):    xxxxxx
Optimal Cycle:    24          Level Of Service:          A
*****
Street Name:      HARBOR STREET          LAMPSON AVENUE
Approach:         North Bound          South Bound          East Bound          West Bound
Movement:        L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:         Prot+Permit          Prot+Permit          Permitted           Permitted
Rights:          Include             Include             Include             Include
Min. Green:      0 0 0              0 0 0              0 0 0              0 0 0
Y+R:            4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0
Lanes:          1 0 2 1 0          1 0 2 1 0          1 0 1 0 1          1 0 1 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:        66 825 112        59 696 20          46 279 64          90 152 63
Growth Adj:     1.04 1.04 1.04  1.04 1.04 1.04  1.04 1.04 1.04  1.04 1.04 1.04
Initial Bse:     69 858 116        61 724 21          48 290 67          94 158 66
Added Vol:       3 25 6            0 61 0             0 0 7              15 0 0
PasserByVol:    0 0 0            0 0 0             0 0 0              0 0 0
Initial Fut:    72 883 122        61 785 21          48 290 74          109 158 66
User Adj:       1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:        1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     72 883 122        61 785 21          48 290 74          109 158 66
Reduct Vol:     0 0 0            0 0 0             0 0 0              0 0 0
Reduced Vol:    72 883 122        61 785 21          48 290 74          109 158 66
PCE Adj:        1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:        1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    72 883 122        61 785 21          48 290 74          109 158 66
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:       1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.85  1.00 1.00 0.85
Lanes:         1.00 2.63 0.37  1.00 2.92 0.08  1.00 1.00 1.00  1.00 1.00 1.00
Final Sat.:    1700 4479 621  1700 4968 132  1700 1700 1445  1700 1700 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:        0.04 0.20 0.20  0.04 0.16 0.16  0.03 0.17 0.05  0.06 0.09 0.05
Crit Moves:     ****             ****             ****             ****
*****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #106 HARBOR STREET AT LAMPSON AVENUE
*****
Cycle (sec):      100          Critical Vol./Cap.(X):      0.608
Loss Time (sec):   5           Average Delay (sec/veh):    xxxxxx
Optimal Cycle:    29           Level Of Service:          B
*****
Street Name:      HARBOR STREET          LAMPSON AVENUE
Approach:         North Bound          South Bound          East Bound          West Bound
Movement:        L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:         Prot+Permit          Prot+Permit          Permitted           Permitted
Rights:          Include             Include             Include             Include
Min. Green:      0   0   0           0   0   0           0   0   0           0   0   0
Y+R:            4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0
Lanes:          1 0 2 1 0          1 0 2 1 0          1 0 1 0 1          1 0 1 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:        96 1151 144    44 791 52    55 196 72    131 354 55
Growth Adj:     1.04 1.04 1.04  1.04 1.04 1.04  1.04 1.04 1.04  1.04 1.04 1.04
Initial Bse:    100 1197 150    46 823 54    57 204 75    136 368 57
Added Vol:      8   70 17    0  58 0    0  0 6    14  0 0
PasserByVol:    0   0 0    0  0 0    0  0 0    0  0 0
Initial Fut:    108 1267 167    46 881 54    57 204 81    150 368 57
User Adj:       1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:        1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     108 1267 167    46 881 54    57 204 81    150 368 57
Reduct Vol:     0   0 0    0  0 0    0  0 0    0  0 0
Reduced Vol:    108 1267 167    46 881 54    57 204 81    150 368 57
PCE Adj:        1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:        1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    108 1267 167    46 881 54    57 204 81    150 368 57
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:       1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.85  1.00 1.00 0.85
Lanes:          1.00 2.65 0.35  1.00 2.83 0.17  1.00 1.00 1.00  1.00 1.00 1.00
Final Sat.:     1700 4507 593  1700 4805 295  1700 1700 1445  1700 1700 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:        0.06 0.28 0.28  0.03 0.18 0.18  0.03 0.12 0.06  0.09 0.22 0.04
Crit Moves:     ****          ****          ****          ****
*****

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #110 HARBOR BOULEVARD AT BLUE SPRUCE AVENUE

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: D [30.4]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes. Rows include HARBOR BOULEVARD and BLUE SPRUCE AVENUE with various approach and movement details.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module: Table showing critical gap and follow-up time values for different approaches.

Capacity Module: Table showing capacity-related metrics such as Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table showing Level of Service (LOS) by movement, shared queue, shared LOS, and approach delay/LOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #110 HARBOR BOULEVARD AT BLUE SPRUCE AVENUE

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: F[121.9]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for Harbor Boulevard and Blue Spruce Avenue.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Table for Critical Gap Module showing Critical Gap and FollowUpTim values.

Table for Capacity Module showing Cnflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Table for Level Of Service Module showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #132 HARBOR BOULEVARD AT PALM STREET

Cycle (sec): 100 Critical Vol./Cap.(X): 0.381
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 19 Level Of Service: A

Table with columns for Street Name (HARBOR BOULEVARD, PALM STREET), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #132 HARBOR BOULEVARD AT PALM STREET

Cycle (sec): 100 Critical Vol./Cap.(X): 0.540

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 25 Level Of Service: A

Street Name: HARBOR BOULEVARD PALM STREET

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Protected Permitted Permitted

Rights: Ignore Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 1 0 2 1 0 0 0 1 0 0 1

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Volume Module:

Base Vol: 35 1190 30 71 850 126 135 49 38 8 62 155

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 36 1238 31 74 884 131 140 51 40 8 64 161

Added Vol: 0 50 0 0 60 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 36 1288 31 74 944 131 140 51 40 8 64 161

User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 36 1288 0 74 944 131 140 51 40 8 64 161

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 36 1288 0 74 944 131 140 51 40 8 64 161

PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 36 1288 0 74 944 131 140 51 40 8 64 161

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85

Lanes: 1.00 3.00 1.00 1.00 2.63 0.37 0.61 0.22 0.17 0.11 0.89 1.00

Final Sat.: 1700 5100 1445 1700 4478 622 1034 375 291 194 1506 1445

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Capacity Analysis Module:

Vol/Sat: 0.02 0.25 0.00 0.04 0.21 0.21 0.08 0.14 0.14 0.00 0.04 0.11

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #111 HARBOR STREET AT GARDEN GROVE BOULEVARD

Cycle (sec): 100 Critical Vol./Cap.(X): 0.571

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

Street Name: HARBOR STREET GARDEN GROVE BOULEVARD

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 1 0 3 0 1 2 0 2 1 0 2 0 2 1 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 189 839 193 86 757 91 198 558 281 149 324 48

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 197 873 201 89 787 95 206 580 292 155 337 50

Added Vol: 0 39 0 4 16 2 4 0 0 0 0 0 9

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 197 912 201 93 803 97 210 580 292 155 337 59

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 197 912 201 93 803 97 210 580 292 155 337 59

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 197 912 201 93 803 97 210 580 292 155 337 59

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 197 912 201 93 803 97 210 580 292 155 337 59

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00

Lanes: 1.00 3.00 1.00 1.00 3.00 1.00 2.00 2.00 1.00 2.00 2.55 0.45

Final Sat.: 1700 5100 1445 1700 5100 1445 3400 3400 1445 3400 4341 759

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Capacity Analysis Module:

Vol/Sat: 0.12 0.18 0.14 0.05 0.16 0.07 0.06 0.17 0.20 0.05 0.08 0.08

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #111 HARBOR STREET AT GARDEN GROVE BOULEVARD

Cycle (sec): 100 Critical Vol./Cap.(X): 0.701

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 37 Level Of Service: C

Street Name: HARBOR STREET GARDEN GROVE BOULEVARD

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 1 0 3 0 1 2 0 2 1 0 2 0 2 1 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 341 1138 223 93 822 150 291 577 196 206 763 91

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 355 1184 232 97 855 156 303 600 204 214 794 95

Added Vol: 0 37 0 11 45 5 4 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 355 1221 232 108 900 161 307 600 204 214 794 104

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 355 1221 232 108 900 161 307 600 204 214 794 104

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 355 1221 232 108 900 161 307 600 204 214 794 104

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 355 1221 232 108 900 161 307 600 204 214 794 104

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 3.00 1.00 1.00 3.00 1.00 2.00 2.24 0.76 2.00 2.65 0.35

Final Sat.: 1700 5100 1445 1700 5100 1445 3400 3807 1293 3400 4511 589

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Capacity Analysis Module:

Vol/Sat: 0.21 0.24 0.16 0.06 0.18 0.11 0.09 0.16 0.16 0.06 0.18 0.18

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #112 HARBOR STREET AT CA-22 WB OFF-RAMP / BANNER DR.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.692

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 36 Level Of Service: B

Street Name: HARBOR STREET CA-22 WB OFF-RAMP / BANNER DR.

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Permitted Split Phase Split Phase

Rights: Ignore Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 0 0 2 1 0 0 0 1 1 0 0 1

Volume Module:

Base Vol: 37 1149 413 0 1187 29 61 0 106 816 55 109

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 38 1195 430 0 1234 30 63 0 110 849 57 113

Added Vol: 0 28 0 0 16 0 0 0 0 0 0 11

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 38 1223 430 0 1250 30 63 0 110 849 57 124

User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 38 1223 0 0 1250 30 63 0 110 849 57 124

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 38 1223 0 0 1250 30 63 0 110 849 57 124

PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Volume: 38 1223 0 0 1250 30 63 0 110 849 57 124

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85

Lanes: 1.00 3.00 1.00 0.00 2.93 0.07 0.36 0.01 0.63 1.87 0.13 1.00

Final Sat.: 1700 5100 1445 0 4980 120 621 0 1079 3185 215 1445

Capacity Analysis Module:

Vol/Sat: 0.02 0.24 0.00 0.00 0.25 0.25 0.10 0.00 0.10 0.27 0.27 0.09

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #112 HARBOR STREET AT CA-22 WB OFF-RAMP / BANNER DR.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.685

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 36 Level Of Service: B

Street Name: HARBOR STREET CA-22 WB OFF-RAMP / BANNER DR.

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Permitted Split Phase Split Phase

Rights: Ignore Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 0 0 2 1 0 0 0 1 1 0 0 1

Volume Module:

Base Vol: 70 1511 437 0 1285 52 86 0 69 608 99 171

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 73 1571 454 0 1336 54 89 0 72 632 103 178

Added Vol: 0 27 0 0 45 0 0 0 0 0 0 10

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 73 1598 454 0 1381 54 89 0 72 632 103 188

User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 73 1598 0 0 1381 54 89 0 72 632 103 188

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 73 1598 0 0 1381 54 89 0 72 632 103 188

PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 73 1598 0 0 1381 54 89 0 72 632 103 188

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85

Lanes: 1.00 3.00 1.00 0.00 2.89 0.11 0.55 0.00 0.45 1.72 0.28 1.00

Final Sat.: 1700 5100 1445 0 4908 192 943 0 757 2924 476 1445

Capacity Analysis Module:

Vol/Sat: 0.04 0.31 0.00 0.00 0.28 0.28 0.09 0.00 0.09 0.22 0.22 0.13

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #113 HARBOR STREET AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.895

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 84 Level Of Service: D

Street Name: HARBOR STREET TRASK AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

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Control: Protected Protected Protected Protected

Rights: Include Include Include Ovl

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 1 0 3 0 1 1 0 2 0 1 1 0 2 0 1

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Volume Module:

Base Vol: 50 802 375 338 1426 58 109 561 428 98 286 688

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 52 834 390 352 1483 60 113 583 445 102 297 716

Added Vol: 0 7 0 4 3 0 22 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 52 841 390 356 1486 60 135 583 445 102 297 716

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 52 841 390 356 1486 60 135 583 445 102 297 716

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 52 841 390 356 1486 60 135 583 445 102 297 716

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 52 841 390 356 1486 60 135 583 445 102 297 716

OvlAdjVol: 413

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 1.00 3.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00 1.00 2.00 1.00

Final Sat.: 1700 5100 1445 1700 5100 1445 1700 3400 1445 1700 3400 1445

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Capacity Analysis Module:

Vol/Sat: 0.03 0.16 0.27 0.21 0.29 0.04 0.08 0.17 0.31 0.06 0.09 0.50

OvlAdjV/S: 0.29

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #113 HARBOR STREET AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.993
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

Table with columns for Street Name (HARBOR STREET, TRASK AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, and OvlAdjVol.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #114 CA-22 EB ON-RAMP AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.508
Loss Time (sec): 5 Average Delay (sec/veh): XXXXXX
Optimal Cycle: 24 Level Of Service: A

Table with columns for Street Name (CA-22 EB ON-RAMP, TRASK AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Protected, Permitted), Rights (Include, Ignore), and various timing parameters like Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each approach.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each approach.

Capacity Analysis Module table showing Vol/Sat and Crit Moves for each approach.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #114 CA-22 EB ON-RAMP AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.525

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 25 Level Of Service: A

Street Name: CA-22 EB ON-RAMP TRASK AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Permitted Protected Permitted

Rights: Include Ignore Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 0 0 0 0 0 0 0 0 1 2 0 1 0 0 0 0 1 1 0

Volume Module:

Base Vol: 0 0 0 0 0 295 824 516 0 0 668 48

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 0 0 0 0 0 307 857 537 0 0 695 50

Added Vol: 0 0 0 0 0 0 12 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 0 0 0 0 307 869 537 0 0 695 50

User Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 0 0 0 0 0 869 537 0 0 695 50

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 0 0 0 0 0 0 869 537 0 0 695 50

PCE Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 0 0 0 0 0 0 869 537 0 0 695 50

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00

Lanes: 0.00 0.00 0.00 0.00 0.00 1.00 2.00 1.00 0.00 0.00 1.87 0.13

Final Sat.: 0 0 0 0 0 1445 3400 1700 0 0 3172 228

Capacity Analysis Module:

Vol/Sat: 0.00 0.00 0.00 0.00 0.00 0.00 0.26 0.32 0.00 0.00 0.22 0.22

Crit Moves: **** *

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #115 HASTER STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.541

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 26 Level Of Service: A

Street Name: HASTER STREET CHAPMAN AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 3 0 1 1 0 2 0 1

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Volume Module:

Base Vol: 126 457 94 115 482 98 104 1031 123 83 404 62

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 131 475 98 120 501 102 108 1072 128 86 420 64

Added Vol: 0 0 3 0 0 0 0 3 0 8 8 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 131 475 101 120 501 102 108 1075 128 94 428 64

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 131 475 101 120 501 102 108 1075 128 94 428 64

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 131 475 101 120 501 102 108 1075 128 94 428 64

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 131 475 101 120 501 102 108 1075 128 94 428 64

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00

Final Sat.: 1700 3400 1445 1700 3400 1445 1700 5100 1445 1700 3400 1445

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Capacity Analysis Module:

Vol/Sat: 0.08 0.14 0.07 0.07 0.15 0.07 0.06 0.21 0.09 0.06 0.13 0.04

Crit Moves: **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #115 HASTER STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.685
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

Table with columns for Street Name (HASTER STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #116 HASTER STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.494
Loss Time (sec): 5 Average Delay (sec/veh): XXXXXX
Optimal Cycle: 23 Level Of Service: A

Table with columns for Street Name (HASTER STREET, LAMPSON AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #116 HASTER STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.607
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: B

Street Name: HASTER STREET LAMPSON AVENUE
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 1 0 1

Volume Module:
Base Vol: 138 604 62 67 602 68 99 230 77 105 358 78
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 144 628 64 70 626 71 103 239 80 109 372 81
Added Vol: 0 0 0 0 0 0 8 9 8 0 0 6 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 144 628 64 70 626 79 112 247 80 109 378 81
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 144 628 64 70 626 79 112 247 80 109 378 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 144 628 64 70 626 79 112 247 80 109 378 81
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 144 628 64 70 626 79 112 247 80 109 378 81

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Sat.: 1700 3400 1445 1700 3400 1445 1700 1700 1445 1700 1700 1445

Capacity Analysis Module:
Vol/Sat: 0.08 0.18 0.04 0.04 0.18 0.05 0.07 0.15 0.06 0.06 0.22 0.06
Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #117 LEWIS STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.747
Loss Time (sec): 5 Average Delay (sec/veh): XXXXXX
Optimal Cycle: 43 Level Of Service: C

Table with columns for Street Name (LEWIS STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #117 LEWIS STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.771
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 47 Level Of Service: C

Street Name: LEWIS STREET CHAPMAN AVENUE
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 Control: Protected Protected Protected Protected
 Rights: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
 Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 2 1 0 1 0 2 0 1

Volume Module:
 Base Vol: 174 351 338 140 232 67 94 798 87 173 1078 184
 Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
 Initial Bse: 181 365 352 146 241 70 98 830 90 180 1121 191
 Added Vol: 0 0 0 0 0 0 0 0 19 0 0 15 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 181 365 352 146 241 70 98 849 90 180 1136 191
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 181 365 352 146 241 70 98 849 90 180 1136 191
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 181 365 352 146 241 70 98 849 90 180 1136 191
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 181 365 352 146 241 70 98 849 90 180 1136 191

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 0.85
 Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.71 0.29 1.00 2.00 1.00
 Final Sat.: 1700 1700 1445 1700 1700 1445 1700 4609 491 1700 3400 1445

Capacity Analysis Module:
 Vol/Sat: 0.11 0.21 0.24 0.09 0.14 0.05 0.06 0.18 0.18 0.11 0.33 0.13
 Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #118 STATE COLLEGE BLVD. AT I-5 NB RAMPS

Cycle (sec): 100 Critical Vol./Cap.(X): 0.310
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with columns for Street Name (STATE COLLEGE BOULEVARD, I-5 NB RAMPS), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #118 STATE COLLEGE BLVD. AT I-5 NB RAMPS

Cycle (sec): 100 Critical Vol./Cap.(X): 0.419
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

Table with columns for Street Name (STATE COLLEGE BOULEVARD, I-5 NB RAMPS), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLE Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #119 STATE COLLEGE BLVD. AT I-5 SB RAMPS

Cycle (sec): 100 Critical Vol./Cap.(X): 0.320
Loss Time (sec): 5 Average Delay (sec/veh): XXXXXX
Optimal Cycle: 18 Level Of Service: A

Street Name: STATE COLLEGE BOULEVARD I-5 SB RAMPS

Table with columns for Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #119 STATE COLLEGE BLVD. AT I-5 SB RAMPS

Cycle (sec): 100 Critical Vol./Cap. (X): 0.313
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with columns for Street Name (STATE COLLEGE BOULEVARD), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #120 STATE COLLEGE BLVD. AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.645
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: B

Table with columns for Street Name (STATE COLLEGE BOULEVARD, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, OvlAdjVol.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, OvlAdjV/S, Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #120 STATE COLLEGE BLVD. AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.616
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 30 Level Of Service: B

Street Name:	STATE COLLEGE BOULEVARD				CHAPMAN AVENUE										
Approach:	North Bound		South Bound		East Bound		West Bound								
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Protected		Protected		Protected		Protected								
Rights:	Ovl		Ovl		Ovl		Include								
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	2	0	3	0	2	2	0	3	0	1	2	0	3	0	1

Volume Module:

Base Vol:	150	840	559	82	577	395	358	1124	88	362	1027	92
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	156	874	581	85	600	411	372	1169	92	376	1068	96
Added Vol:	0	0	0	0	0	10	8	6	0	0	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	156	874	581	85	600	421	380	1175	92	376	1069	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	156	874	581	85	600	421	380	1175	92	376	1069	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	874	581	85	600	421	380	1175	92	376	1069	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	156	874	581	85	600	421	380	1175	92	376	1069	96
OvlAdjVol:	261		259		25							

Saturation Flow Module:

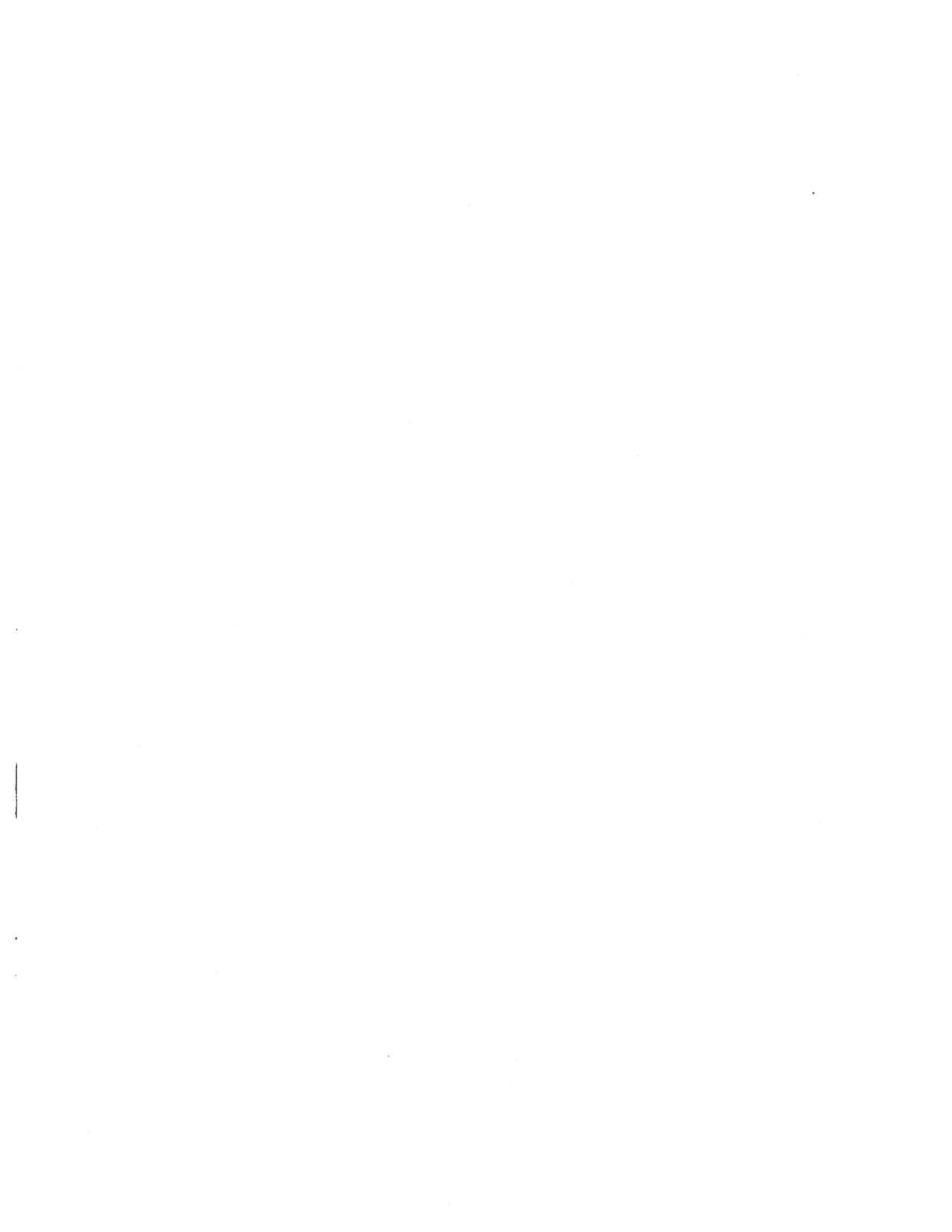
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	2.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	2890	3400	5100	1445	3400	5100	1445	3400	5100	1445

Capacity Analysis Module:

Vol/Sat:	0.05	0.17	0.20	0.03	0.12	0.29	0.11	0.23	0.06	0.11	0.21	0.07
OvlAdjV/S:	0.09		0.18		0.02							
Crit Moves:	****		****		****		****		****			

Appendix E

Project Buildout (Year 2014) With Project Conditions
Intersection Analysis Worksheets



Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #101 WEST STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.652
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 33 Level Of Service: B

Street Name:	WEST STREET						CHAPMAN AVENUE					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Movement:												
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Permit+Prot		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	2

Volume Module:

Base Vol:	48	269	115	156	281	85	138	1037	64	66	461	117
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	50	280	120	162	292	88	144	1078	67	69	479	122
Added Vol:	0	3	0	13	7	0	0	12	0	0	7	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	283	120	175	299	88	144	1090	67	69	486	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	283	120	175	299	88	144	1090	67	69	486	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	283	120	175	299	88	144	1090	67	69	486	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	50	283	120	175	299	88	144	1090	67	69	486	131

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
Lanes:	1.00	1.41	0.59	1.00	1.54	0.46	1.00	1.88	0.12	1.00	2.00	1.00
Final Sat.:	1700	2389	1011	1700	2625	775	1700	3204	196	1700	3400	1445

Capacity Analysis Module:

Vol/Sat:	0.03	0.12	0.12	0.10	0.11	0.11	0.08	0.34	0.34	0.04	0.14	0.09
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #101 WEST STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.611

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 30 Level Of Service: B

Street Name: WEST STREET CHAPMAN AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Prot+Permit Prot+Permit Prot+Permit Permit+Prot

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 2 0 1

-----|-----|-----|-----|

Volume Module:

Base Vol: 85 352 73 130 312 83 77 664 53 117 945 159

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 88 366 76 135 324 86 80 691 55 122 983 165

Added Vol: 0 8 0 16 6 0 0 14 0 0 12 13

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 88 374 76 151 330 86 80 705 55 122 995 178

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 88 374 76 151 330 86 80 705 55 122 995 178

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 88 374 76 151 330 86 80 705 55 122 995 178

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 88 374 76 151 330 86 80 705 55 122 995 178

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85

Lanes: 1.00 1.66 0.34 1.00 1.59 0.41 1.00 1.85 0.15 1.00 2.00 1.00

Final Sat.: 1700 2826 574 1700 2696 704 1700 3153 247 1700 3400 1445

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Capacity Analysis Module:

Vol/Sat: 0.05 0.13 0.13 0.09 0.12 0.12 0.05 0.22 0.22 0.07 0.29 0.12

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #102 WEST STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.412

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 20 Level Of Service: A

Street Name: WEST STREET LAMPSON AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Prot+Permit Prot+Permit Permitted Permitted

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 1 0 1 0 1 1 0 1 1 0 1 0 1

-----|-----|-----|-----|

Volume Module:

Base Vol: 38 364 78 62 339 78 77 228 81 68 147 72

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 40 379 81 64 353 81 80 237 84 71 153 75

Added Vol: 0 1 0 4 3 0 0 8 0 0 5 2

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 40 380 81 68 356 81 80 245 84 71 158 77

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 40 380 81 68 356 81 80 245 84 71 158 77

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 40 380 81 68 356 81 80 245 84 71 158 77

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 40 380 81 68 356 81 80 245 84 71 158 77

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 1.00 1.65 0.35 1.00 1.63 0.37 1.00 1.00 1.00 1.00 1.00 1.00

Final Sat.: 1700 2801 599 1700 2768 632 1700 1700 1445 1700 1700 1445

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Capacity Analysis Module:

Vol/Sat: 0.02 0.14 0.14 0.04 0.13 0.13 0.05 0.14 0.06 0.04 0.09 0.05

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #102 WEST STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.473
Loss Time (sec): 5 Average Delay (sec/veh): XXXXXX
Optimal Cycle: 23 Level Of Service: A

Table with columns for Street Name (WEST STREET, LAMPSON AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1 (Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #103 HARBOR STREET AT KATELLA AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.543
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 26 Level Of Service: A

Street Name: HARBOR STREET					KATELLA AVENUE												
Approach: North Bound					South Bound			East Bound			West Bound						
Movement:	L	T	R		L	T	R	L	T	R	L	T	R				
Control:	Protected				Protected			Protected			Protected						
Rights:	Include				Include			Include			Include						
Min. Green:	0	0	0		0	0	0	0	0	0	0	0	0				
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Lanes:	2	0	3	0	1		2	0	3	0	1		2	0	3	0	1

Volume Module:

Base Vol:	106	542	237	87	502	192	146	1126	127	199	717	68
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	110	564	246	90	522	200	152	1171	132	207	746	71
Added Vol:	11	57	5	0	101	0	0	0	20	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	121	621	251	90	623	200	152	1171	152	215	746	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	121	621	251	90	623	200	152	1171	152	215	746	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	621	251	90	623	200	152	1171	152	215	746	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	621	251	90	623	200	152	1171	152	215	746	71

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1445	3400	5100	1445	3400	5100	1445	3400	5100	1445

Capacity Analysis Module:

Vol/Sat:	0.04	0.12	0.17	0.03	0.12	0.14	0.04	0.23	0.11	0.06	0.15	0.05
Crit Moves:			****	****			****		****			

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #103 HARBOR STREET AT KATELLA AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.659
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 33 Level Of Service: B

Street Name:	HARBOR STREET						KATELLA AVENUE					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Movement:												
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	1	2	0	3	0	1	1

Volume Module:

Base Vol:	150	761	246	81	581	314	246	913	169	219	1255	106
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	156	791	256	84	604	327	256	950	176	228	1305	110
Added Vol:	21	103	8	0	113	0	0	0	23	9	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	177	894	264	84	717	327	256	950	199	237	1305	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	177	894	264	84	717	327	256	950	199	237	1305	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	177	894	264	84	717	327	256	950	199	237	1305	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	177	894	264	84	717	327	256	950	199	237	1305	110

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	1445	3400	5100	1445	3400	5100	1445	3400	5100	1445

Capacity Analysis Module:

Vol/Sat:	0.05	0.18	0.18	0.02	0.14	0.23	0.08	0.19	0.14	0.07	0.26	0.08
Crit Moves:	****					****	****				****	

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #104 HARBOR STREET AT ORANGEWOOD AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Table with columns for Street Name (HARBOR STREET, ORANGEWOOD AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #104 HARBOR STREET AT ORANGEWOOD AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.622
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 30 Level Of Service: B

Street Name: HARBOR STREET ORANGEWOOD AVENUE
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 Control: Protected Protected Protected Protected
 Rights: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
 Lanes: 1 0 2 1 0 1 0 2 1 0 1 0 1 1 0

Volume Module:
 Base Vol: 101 1012 169 109 902 50 49 338 72 169 601 88
 Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
 Initial Bse: 105 1052 176 113 938 52 51 352 75 176 625 92
 Added Vol: 8 132 8 0 144 0 0 0 9 9 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 113 1184 184 113 1082 52 51 352 84 185 625 92
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 113 1184 184 113 1082 52 51 352 84 185 625 92
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 113 1184 184 113 1082 52 51 352 84 185 625 92
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 113 1184 184 113 1082 52 51 352 84 185 625 92

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Lanes: 1.00 2.60 0.40 1.00 2.86 0.14 1.00 1.61 0.39 1.00 1.74 0.26
 Final Sat.: 1700 4415 685 1700 4866 234 1700 2745 655 1700 2966 434

Capacity Analysis Module:
 Vol/Sat: 0.07 0.27 0.27 0.07 0.22 0.22 0.03 0.13 0.13 0.11 0.21 0.21
 Crit Moves: **** **** **** ****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #105 HARBOR STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.564
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

Table with columns for Street Name (HARBOR STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #105 HARBOR STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.644
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: B

Street Name: HARBOR STREET CHAPMAN AVENUE

Table with columns for Approach (North Bound, South Bound, East Bound, West Bound) and Movement (L, T, R). Rows include Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #133 Harbor Boulevard (NS) at Project Access 1 EW

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B [10.8]

Table with columns for Street Name (Harbor Boulevard, Project Access 1), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0 0 2 1 0, 0 0 3 0 0, 0 0 0 0 0, 0 0 0 0 1).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across four approaches.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and values like 6.9 and 3.3.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap. across four approaches.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #133 Harbor Boulevard (NS) at Project Access 1 EW

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B [13.2]

Table with columns for Street Name (Harbor Boulevard, Project Access 1), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L-T-R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0 0 2 1 0, etc.).

Volume Module: Table showing traffic volume metrics such as Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across different movements.

Critical Gap Module: Table showing Critical Gap and FollowUpTim values for different movements.

Capacity Module: Table showing Capacity metrics such as Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table showing Level of Service metrics such as 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E

Average Delay (sec/veh): 10.8 Worst Case Level Of Service: F[181.1]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Harbor Boulevard, North Bound, South Bound, East Bound, West Bound, and various movement types (L, T, R).

Table with columns: Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume. Rows show traffic volume and adjustment factors for each approach.

Table with columns: Critical Gap Module, Critical Gp, FollowUpTim. Rows show critical gap and follow-up time values for each approach.

Table with columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap. Rows show capacity-related metrics for each approach.

Table with columns: Level Of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS. Rows show level of service and delay metrics.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E

Average Delay (sec/veh): 199.5 Worst Case Level Of Service: F[3104.7]

Table with columns: Street Name, Approach, Movement, Control, Rights, Lanes. Rows include Harbor Boulevard, North Bound, South Bound, East Bound, West Bound.

Table with columns: Volume Module, Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Table with columns: Critical Gap Module, Critical Gp, FollowUpTim.

Table with columns: Capacity Module, Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Table with columns: Level Of Service Module, 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

Note: Queue reported is the number of cars per lane.

 Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E

Cycle (sec): 100 Critical Vol./Cap.(X): 0.401
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 20 Level Of Service: A

Street Name: Harbor Boulevard Project Access 2 / Sheraton Acces

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|
 Control: Protected Protected Permitted Permitted

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 2 1 0 1 0 2 1 0 1 0 0 1 0

-----|-----|-----|-----|
 Volume Module:

Base Vol: 19 904 0 3 771 17 15 5 29 0 0 0

Growth Adj: 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03

Initial Bse: 20 931 0 3 794 18 15 5 30 0 0 0

Added Vol: 0 69 53 139 77 0 0 0 0 68 0 54

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 20 1000 53 142 871 18 15 5 30 68 0 54

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 20 1000 53 142 871 18 15 5 30 68 0 54

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 20 1000 53 142 871 18 15 5 30 68 0 54

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 20 1000 53 142 871 18 15 5 30 68 0 54

-----|-----|-----|-----|
 Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 2.85 0.15 1.00 2.94 0.06 1.00 0.15 0.85 1.00 0.00 1.00

Final Sat.: 1700 4843 257 1700 5000 100 1700 250 1450 1700 0 1700

-----|-----|-----|-----|
 Capacity Analysis Module:

Vol/Sat: 0.01 0.21 0.21 0.08 0.17 0.17 0.01 0.02 0.02 0.04 0.00 0.03

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E

Cycle (sec): 100 Critical Vol./Cap.(X): 0.578
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 28 Level Of Service: A

Street Name: Harbor Boulevard Project Access 2 / Sheraton Acces

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Permitted Permitted

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 2 1 0 1 0 2 1 0 1 0 0 1 0 1 0 0 1 0

Volume Module:

Base Vol: 30 1378 0 6 969 32 10 5 21 0 0 0

Growth Adj: 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03

Initial Bse: 31 1419 0 6 998 33 10 5 22 0 0 0

Added Vol: 0 138 78 205 83 0 0 0 0 114 0 90

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 31 1557 78 211 1081 33 10 5 22 114 0 90

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 31 1557 78 211 1081 33 10 5 22 114 0 90

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 31 1557 78 211 1081 33 10 5 22 114 0 90

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 31 1557 78 211 1081 33 10 5 22 114 0 90

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 2.86 0.14 1.00 2.91 0.09 1.00 0.19 0.81 1.00 0.00 1.00

Final Sat.: 1700 4857 243 1700 4949 151 1700 327 1373 1700 0 1700

Capacity Analysis Module:

Vol/Sat: 0.02 0.32 0.32 0.12 0.22 0.22 0.01 0.02 0.02 0.07 0.00 0.05

Crit Moves: **** **** **** ****

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #135 Harbor Boulevard (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: F[53.7]

Table with columns for Street Name (Harbor Boulevard, Twintree Lane), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (1, 0, 2, 1, 0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across various movements.

Critical Gap Module table with columns for Critical Gp and FollowUpTim across various movements.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap across various movements.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS across various movements.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #135 Harbor Boulevard (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 29.8 Worst Case Level Of Service: F[683.2]

Table with columns for Street Name (Harbor Boulevard, Twintree Lane), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (1, 0, 2, 1, 0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across various movements.

Critical Gap Module table with columns for Critical Gp and FollowUpTim across various movements.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap across various movements.

Level of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS across various movements.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #135 Harbor Boulevard (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[11.3]

Street Name:	Harbor Boulevard						Twintree Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1	0	2	1	0	2	1	0	0	0	0	1

Volume Module:	Harbor Boulevard			Harbor Boulevard			Twintree Lane			Twintree Lane		
Base Vol:	20	857	11	8	763	7	0	0	48	0	0	43
Growth Adj:	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Initial Bse:	21	883	11	8	786	7	0	0	49	0	0	44
Added Vol:	0	97	46	16	127	0	0	0	0	10	0	21
PasserByVol:	0	0	0	0	0	0	0	0	0	-10	0	10
Initial Fut:	21	980	57	24	913	7	0	0	49	0	0	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	21	980	57	24	913	7	0	0	49	0	0	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	21	980	57	24	913	7	0	0	49	0	0	75

Critical Gap Module:	Harbor Boulevard			Harbor Boulevard			Twintree Lane			Twintree Lane		
Critical Gp:	4.1	xxxx	xxxxxx	4.1	xxxx	xxxxxx	xxxxxx	xxxx	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxxx	2.2	xxxx	xxxxxx	xxxxxx	xxxx	3.3	3.5	4.0	3.3

Capacity Module:	Harbor Boulevard			Harbor Boulevard			Twintree Lane			Twintree Lane		
Cnflct Vol:	920	xxxx	xxxxxx	1037	xxxx	xxxxxx	xxxx	xxxx	308	1402	2018	355
Potent Cap.:	750	xxxx	xxxxxx	678	xxxx	xxxxxx	xxxx	xxxx	694	101	59	647
Move Cap.:	750	xxxx	xxxxxx	678	xxxx	xxxxxx	xxxx	xxxx	694	90	55	647
Volume/Cap:	0.03	xxxx	xxxx	0.04	xxxx	xxxx	xxxx	xxxx	0.07	0.00	0.00	0.12

Level Of Service Module:	Harbor Boulevard			Harbor Boulevard			Twintree Lane			Twintree Lane		
2Way95thQ:	0.1	xxxx	xxxxxx	0.1	xxxx	xxxxxx	xxxx	xxxx	0.2	xxxx	xxxx	xxxxxx
Control Del:	9.9	xxxx	xxxxxx	10.5	xxxx	xxxxxx	xxxxxx	xxxx	10.6	xxxxxx	xxxx	xxxxxx
LOS by Move:	A	*	*	B	*	*	*	*	B	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	647	xxxxxx
SharedQueue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	0.4	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	11.3	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			10.6			11.3		
ApproachLOS:	*			*			B			B		

 Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #135 Harbor Boulevard (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C [15.4]

Street Name:	Harbor Boulevard						Twintree Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1	0	2	1	0	2	0	0	0	0	1	0

Volume Module:

Base Vol:	31	1315	64	36	920	21	0	0	38	0	0	67
Growth Adj:	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Initial Bse:	32	1354	66	37	948	22	0	0	39	0	0	69
Added Vol:	0	156	55	19	155	0	0	0	0	15	0	31
PasserByVol:	0	0	0	0	0	0	0	0	0	-15	0	15
Initial Fut:	32	1510	121	56	1103	22	0	0	39	0	0	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	32	1510	121	56	1103	22	0	0	39	0	0	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	32	1510	121	56	1103	22	0	0	39	0	0	115

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	3.3	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	1124	xxxx	xxxxx	1631	xxxx	xxxxx	xxxx	xxxx	378	2114	2871	564
Potent Cap.:	629	xxxx	xxxxx	403	xxxx	xxxxx	xxxx	xxxx	625	30	17	474
Move Cap.:	629	xxxx	xxxxx	403	xxxx	xxxxx	xxxx	xxxx	625	24	14	474
Volume/Cap:	0.05	xxxx	xxxx	0.14	xxxx	xxxx	xxxx	xxxx	0.06	0.00	0.00	0.24

Level of Service Module:

2Way95thQ:	0.2	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxx	xxxx	0.2	xxxx	xxxx	xxxxx
Control Del:	11.0	xxxx	xxxxx	15.4	xxxx	xxxxx	xxxxx	xxxx	11.1	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	C	*	*	*	*	B	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	474	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.9	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.0	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			11.1			15.0		
ApproachLOS:	*			*			B			C		

 Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #106 HARBOR STREET AT LAMPSON AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.543
Loss Time (sec):      5           Average Delay (sec/veh):        xxxxxx
Optimal Cycle:        26          Level Of Service:                A
*****
Street Name:          HARBOR STREET          LAMPSON AVENUE
Approach:             North Bound          South Bound          East Bound          West Bound
Movement:             L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:              Prot+Permit          Prot+Permit          Permitted           Permitted
Rights:               Include             Include             Include             Include
Min. Green:           0   0   0           0   0   0           0   0   0           0   0   0
Y+R:                  4.0 4.0 4.0         4.0 4.0 4.0         4.0 4.0 4.0         4.0 4.0 4.0
Lanes:                1 0 2 1 0          1 0 2 1 0          1 0 1 0 1          1 0 1 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:             66 825 112          59 696 20           46 279 64           90 152 63
Growth Adj:           1.04 1.04 1.04      1.04 1.04 1.04      1.04 1.04 1.04      1.04 1.04 1.04
Initial Bse:          69 858 116          61 724 21           48 290 67           94 158 66
Added Vol:            3 124 6             9 125 3             5 0 7              15 0 13
PasserByVol:         0 0 0               0 0 0               0 0 0               0 0 0
Initial Fut:          72 982 122          70 849 24           53 290 74           109 158 79
User Adj:             1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
PHF Adj:              1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
PHF Volume:           72 982 122          70 849 24           53 290 74           109 158 79
Reduct Vol:           0 0 0               0 0 0               0 0 0               0 0 0
Reduced Vol:          72 982 122          70 849 24           53 290 74           109 158 79
PCE Adj:              1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
FinalVolume:          72 982 122          70 849 24           53 290 74           109 158 79
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:             1700 1700 1700      1700 1700 1700      1700 1700 1700      1700 1700 1700
Adjustment:           1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 0.85      1.00 1.00 0.85
Lanes:                1.00 2.67 0.33      1.00 2.92 0.08      1.00 1.00 1.00      1.00 1.00 1.00
Final Sat.:           1700 4534 566      1700 4961 139      1700 1700 1445      1700 1700 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.04 0.22 0.22      0.04 0.17 0.17      0.03 0.17 0.05      0.06 0.09 0.05
Crit Moves:           ****             ****             ****             ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #106 HARBOR STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.643

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 32 Level Of Service: B

Street Name: HARBOR STREET LAMPSON AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Prot+Permit Prot+Permit Permitted Permitted

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 2 1 0 1 0 2 1 0 1 0 1 0 1

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Volume Module:

Base Vol: 96 1151 144 44 791 52 55 196 72 131 354 55

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 100 1197 150 46 823 54 57 204 75 136 368 57

Added Vol: 8 189 17 13 153 5 6 0 6 14 0 16

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 108 1386 167 59 976 59 63 204 81 150 368 73

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 108 1386 167 59 976 59 63 204 81 150 368 73

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 108 1386 167 59 976 59 63 204 81 150 368 73

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 108 1386 167 59 976 59 63 204 81 150 368 73

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 1.00 2.68 0.32 1.00 2.83 0.17 1.00 1.00 1.00 1.00 1.00 1.00

Final Sat.: 1700 4552 548 1700 4809 291 1700 1700 1445 1700 1700 1445

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Capacity Analysis Module:

Vol/Sat: 0.06 0.30 0.30 0.03 0.20 0.20 0.04 0.12 0.06 0.09 0.22 0.05

Crit Moves: **** **** **** ****

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #110 HARBOR BOULEVARD AT BLUE SPRUCE AVENUE

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: E[37.6]

Table with columns for Street Name (HARBOR BOULEVARD, BLUE SPRUCE AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 1, 2, 3).

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume across four approaches.

Critical Gap Module: Table with columns for Critical Gp, FollowUpTim across four approaches.

Capacity Module: Table with columns for Cnflict Vol, Potent Cap., Move Cap., Volume/Cap across four approaches.

Level Of Service Module: Table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS across four approaches.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #110 HARBOR BOULEVARD AT BLUE SPRUCE AVENUE

Average Delay (sec/veh): 4.3 Worst Case Level Of Service: F[193.7]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for Harbor Boulevard and Blue Spruce Avenue.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Table for Critical Gap Module showing Critical Gap and FollowUpTime values.

Table for Capacity Module showing Conflict Vol, Potent Cap., Move Cap., and Volume/Cap.

Table for Level Of Service Module showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #110 HARBOR BOULEVARD AT BLUE SPRUCE AVENUE

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.9]

Street Name:	HARBOR BOULEVARD					BLUE SPRUCE AVENUE							
Approach:	North Bound			South Bound		East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled		Stop Sign			Stop Sign				
Rights:	Include			Include		Include			Include				
Lanes:	0	0	2	1	0	1	0	3	0	0	0	0	1

Volume Module:

Base Vol:	0	995	36	11	855	0	0	0	0	0	0	70
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	1035	37	11	889	0	0	0	0	0	0	73
Added Vol:	0	152	0	0	86	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1187	37	11	975	0	0	0	0	0	0	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1187	37	11	975	0	0	0	0	0	0	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1187	37	11	975	0	0	0	0	0	0	73

Critical Gap Module:

Critical Gp:	xxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	1224	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	414
Potent Cap.:	xxxx	xxxx	xxxxx	576	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	593
Move Cap.:	xxxx	xxxx	xxxxx	576	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	593
Volume/Cap:	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.12

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.4
Control Del:	xxxxx	xxxx	xxxxx	11.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	B
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx					11.9
ApproachLOS:	*			*			*					B

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #110 HARBOR BOULEVARD AT BLUE SPRUCE AVENUE

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: C [15.5]

Table with columns for Street Name (HARBOR BOULEVARD, BLUE SPRUCE AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 0, 2, 1, 0, 1, 0, 3, 0, 0, 0, 0, 0, 0, 0, 0, 1).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across various movements.

Critical Gap Module table with columns for Critical Gp and FollowUpTim, showing values like 4.1, 2.2, 6.9, 3.3.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap., showing values like 1736, 368, 0.07, 590, 456, 0.14.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS, showing values like 0.2, 15.5, C, 0.5, 14.2, B, 14.2, B.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #132 HARBOR BOULEVARD AT PALM STREET

Cycle (sec): 100 Critical Vol./Cap. (X): 0.400
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Table with columns for Street Name (HARBOR BOULEVARD, PALM STREET), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves, and other capacity-related metrics.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #132 HARBOR BOULEVARD AT PALM STREET

Cycle (sec): 100 Critical Vol./Cap.(X): 0.563
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 27 Level Of Service: A

Street Name:	HARBOR BOULEVARD						PALM STREET					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Movement:												
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	0	0	1	0	0	1

Volume Module:

Base Vol:	35	1190	30	71	850	126	135	49	38	8	62	155
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	36	1238	31	74	884	131	140	51	40	8	64	161
Added Vol:	0	169	0	0	155	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	1407	31	74	1039	131	140	51	40	8	64	161
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	36	1407	0	74	1039	131	140	51	40	8	64	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	1407	0	74	1039	131	140	51	40	8	64	161
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	36	1407	0	74	1039	131	140	51	40	8	64	161

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
Lanes:	1.00	3.00	1.00	1.00	2.66	0.34	0.61	0.22	0.17	0.11	0.89	1.00
Final Sat.:	1700	5100	1445	1700	4529	571	1034	375	291	194	1506	1445

Capacity Analysis Module:

Vol/Sat:	0.02	0.28	0.00	0.04	0.23	0.23	0.08	0.14	0.14	0.00	0.04	0.11
Crit Moves:	****			****			****			****		

Level of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #111 HARBOR STREET AT GARDEN GROVE BOULEVARD

Cycle (sec): 100 Critical Vol./Cap. (X): 0.581

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 28 Level Of Service: A

Street Name: HARBOR STREET GARDEN GROVE BOULEVARD

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

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Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 1 0 3 0 1 2 0 2 1 0 2 0 2 1 0

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Volume Module:

Base Vol: 189 839 193 86 757 91 198 558 281 149 324 48

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 197 873 201 89 787 95 206 580 292 155 337 50

Added Vol: 0 117 0 16 66 3 7 0 0 0 0 0 28

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 197 990 201 105 853 98 213 580 292 155 337 78

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 197 990 201 105 853 98 213 580 292 155 337 78

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 197 990 201 105 853 98 213 580 292 155 337 78

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 197 990 201 105 853 98 213 580 292 155 337 78

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00

Lanes: 1.00 3.00 1.00 1.00 3.00 1.00 2.00 2.00 1.00 2.00 2.44 0.56

Final Sat.: 1700 5100 1445 1700 5100 1445 3400 3400 1445 3400 4142 958

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Capacity Analysis Module:

Vol/Sat: 0.12 0.19 0.14 0.06 0.17 0.07 0.06 0.17 0.20 0.05 0.08 0.08

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #111 HARBOR STREET AT GARDEN GROVE BOULEVARD

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 5 Average Delay (sec/veh): XXXXXX
Optimal Cycle: 39 Level Of Service: C

Table with columns for Street Name (HARBOR STREET, GARDEN GROVE BOULEVARD), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #112 HARBOR STREET AT CA-22 WB OFF-RAMP / BANNER DR.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.702
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 37 Level Of Service: C

Street Name: HARBOR STREET CA-22 WB OFF-RAMP / BANNER DR.

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Permitted Split Phase Split Phase

Rights: Ignore Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 3 0 1 0 0 2 1 0 0 0 1 1 0 0 1

Volume Module:

Table with 12 columns and 15 rows of traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module:

Table with 12 columns and 4 rows of saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module:

Table with 12 columns and 2 rows of capacity analysis data including Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #112 HARBOR STREET AT CA-22 WB OFF-RAMP / BANNER DR.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.700
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 37 Level Of Service: B

Street Name: HARBOR STREET CA-22 WB OFF-RAMP / BANNER DR.
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 Control: Protected Permitted Split Phase Split Phase
 Rights: Ignore Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
 Lanes: 1 0 3 0 1 0 0 2 1 0 0 0 1 1 0 0 1

Volume Module:
 Base Vol: 70 1511 437 0 1285 52 86 0 69 608 99 171
 Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
 Initial Bse: 73 1571 454 0 1336 54 89 0 72 632 103 178
 Added Vol: 0 95 0 0 119 0 0 0 0 0 0 0 36
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 73 1666 454 0 1455 54 89 0 72 632 103 214
 User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 73 1666 0 0 1455 54 89 0 72 632 103 214
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 73 1666 0 0 1455 54 89 0 72 632 103 214
 PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 73 1666 0 0 1455 54 89 0 72 632 103 214

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85
 Lanes: 1.00 3.00 1.00 0.00 2.89 0.11 0.55 0.00 0.45 1.72 0.28 1.00
 Final Sat.: 1700 5100 1445 0 4917 183 943 0 757 2924 476 1445

Capacity Analysis Module:
 Vol/Sat: 0.04 0.33 0.00 0.00 0.30 0.30 0.09 0.00 0.09 0.22 0.22 0.15
 Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #113 HARBOR STREET AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.920
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	HARBOR STREET						TRASK AVENUE					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	1	0	2	0	1	1

Volume Module:

Base Vol:	50	802	375	338	1426	58	109	561	428	98	286	688
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	52	834	390	352	1483	60	113	583	445	102	297	716
Added Vol:	0	20	0	18	11	0	65	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	854	390	370	1494	60	178	583	445	102	297	716
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	52	854	390	370	1494	60	178	583	445	102	297	716
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	854	390	370	1494	60	178	583	445	102	297	716
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	854	390	370	1494	60	178	583	445	102	297	716
OvlAdjVol:												401

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1700	5100	1445	1700	5100	1445	1700	3400	1445	1700	3400	1445

Capacity Analysis Module:

Vol/Sat:	0.03	0.17	0.27	0.22	0.29	0.04	0.10	0.17	0.31	0.06	0.09	0.50
OvlAdjV/S:												0.28
Crit Moves:		****	****				****					****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #113 HARBOR STREET AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 1.023
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: F

Street Name: HARBOR STREET TRASK AVENUE
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 Control: Protected Protected Protected Protected
 Rights: Include Include Include Ovl
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
 Lanes: 1 0 3 0 1 1 0 3 0 1 1 0 2 0 1 1 0 2 0 1

Volume Module:
 Base Vol: 83 1205 453 335 1116 125 162 508 376 86 187 702
 Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
 Initial Bse: 86 1253 471 348 1161 130 168 528 391 89 194 730
 Added Vol: 0 23 0 33 21 0 72 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 86 1276 471 381 1182 130 240 528 391 89 194 730
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 86 1276 471 381 1182 130 240 528 391 89 194 730
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 86 1276 471 381 1182 130 240 528 391 89 194 730
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 86 1276 471 381 1182 130 240 528 391 89 194 730
 OvlAdjVol: 406

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
 Lanes: 1.00 3.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00 1.00 2.00 1.00
 Final Sat.: 1700 5100 1445 1700 5100 1445 1700 3400 1445 1700 3400 1445

Capacity Analysis Module:
 Vol/Sat: 0.05 0.25 0.33 0.22 0.23 0.09 0.14 0.16 0.27 0.05 0.06 0.51
 OvlAdjV/S: 0.28
 Crit Moves: **** * 0.14 0.16 0.27 **** *

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #113 HARBOR STREET AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.860
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 68 Level Of Service: D

Street Name: HARBOR STREET TRASK AVENUE
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 Control: Protected Protected Protected Protected
 Rights: Ovl Include Include Ovl
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
 Lanes: 1 0 3 0 1 1 0 3 0 1 1 0 2 0 1 1 0 2 0 1

Volume Module:
 Base Vol: 50 802 375 338 1426 58 109 561 428 98 286 688
 Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
 Initial Bse: 52 834 390 352 1483 60 113 583 445 102 297 716
 Added Vol: 0 20 0 18 11 0 65 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 52 854 390 370 1494 60 178 583 445 102 297 716
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 52 854 390 370 1494 60 178 583 445 102 297 716
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 52 854 390 370 1494 60 178 583 445 102 297 716
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 52 854 390 370 1494 60 178 583 445 102 297 716
 OvlAdjVol: 303 401

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
 Lanes: 1.00 3.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00 1.00 2.00 1.00
 Final Sat.: 1700 5100 1445 1700 5100 1445 1700 3400 1445 1700 3400 1445

Capacity Analysis Module:
 Vol/Sat: 0.03 0.17 0.27 0.22 0.29 0.04 0.10 0.17 0.31 0.06 0.09 0.50
 OvlAdjV/S: 0.21 0.28
 Crit Moves: **** **

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #113 HARBOR STREET AT TRASK AVENUE
*****
Cycle (sec):          100          Critical Vol./Cap. (X):          0.970
Loss Time (sec):      5            Average Delay (sec/veh):          xxxxxxx
Optimal Cycle:        100          Level Of Service:                  E
*****
Street Name:          HARBOR STREET          TRASK AVENUE
Approach:              North Bound          South Bound          East Bound          West Bound
Movement:              L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:                Protected          Protected          Protected          Protected
Rights:                 Ovl              Include            Include            Ovl
Min. Green:             0 0 0            0 0 0            0 0 0            0 0 0
Y+R:                   4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:                 1 0 3 0 1        1 0 3 0 1        1 0 2 0 1        1 0 2 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:              83 1205 453      335 1116 125      162 508 376      86 187 702
Growth Adj:           1.04 1.04 1.04  1.04 1.04 1.04  1.04 1.04 1.04  1.04 1.04 1.04
Initial Bse:           86 1253 471      348 1161 130      168 528 391      89 194 730
Added Vol:             0 23 0            33 21 0            72 0 0            0 0 0
PasserByVol:          0 0 0            0 0 0            0 0 0            0 0 0
Initial Fut:           86 1276 471      381 1182 130      240 528 391      89 194 730
User Adj:              1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:               1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:           86 1276 471      381 1182 130      240 528 391      89 194 730
Reduct Vol:            0 0 0            0 0 0            0 0 0            0 0 0
Reduced Vol:          86 1276 471      381 1182 130      240 528 391      89 194 730
PCE Adj:              1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:              1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:          86 1276 471      381 1182 130      240 528 391      89 194 730
OvlAdjVol:              395                                406
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:            1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 0.85  1.00 1.00 0.85
Lanes:                 1.00 3.00 1.00  1.00 3.00 1.00  1.00 2.00 1.00  1.00 2.00 1.00
Final Sat.:           1700 5100 1445  1700 5100 1445  1700 3400 1445  1700 3400 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.05 0.25 0.33  0.22 0.23 0.09  0.14 0.16 0.27  0.05 0.06 0.51
OvlAdjV/s:              0.27                                0.28
Crit Moves:              ****  ****                                ****  ****
*****

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #139 Project Access (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 4.6 Worst Case Level Of Service: A[8.6]

Table with columns for Street Name (Harbor Boulevard, Twintree Lane), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume for each approach.

Critical Gap Module table showing Critical Gap and FollowUpTim values for each approach.

Capacity Module table showing Conflict Vol, Potent Cap., Move Cap., and Volume/Cap. for each approach.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for each approach.

Note: Queue reported is the number of cars per lane.

Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #139 Project Access (NS) at Twintree Lane (EW)

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: A[8.8]

Table with columns for Street Name (Harbor Boulevard, Twintree Lane), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Stop Sign, Uncontrolled), Rights (Include), and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across various movements.

Table for Critical Gap Module showing Critical Gap and FollowUpTime for different movements.

Table for Capacity Module showing Conflict Vol, Potent Cap., Move Cap., and Volume/Cap for different movements.

Table for Level of Service Module showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #114 CA-22 EB ON-RAMP AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.512
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Street Name: CA-22 EB ON-RAMP TRASK AVENUE
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Permitted Protected Permitted
Rights: Include Ignore Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 0 0 0 0 0 0 0 1 2 0 1 0 0 0 0 1 1 0

Volume Module:
Base Vol: 0 0 0 0 0 250 641 758 0 0 782 69
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 0 0 0 0 0 260 667 788 0 0 813 72
Added Vol: 0 0 0 0 0 0 18 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 0 0 260 685 788 0 0 813 72
User Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 0 0 0 0 0 685 788 0 0 813 72
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 0 0 0 685 788 0 0 813 72
PCE Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 0 0 0 0 0 685 788 0 0 813 72

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00
Lanes: 0.00 0.00 0.00 0.00 0.00 1.00 2.00 1.00 0.00 0.00 1.84 0.16
Final Sat.: 0 0 0 0 0 1445 3400 1700 0 0 3124 276

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.00 0.00 0.00 0.20 0.46 0.00 0.00 0.26 0.26
Crit Moves: **** *

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #114 CA-22 EB ON-RAMP AT TRASK AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.531
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 25 Level Of Service: A

Street Name:	CA-22 EB ON-RAMP						TRASK AVENUE					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	0	0	0	2	0	1	0	0	1

Volume Module:

Base Vol:	0	0	0	0	0	295	824	516	0	0	668	48
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	0	0	307	857	537	0	0	695	50
Added Vol:	0	0	0	0	0	0	33	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	307	890	537	0	0	695	50
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	890	537	0	0	695	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	890	537	0	0	695	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	890	537	0	0	695	50

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	0.00	1.00	2.00	1.00	0.00	0.00	1.87	0.13
Final Sat.:	0	0	0	0	0	1445	3400	1700	0	0	3172	228

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.32	0.00	0.00	0.22	0.22	
Crit Moves:							****						

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #115 HASTER STREET AT CHAPMAN AVENUE*****
Cycle (sec): 100 Critical Vol./Cap. (X): 0.545
Loss Time (sec): 5 Average Delay (sec/veh): XXXXXX
Optimal Cycle: 26 Level Of Service: A

Street Name:	HASTER STREET						CHAPMAN AVENUE					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Movement:												
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	0	1	1	1	0	3	0	1	1

Volume Module:	HASTER STREET			HASTER STREET			CHAPMAN AVENUE			CHAPMAN AVENUE		
Base Vol:	126	457	94	115	482	98	104	1031	123	83	404	62
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	131	475	98	120	501	102	108	1072	128	86	420	64
Added Vol:	0	0	3	0	0	0	0	24	0	8	40	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	475	101	120	501	102	108	1096	128	94	460	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	131	475	101	120	501	102	108	1096	128	94	460	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	475	101	120	501	102	108	1096	128	94	460	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	131	475	101	120	501	102	108	1096	128	94	460	64

Saturation Flow Module:	HASTER STREET			HASTER STREET			CHAPMAN AVENUE			CHAPMAN AVENUE		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	1700	3400	1445	1700	3400	1445	1700	5100	1445	1700	3400	1445

Capacity Analysis Module:	HASTER STREET			HASTER STREET			CHAPMAN AVENUE			CHAPMAN AVENUE		
Vol/Sat:	0.08	0.14	0.07	0.07	0.15	0.07	0.06	0.21	0.09	0.06	0.14	0.04
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #115 HASTER STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.696
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 37 Level Of Service: B

Street Name: HASTER STREET CHAPMAN AVENUE
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 3 0 1 1 0 2 0 1

Volume Module:
Base Vol: 141 503 116 146 527 151 126 691 105 142 1008 123
Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
Initial Bse: 147 523 121 152 548 157 131 719 109 148 1048 128
Added Vol: 0 0 9 0 0 0 0 40 0 8 46 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 147 523 130 152 548 157 131 759 109 156 1094 128
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 147 523 130 152 548 157 131 759 109 156 1094 128
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 147 523 130 152 548 157 131 759 109 156 1094 128
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 147 523 130 152 548 157 131 759 109 156 1094 128

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00
Final Sat.: 1700 3400 1445 1700 3400 1445 1700 5100 1445 1700 3400 1445

Capacity Analysis Module:
Vol/Sat: 0.09 0.15 0.09 0.09 0.16 0.11 0.08 0.15 0.08 0.09 0.32 0.09
Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #116 HASTER STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.499
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

Table with columns for Street Name (HASTER STREET, LAMPSON AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Permitted), Rights (Include), and various traffic metrics like Min. Green, Y+R, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume for each movement.

Saturation Flow Module table showing Sat/Lane, Adjustment, Lanes, and Final Sat for each movement.

Capacity Analysis Module table showing Vol/Sat and Crit Moves for each movement.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #116 HASTER STREET AT LAMPSON AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.617
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Street Name: HASTER STREET LAMPSON AVENUE

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Permitted Permitted

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 1 0 1

Volume Module:

Base Vol: 138 604 62 67 602 68 99 230 77 105 358 78

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 144 628 64 70 626 71 103 239 80 109 372 81

Added Vol: 0 0 0 0 0 0 8 9 21 0 0 23 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 144 628 64 70 626 79 112 260 80 109 395 81

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 144 628 64 70 626 79 112 260 80 109 395 81

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 144 628 64 70 626 79 112 260 80 109 395 81

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 144 628 64 70 626 79 112 260 80 109 395 81

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Sat.: 1700 3400 1445 1700 3400 1445 1700 1700 1445 1700 1700 1445

Capacity Analysis Module:

Vol/Sat: 0.08 0.18 0.04 0.04 0.18 0.05 0.07 0.15 0.06 0.06 0.23 0.06

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #117 LEWIS STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap. (X): 0.751
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: C

Table with columns for Street Name (LEWIS STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLE Adj, Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #117 LEWIS STREET AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 49 Level Of Service: C

Table with columns for Street Name (LEWIS STREET, CHAPMAN AVENUE), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #118 STATE COLLEGE BLVD. AT I-5 NB RAMPS

Cycle (sec): 100 Critical Vol./Cap.(X): 0.311
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

Table with columns for Street Name (STATE COLLEGE BOULEVARD, I-5 NB RAMPS), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #118 STATE COLLEGE BLVD. AT I-5 NB RAMPS

Cycle (sec): 100 Critical Vol./Cap. (X): 0.420

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 21 Level Of Service: A

Street Name: STATE COLLEGE BOULEVARD I-5 NB RAMPS

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Split Phase Split Phase

Rights: Ignore Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 4 0 1 1 0 4 0 1 0 0 0 0 0 1 1 1 0 2

Volume Module:

Base Vol: 88 865 400 31 1005 16 0 0 0 77 616 280

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 92 900 416 32 1045 17 0 0 0 80 641 291

Added Vol: 0 8 12 0 9 0 0 0 0 14 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 92 908 428 32 1054 17 0 0 0 94 641 291

User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 92 908 0 32 1054 17 0 0 0 94 641 291

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 92 908 0 32 1054 17 0 0 0 94 641 291

PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 92 908 0 32 1054 17 0 0 0 94 641 291

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 2.00 4.00 1.00 1.00 4.00 1.00 0.00 0.00 0.00 1.00 2.00 2.00

Final Sat.: 3400 6800 1445 1700 6800 1445 0 0 0 1700 3400 2890

Capacity Analysis Module:

Vol/Sat: 0.03 0.13 0.00 0.02 0.16 0.01 0.00 0.00 0.00 0.06 0.19 0.10

Crit Moves: **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #119 STATE COLLEGE BLVD. AT I-5 SB RAMPS

Cycle (sec): 100 Critical Vol./Cap.(X): 0.324

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 18 Level Of Service: A

Street Name: STATE COLLEGE BOULEVARD I-5 SB RAMPS

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Permitted Protected

Rights: Include Ignore Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 0 0 4 1 0 0 0 4 0 1 1 1 0 0 2 0 0 0 0 0

Volume Module:

Base Vol: 0 608 1 0 809 194 63 178 399 0 0 0

Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04

Initial Bse: 0 632 1 0 841 202 66 185 415 0 0 0

Added Vol: 0 11 0 0 20 0 0 0 12 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 643 1 0 861 202 66 185 427 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 643 1 0 861 0 66 185 427 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 0 643 1 0 861 0 66 185 427 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 0 643 1 0 861 0 66 185 427 0 0 0

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 0.00 4.99 0.01 0.00 4.00 1.00 1.00 1.00 2.00 0.00 0.00 0.00

Final Sat.: 0 8486 14 0 6800 1445 1700 1700 2890 0 0 0

Capacity Analysis Module:

Vol/Sat: 0.00 0.08 0.08 0.00 0.13 0.00 0.04 0.11 0.15 0.00 0.00 0.00

Crit Moves: **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #119 STATE COLLEGE BLVD. AT I-5 SB RAMPS

Cycle (sec): 100 Critical Vol./Cap.(X): 0.318
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 18 Level Of Service: A

Street Name: STATE COLLEGE BOULEVARD I-5 SB RAMPS
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R
 Control: Permitted Permitted Permitted Protected
 Rights: Include Ignore Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
 Lanes: 0 0 4 1 0 0 0 4 0 1 1 1 0 0 2 0 0 0 0 0

Volume Module:
 Base Vol: 0 1297 7 0 797 304 64 140 282 0 0 0
 Growth Adj: 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04
 Initial Bse: 0 1349 7 0 829 316 67 146 293 0 0 0
 Added Vol: 0 21 0 0 23 0 0 0 14 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 1370 7 0 852 316 67 146 307 0 0 0
 User Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 0 1370 7 0 852 0 67 146 307 0 0 0
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 1370 7 0 852 0 67 146 307 0 0 0
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 0 1370 7 0 852 0 67 146 307 0 0 0

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
 Lanes: 0.00 4.97 0.03 0.00 4.00 1.00 1.00 1.00 2.00 0.00 0.00 0.00
 Final Sat.: 0 8455 45 0 6800 1445 1700 1700 2890 0 0 0

Capacity Analysis Module:
 Vol/Sat: 0.00 0.16 0.16 0.00 0.13 0.00 0.04 0.09 0.11 0.00 0.00 0.00
 Crit Moves: **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #120 STATE COLLEGE BLVD. AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.658
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 33 Level Of Service: B

Street Name:	STATE COLLEGE BOULEVARD						CHAPMAN AVENUE					
	North Bound			South Bound			East Bound			West Bound		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	2	1	2	0	3	0	2	1

Volume Module:

Base Vol:	66	358	243	128	662	374	215	1040	106	497	503	47
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	69	372	253	133	688	389	224	1082	110	517	523	49
Added Vol:	0	0	0	0	0	32	11	9	0	0	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	372	253	133	688	421	235	1091	110	517	527	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	372	253	133	688	421	235	1091	110	517	527	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	372	253	133	688	421	235	1091	110	517	527	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	372	253	133	688	421	235	1091	110	517	527	49
OvlAdjVol:	0			321			81					

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	2.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	2890	3400	5100	1445	3400	5100	1445	3400	5100	1445

Capacity Analysis Module:

Vol/Sat:	0.02	0.07	0.09	0.04	0.13	0.29	0.07	0.21	0.08	0.15	0.10	0.03
OvlAdjV/S:	0.00			0.22			0.06					
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

 Intersection #120 STATE COLLEGE BLVD. AT CHAPMAN AVENUE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.632
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 31 Level Of Service: B

Street Name:	STATE COLLEGE BOULEVARD						CHAPMAN AVENUE					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	2	0	2	0	3	0	1	2

Volume Module:

Base Vol:	150	840	559	82	577	395	358	1124	88	362	1027	92
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	156	874	581	85	600	411	372	1169	92	376	1068	96
Added Vol:	0	0	0	0	0	36	21	16	0	0	5	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	156	874	581	85	600	447	393	1185	92	376	1073	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	156	874	581	85	600	447	393	1185	92	376	1073	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	874	581	85	600	447	393	1185	92	376	1073	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	156	874	581	85	600	447	393	1185	92	376	1073	96
OvlAdjVol:	261			280			25					

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	2.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3400	5100	2890	3400	5100	1445	3400	5100	1445	3400	5100	1445

Capacity Analysis Module:

Vol/Sat:	0.05	0.17	0.20	0.03	0.12	0.31	0.12	0.23	0.06	0.11	0.21	0.07
OvlAdjV/S:	0.09			0.19			0.02					
Crit Moves:	****			****			****			****		

Appendix F

Traffic Signal Warrants

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Project Buildout (Year 2014) With Project (AM)**

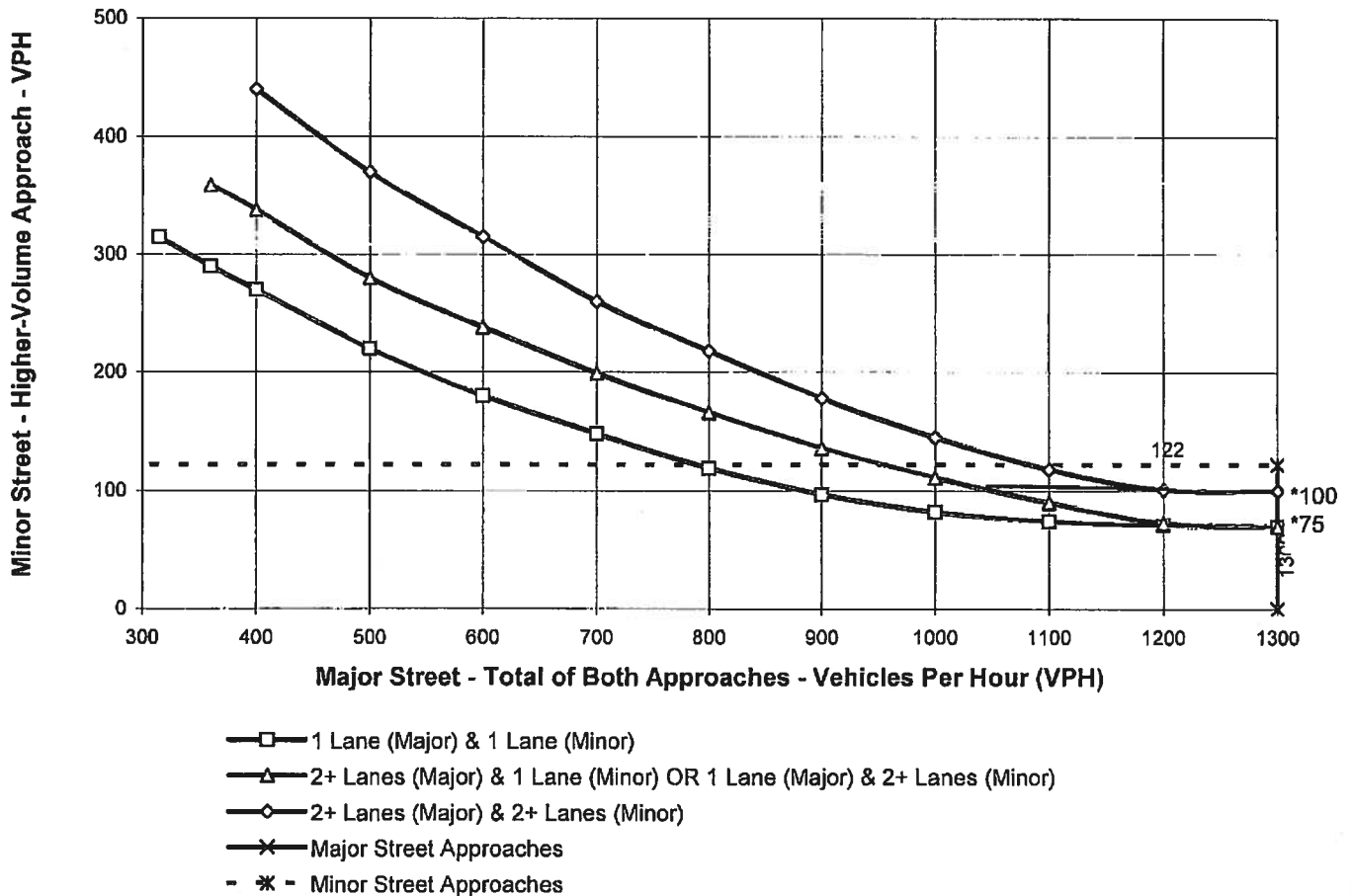
Major Street Name = **Harbor Boulevard**

Total of Both Approaches (VPH) = **2104**
Number of Approach Lanes Major Street = **3**

Minor Street Name = **Project Access 2**

High Volume Approach (VPH) = **122**
Number of Approach Lanes Minor Street = **2**

WARRANTED FOR A SIGNAL



WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Project Buildout (Year 2014) With Project (PM)**

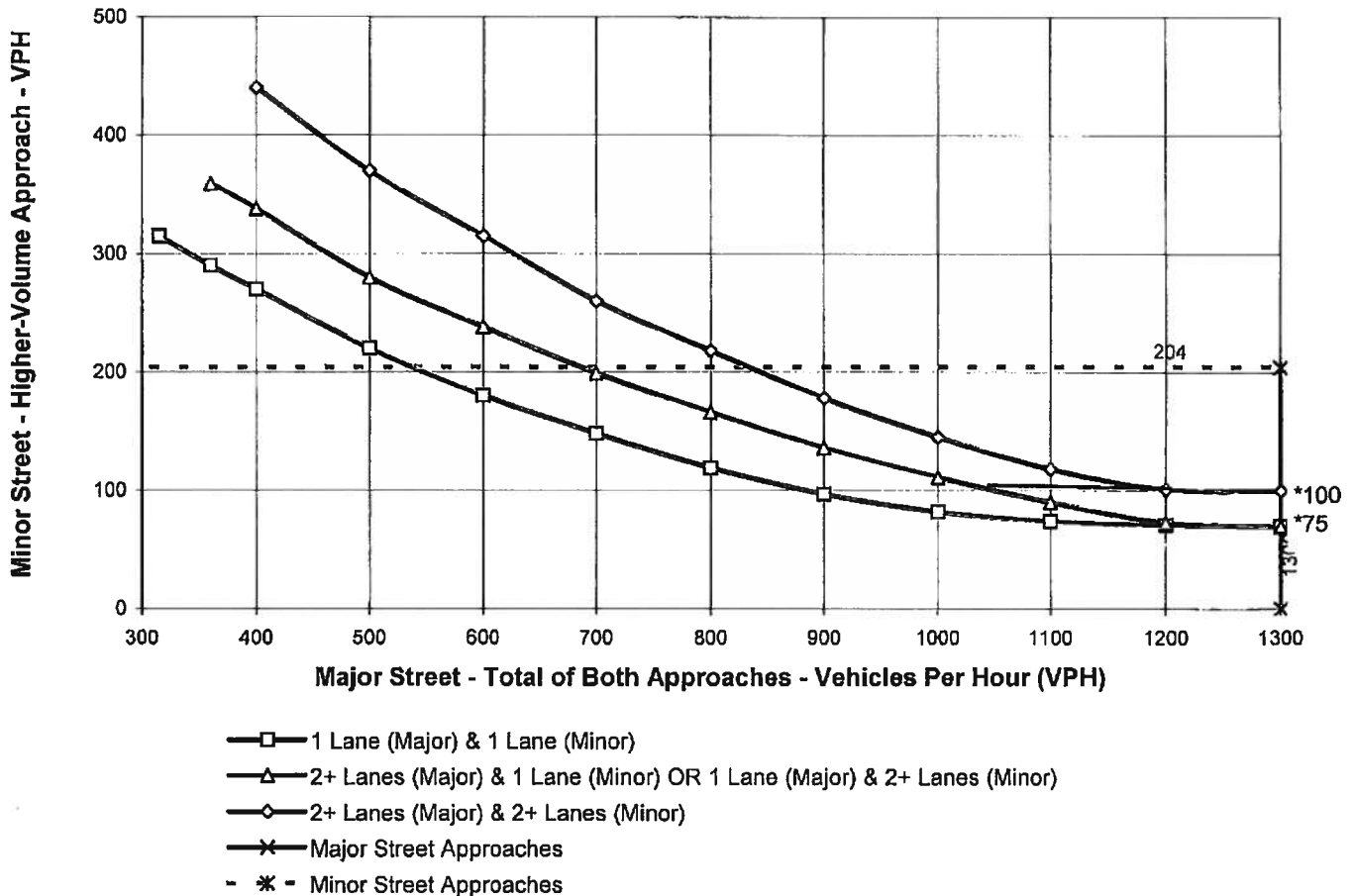
Major Street Name = **Harbor Boulevard**

Total of Both Approaches (VPH) = **2991**
Number of Approach Lanes Major Street = **3**

Minor Street Name = **Project Access 2**

High Volume Approach (VPH) = **204**
Number of Approach Lanes Minor Street = **2**

WARRANTED FOR A SIGNAL



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

Urban/Rural (1/2) = 2

SCENARIO: Project Buildout (Year 2014) With Project

MAJOR STREET: Harbor Boulevard ADT = 33,200 Lanes= 3

MINOR STREET: Project Access 2 ADT = 6,398 Lanes= 2

(Based on Estimated Average Daily Traffic-See Note)

URBAN	RURAL	XX	Minimum Requirements EADT			
1A - Minimum Vehicular Traffic			Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied XX	Not Satisfied					
Number of lanes for moving traffic on each approach.						
Major Street	Minor Street		Urban	Rural	Urban	Rural
1	1		8,000	5,600	2,400	1,680
2 or More	1		9,600	6,720	2,400	1,680
2 or More	33,200	2 or More	9,600	6,720 *	3,200	2,240 *
1	2 or More		8,000	5,600	3,200	2,240
1B - Interruption of Continuous Traffic			Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied XX	Not Satisfied					
Number of lanes for moving traffic on each approach.						
Major Street	Minor Street		Urban	Rural	Urban	Rural
1	1		12,000	8,400	1,200	850
2 or More	1		14,400	10,080	1,200	850
2 or More	33,200	2 or More	14,400	10,080 *	1,600	1,120 *
1	2 or More		12,000	8,400	1,600	1,120
1A&B - Combinations						
Satisfied XX	Not Satisfied					
No one warrant satisfied, but following warrants fulfilled 80% or more...			2 Warrants		2 Warrants	
100%	100%					
1A	1B					

Note: Use only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes. 5/17/2011

City of Garden Grove Engineering and Traffic Survey Summary

Street: HARBOR BOULEVARD
Limits: GARDEN GROVE BOULEVARD
LAMPSON AVENUE

Field Observer KEVIN
Checked By:
Date: 7/23/2008

Factors	Direction: <u>North/South</u>		
<u>A. Prevailing Speed Data</u>			
Location of Survey	12500		
85th Percentile	42		
10 mph Pace	33 - 42		
Percent in Pace	79.7%		
Posted Speed Limit	40		
<u>B. Collision History</u>			
Date Range Covered	1/1/2005	To 12/31/2006	(2)
Total Collisions	7		
Collision Rate (Acc/MVM)	0.44		
Expected Collision Rate	2.3		
<u>C. Traffic Factors</u>			
Average Daily Traffic	32817		
Length of Segment	3508		
Lane Configuration	3 Lanes Each Direction with Raised Median		
Street Classification	Principal Arterial		
<u>D. Conditions Not Readily Apparent</u>			
Conditions			
Roadway Geometrics			
Comments No Parking, Limited Access.			
<u>E. Adjacent Land Use</u>			
	Commercial		
Posted Speed Limit	40		
Speed Limit Change?	No		
Revised Speed Limit			
Approved and Authorized for release by City of Garden Grove:			
_____		_____	
		Date	Loc. # 24

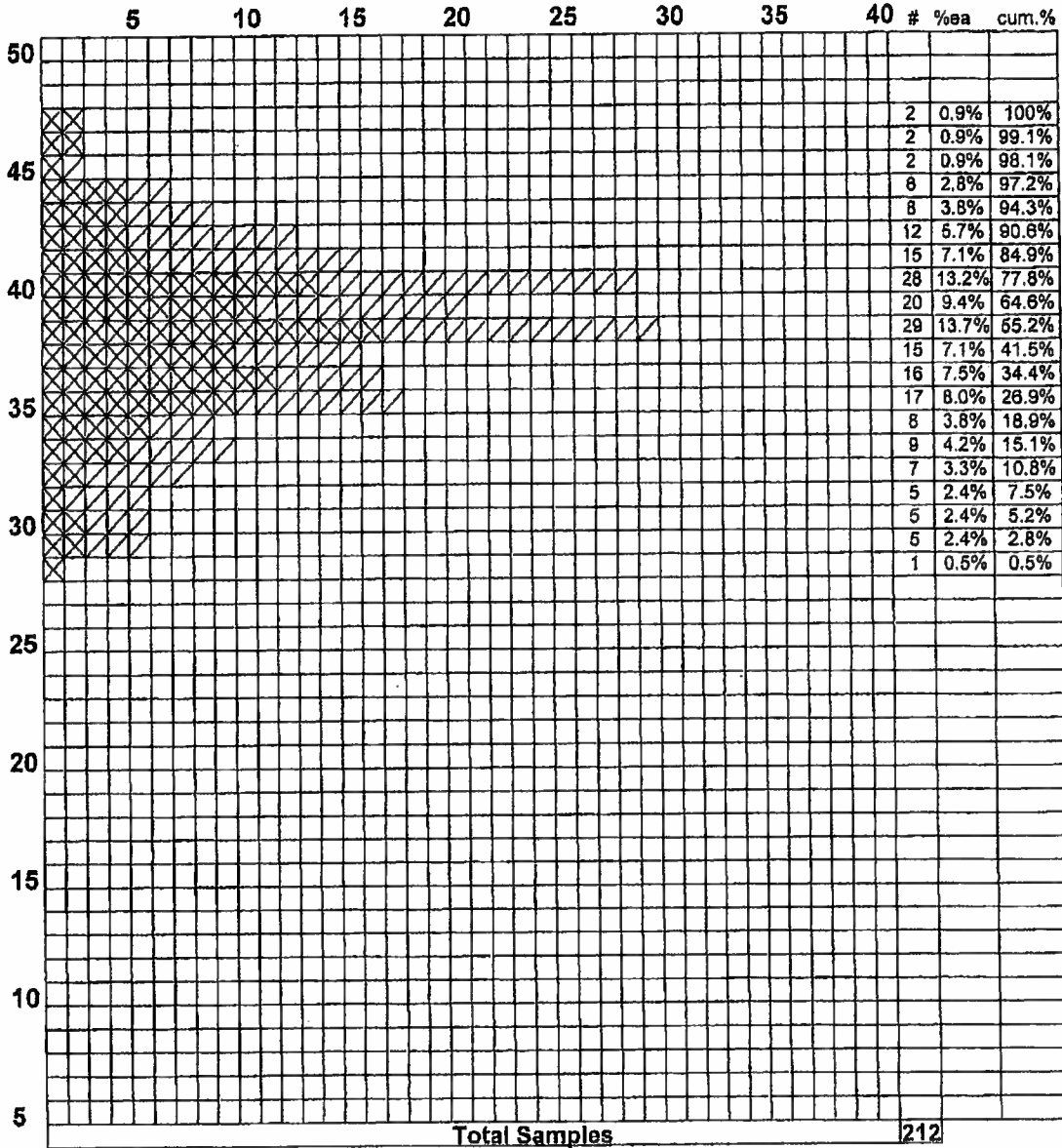
**City of Garden Grove
Traffic Engineering Department**

Street Name: HARBOR BOULEVARD

Limits: GARDEN GROVE BOULEVARD to LAMPSON AVENUE

Radars Survey Sheet

X=North /=South



85th Percentile Speed: <u>42</u>	Date of Survey: <u>7/23/2008</u>	Start Time: <u>14:00</u>
50th Percentile Speed: <u>38</u>	Weather: <u>Clear</u>	End Time: <u>15:00</u>
15th Percentile Speed: <u>33</u>	Road Condition: <u>Fair</u>	Posted Speed: <u>40</u>
10 MPH Pace: <u>33-42</u>	Street Class.: <u>Principal Arterial</u>	Observer: <u>KEVIN</u>
Number in Pace: <u>169</u>	Conditions not Apparent:	
Percent in Pace: <u>79.7%</u>		



Appendix G

Queue Analysis Worksheets

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E

Cycle (sec): 60 Critical Vol./Cap. (X): 0.446
 Loss Time (sec): 12 Average Delay (sec/veh): 13.0
 Optimal Cycle: OPTIMIZED Level Of Service: B

Street Name:	Harbor Boulevard						Project Access 2 / Sheraton Acces					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	7	7	7	7	7	7	7	7	7	7	7	7
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	0	1	0	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	19	904	0	3	771	17	15	5	29	0	0	0
Growth Adj:	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Initial Bse:	20	931	0	3	794	18	15	5	30	0	0	0
Added Vol:	0	69	53	139	77	0	0	0	0	68	0	54
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	1000	53	142	871	18	15	5	30	68	0	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	21	1075	57	153	937	19	17	6	32	73	0	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	1075	57	153	937	19	17	6	32	73	0	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	21	1075	57	153	937	19	17	6	32	73	0	58

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	0.95	0.91	0.91	0.72	0.87	0.87	0.74	1.00	0.85
Lanes:	1.00	2.85	0.15	1.00	2.94	0.06	1.00	0.15	0.85	1.00	0.00	1.00
Final Sat.:	1805	4891	259	1805	5070	102	1370	244	1413	1400	0	1615

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.01	0.22	0.22	0.08	0.18	0.18	0.01	0.02	0.02	0.05	0.00	0.04
Crit Moves:	****			****			****			****		
Green/Cycle:	0.26	0.49	0.49	0.19	0.42	0.42	0.12	0.12	0.12	0.12	0.00	0.12
Volume/Cap:	0.04	0.45	0.45	0.45	0.44	0.44	0.10	0.19	0.19	0.45	0.00	0.31
Uniform Del:	16.4	9.9	9.9	21.5	12.4	12.4	23.7	23.9	23.9	24.7	0.0	24.3
IncrcmntDel:	0.0	0.1	0.1	0.9	0.1	0.1	0.3	0.5	0.5	1.9	0.0	0.9
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	16.5	10.0	10.0	22.4	12.6	12.6	24.0	24.4	24.4	26.6	0.0	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.5	10.0	10.0	22.4	12.6	12.6	24.0	24.4	24.4	26.6	0.0	25.2
LOS by Move:	B	B	B	C	B	B	C	C	C	C	A	C
DesignQueue:	1	7	7	4	7	7	0	1	1	2	0	2

Level Of Service Computation Report
 2000 HCM Operations Method (Future Volume Alternative)

 Intersection #134 Harbor Boulevard (NS) at Project Access 2 / Sheraton Access (E

Cycle (sec): 60 Critical Vol./Cap.(X): 0.664
 Loss Time (sec): 12 Average Delay (sec/veh): 14.5
 Optimal Cycle: OPTIMIZED Level Of Service: B

Street Name:		Harbor Boulevard						Project Access 2 / Sheraton Acces					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Protected			Protected			Permitted			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	7	7	7	7	7	7	7	7	7	7	7	7	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	2	1	0	2	1	0	0	1	0	0	

Volume Module:

Base Vol:	30	1378	0	6	969	32	10	5	21	0	0	0
Growth Adj:	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Initial Bse:	31	1419	0	6	998	33	10	5	22	0	0	0
Added Vol:	0	138	78	205	83	0	0	0	0	114	0	90
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	1557	78	211	1081	33	10	5	22	114	0	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	32	1606	80	218	1115	34	11	5	22	118	0	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	1606	80	218	1115	34	11	5	22	118	0	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	1606	80	218	1115	34	11	5	22	118	0	93

Saturation Flow Module:

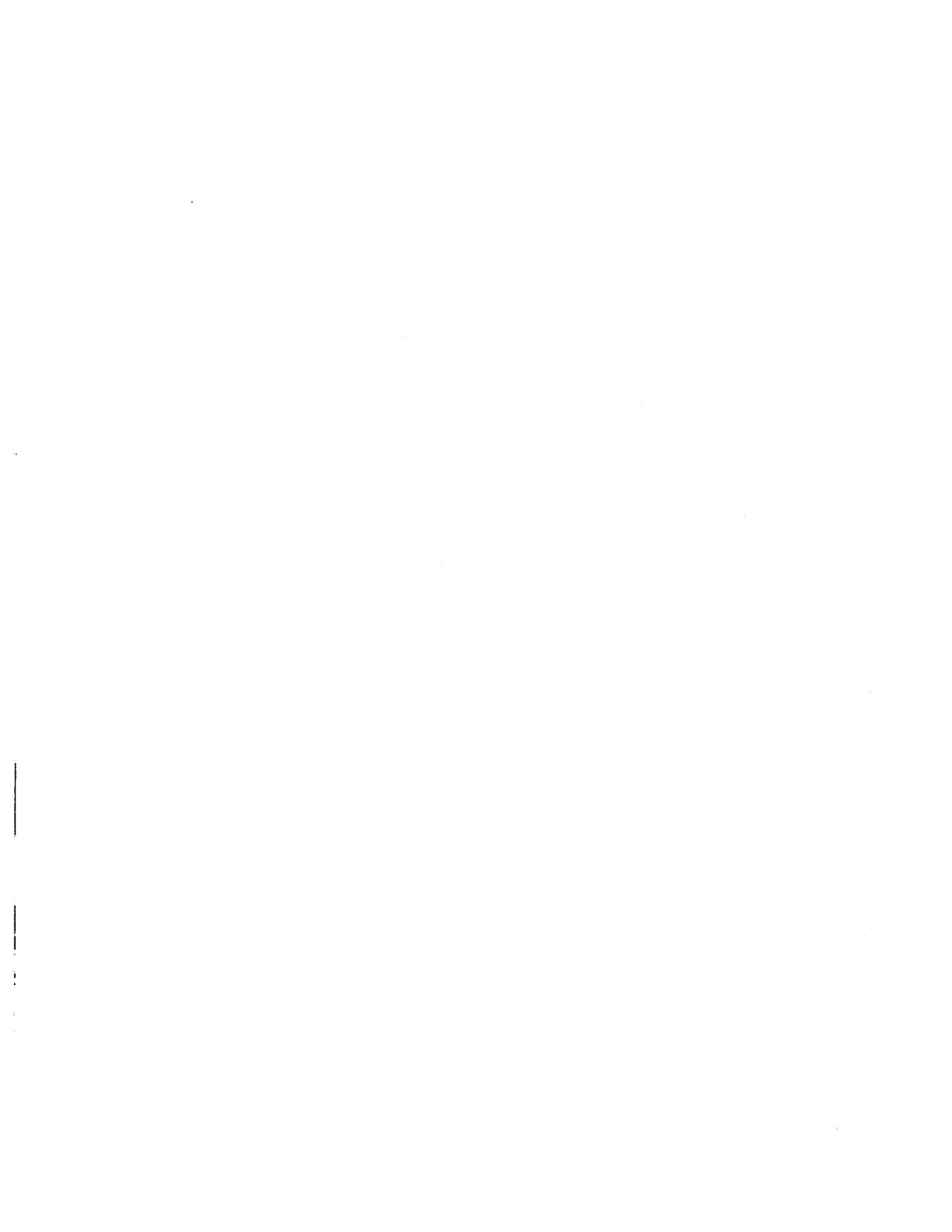
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	0.95	0.91	0.91	0.69	0.88	0.88	0.75	1.00	0.85
Lanes:	1.00	2.86	0.14	1.00	2.91	0.09	1.00	0.19	0.81	1.00	0.00	1.00
Final Sat.:	1805	4905	246	1805	5013	153	1321	321	1349	1416	0	1615

Capacity Analysis Module:

Vol/Sat:	0.02	0.33	0.33	0.12	0.22	0.22	0.01	0.02	0.02	0.08	0.00	0.06
Crit Moves:	****			****			****			****		
Green/Cycle:	0.23	0.49	0.49	0.18	0.44	0.44	0.13	0.13	0.13	0.13	0.00	0.13
Volume/Cap:	0.08	0.66	0.66	0.66	0.50	0.50	0.06	0.13	0.13	0.66	0.00	0.46
Uniform Del:	18.0	11.5	11.5	22.8	12.0	12.0	23.1	23.3	23.3	25.0	0.0	24.4
IncramntDel:	0.1	0.7	0.7	5.1	0.2	0.2	0.2	0.3	0.3	9.1	0.0	1.7
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Delay/Veh:	18.1	12.1	12.1	27.9	12.2	12.2	23.3	23.6	23.6	34.2	0.0	26.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.1	12.1	12.1	27.9	12.2	12.2	23.3	23.6	23.6	34.2	0.0	26.0
LOS by Move:	B	B	B	C	B	B	C	C	C	C	A	C
DesignQueue:	1	11	11	6	8	8	0	1	1	3	0	3

Appendix H

City of Garden Grove Parking Code Requirements
(Section 9.16.040.150)



SECTION 9.16.040.150: Parking spaces required

The number of off-street parking spaces required shall be no less than as set forth in the following schedule. Parking shall be calculated by the maximum building occupancy and/or the gross floor area, as applicable. Where the application of these schedules results in a fractional space, then the resulting fraction shall be rounded up to the higher whole number.

USE	REQUIRED MINIMUM PARKING SPACES
A. Residential Uses.	
1. Preschool/daycare	1 space per care provider and staff member plus 1 space for each 6 children
B. Commercial Uses.	
1. Retail	
a. Under 40,000 square feet	1 space per 200 square feet gross floor area
b. 40,000–100,000 square feet	1 space per 225 square feet gross floor area
c. 100,000+ square feet	1 space per 250 square feet gross floor area
2. Restaurants	
Eating, Drinking Establishments, Cafes, Cafeterias, Lounges, Bars	
a. Attached 0-16 seats less than 300 s.f. of customer/dining area	1 space per 200 square feet of gross floor area
b. Attached 16+ seats	1 space per 100 square feet of gross floor area with a minimum of 10 spaces
c. Freestanding	1 space per 100 square feet of gross floor area with a minimum of 10 spaces
d. With entertainment	1 space per 100 square feet of gross floor area (seating and service), plus 1 space per 35 square feet of entertainment area, plus 1 space per 7 square feet of dance floor
3. Service stations	
a. With convenience store	1 space per pump, plus 1 space per 200 square feet of gross floor area of sales area, plus 3 spaces per service bay
b. Without convenience store	1 space per employee, plus 3 spaces per service bay
4. Financial institutions	1 space per 200 square feet of gross floor area if a drive-up window exists. If no window, 1 space per 150 square feet of gross floor area
5. Nursery, home improvement center, building materials, furniture, general appliance stores	1 space per 200 square feet gross floor area

(large display area)	
6. Hotel and motel	1 space per unit plus 2 spaces for hotel manager unit
7. Personal service	1 space per 200 square feet of gross floor area
8. Professional studio	
a. Art, music, dance, martial arts	1 space per employee, plus 1 space per 2 students
b. Photography, portrait, radio, TV, recording	1 space per 200 square feet of gross floor area
c. Karaoke studios	1 space per 200 square feet of gross floor area 5 times the internal washing capacity for stacking and drying, plus 1 space per employee based on the maximum shift, not less than 3 (internal capacity is defined as conveyor length divided by 20 feet)
9. Automatic car wash	
10. Auto rental	
a. Office only	1 space per 250 square feet of gross floor area
b. Vehicle storage	1 space per 350 square feet of gross floor area of office, plus 1 space per vehicle 1 space per 400 square feet of gross floor area of inside display, plus 1 space per 2,000 square feet of outside display, plus 1 space per 500 square feet of gross floor area of repair, plus 1 space per 300 square feet of gross floor area of parts storage and sales area
11. Auto and boat sales, leasing	1 space per 200 square feet of gross floor area including auto paint and body of office space, plus 3 spaces per service bay
12. Auto repair and maintenance	
C. Office.	
1. General business offices	1 space per 250 square feet of gross floor area
2. Medical, dental and related service support facilities	1 space per 170 square feet of gross floor area
D. Industrial Uses.	
1. Industrial uses	
a. Buildings less than 20,000 square feet of gross floor area	2.25 spaces per 1,000 square feet of gross floor area
b. Buildings 20,001 to 100,000 square feet of gross floor area	2 spaces per 1,000 square feet of gross floor area
c. Buildings over 100,000 square feet of gross floor area	1 space per 1,000 square feet of gross floor area
d. Incidental Office:	
i. Under 30 percent of gross floor area	No additional requirements
ii. 30 to 50 percent of gross floor area of a building	1 space per 250 square feet of gross floor area

2. Mini-warehouses	1 space per 250 square feet of gross floor area of manager's office and residence, plus 2 covered spaces for manager's residence
E. Public and Semi-Public.	
1. Hospital	4 spaces per bed
2. Private school	
a. Elementary thru high school	1 space per each employee, plus 1 space for each 6 students
b. College or university	1 space per employee, plus 1 space per 3 students
3. Trade school--Adult education	1 space per employee, plus 1 space per 3 students (based on maximum occupancy allowable by building code), or 1 space per 35 square feet of instructional area, plus 1 space per 250 square feet of office space
4. Churches/religious facilities	Fixed seats: 1 space per each 3 fixed seats No fixed seats: 1 space for each 21 square feet of area designated for assembly purposes All ancillary area(s) shall provide 1 space for each 250 square feet of gross floor area
F. Commercial Recreation.	
1. Golf course	100 spaces per 9 holes; 200 spaces for 18 holes, plus requirements for other facilities
2. Golf driving range	1.5 spaces per tee
3. Bowling alley	3 spaces per alley plus spaces for other uses on-site
4. Movie theaters	
a. Single screen	.5 space per seat
b. Multi screen	.3 space per seat
5. Arcades, pool hall	1 space per 200 square feet of gross floor area
6. Night clubs	1 space per 7 square feet of dance floor, plus 1 space per 35 square feet of additional gross floor area
7. Assembly halls and dance floors	1 space per 7 square feet of dance floor or assembly area, plus 1 space per 35 square feet of additional gross floor area
8. Spa/health clubs/gyms	1 space per 200 square feet of gross floor area
9. Private clubs	1 space per each 15 square feet of assembly area
10. Water oriented parks	
a. Public swimming pool	1 space per 500 square feet, plus spaces required for other uses on-site
b. Amusement park	Parking study required
11. Skating rinks	1 space per 100 square feet of gross floor area, plus spaces required for other uses on-site
12. Adult entertainment uses	

- | | |
|---|--|
| a. Adult bookstores including video rental and video arcade | 1 space per 90 square feet |
| b. Adult motion picture theater/
mini motion picture theater | 1 space per 3 seats, plus 5 spaces for employees |
| c. Cabaret | 1 space per 25 square feet of gross floor area |
| d. Massage parlor | 1 space per 200 square feet of gross floor area |
| e. Escort bureau/introductory service | 1 space per 200 square feet of gross floor area |

Appendix I

Approved Scoping Agreement



Exhibit B - Scoping Agreement - Page 2

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- | | |
|---|---|
| 1. <u>West Street at Chapman Avenue</u> | 12. <u>Harbor Boulevard at Garden Grove Boulevard</u> |
| 2. <u>West Street at Lampson Avenue</u> | 13. <u>Harbor Blvd. at CA-22 WB Off Ramp/Banner Drive</u> |
| 3. <u>Harbor Boulevard at Katella Avenue</u> | 14. <u>Harbor Boulevard at Trask Avenue</u> |
| 4. <u>Harbor Boulevard at Orangewood Avenue</u> | 15. <u>CA-22 EB On-Ramp at Trask Avenue</u> |
| 5. <u>Harbor Boulevard at Chapman Avenue</u> | 16. <u>Project Access at TwinTree Lane</u> |
| 6. <u>Harbor Boulevard at Project Access 1</u> | 17. <u>Haster Street at Chapman Avenue</u> |
| 7. <u>Harbor Boulevard at Project Access 2/Sheraton</u> | 18. <u>Haster Street at Lampson Avenue</u> |
| 8. <u>Harbor Boulevard at TwinTree Lane</u> | 19. <u>Lewis Street at Chapman Avenue</u> |
| 9. <u>Harbor Boulevard at Lampson Avenue</u> | 20. <u>State College Boulevard at I-5 NB Ramps</u> |
| 10. <u>Harbor Boulevard at Blue Spruce Avenue</u> | 21. <u>State College Boulevard at I-5 SB Ramps</u> |
| 11. <u>Harbor Boulevard at Palm Street</u> | 22. <u>State College Boulevard at Chapman Avenue</u> |

E. Other Jurisdictional Impacts:

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? Yes No

If so, name of City Jurisdiction: City of Anaheim

F. Site Plan (please see attached)

G. Specific issues to be addressed in the Study (in addition to the standard analysis described

in the Guideline) (As requested by the Transportation Department)

- 1 Need for exclusive right turn lane into the Harbor Blvd/Project Access #1
- 2 Queuing analysis for left turn pocket into the Harbor Blvd/Project Access #2
- 3 Signal Warrant analysis for Harbor Blvd/Project Access #2
- 4 Restrict Project Access/TwinTree Avenue to rights out and lefts in only.
- 5 Need to update Harbor Blvd traffic signal synchronization (OCTA is currently implementing new timing plans)
- 6 Harbor Blvd/TwinTree Ln will be analyzed and no mitigation measures/restrictions will be recommended. The report will acknowledge that the intersection is falling with existing conditions.
- 7 Potential cut-through traffic impacts on Buaro (this became an issue for the previous project)

H. Existing Conditions

I. Significant Impact Threshold

As specified in the Orange County Growth Management Plan.

Recommended by:

Rogier Goedecke 4/28/11
Consultant's Representative Date

Scoping Agreement Submitted on 4/28/2011

Revised on _____

Approved Scoping Agreement: [Signature] 4/28/11
City of Garden Grove Date
Transportation Department

Subject: Fwd: Site "C" Hotel and Restaurant Acoustical Study
From: Greg Blodgett <greg1@ci.garden-grove.ca.us>
Date: Wed, 6 Jul 2011 15:44:58 -0700 (PDT)
To: Matthew Reid <matt.reid@landanddesign.com>
CC: Paul Guerrero <paulg@ci.garden-grove.ca.us>

Greg Blodgett
SR Project Manager
City of Garden Grove
Economic Development

----- Forwarded Message -----

From: "Jayna Morgan" <Jayna.Morgan@aecom.com>
To: "Karl Hill" <karlh@garden-grove.org>
Cc: "greg1" <greg1@garden-grove.org>
Sent: Thursday, June 23, 2011 11:06:49 AM
Subject: FW: Site "C" Hotel and Restaurant Acoustical Study

Here is the noise study.

Jayna Morgan

AECOM

T. 949.660.8044

From: Nancy Quach [mailto:nq@rkengineer.com]
Sent: Tuesday, June 21, 2011 3:05 PM
To: Morgan, Jayna
Cc: Rogier Goedecke
Subject: FW: Site "C" Hotel and Restaurant Acoustical Study, City of Garden Grove
(JN:0762-2011-02/RK9010)

From: Nancy Quach
Sent: Thursday, May 19, 2011 11:00 AM
To: 'greg1@ci.garden-grove.ca.us'
Cc: 'Jayna.Morgan@aecom.com'; Bob Kahn; Michael Dickerson
Subject: Site "C" Hotel and Restaurant Acoustical Study, City of Garden Grove
(JN:0762-2011-02/RK9010)

Dear Mr. Blodgett:

Please find the attached PDF of the Site "C" Hotel and Restaurant Acoustical Study, City of Garden Grove (JN:0762-2011-02/RK9010). If you would like hardcopies of the report, please feel free to contact us at (949) 474-0809 or via e-mail. We would be happy to send them out to you.

If you have any questions, please do not hesitate to call Mike Dickerson at (949) 474-0809, ext. 208.

We have enjoyed teaming with you on this project and look forward to partnering with you on future projects.

Kind regards,

Nancy Quach
Administrative Assistant

transportation planning / traffic engineering & design
acoustical engineering / community traffic calming
4000 Westerly Place, Suite 280
Newport Beach, CA 92660
tel. 949.474.0809
fax. 949.474.0902
www.rkengineer.com

—image001.gif—



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—RK9010.pdf—

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Content-Encoding: base64

LETTER OF TRANSMITTAL

TO: CITY OF GARDEN GROVE
11222 Acacia Parkway
Garden Grove, CA 92840

DATE: May 16, 2011

JOB NO.: 0762-2011-02

SUBJECT: Site "C" Hotel and Restaurant Acoustical Study, City of Garden Grove

ATTN: Mr. Greg Blodgett

WE ARE FORWARDING: By Messenger By Email
 By Blueprinter By Fedex (Priority)

NUMBER OF COPIES	DESCRIPTION
1	PDF copy for your use

SENT FOR YOUR	STATUS	PLEASE NOTE
<input type="checkbox"/> Approval	<input type="checkbox"/> Preliminary	<input type="checkbox"/> Revisions
<input type="checkbox"/> Signature	<input type="checkbox"/> Revised	<input type="checkbox"/> Additions
<input checked="" type="checkbox"/> Use	<input type="checkbox"/> Approved	<input type="checkbox"/> Omissions
<input type="checkbox"/> File	<input type="checkbox"/> Released	<input type="checkbox"/> Corrections

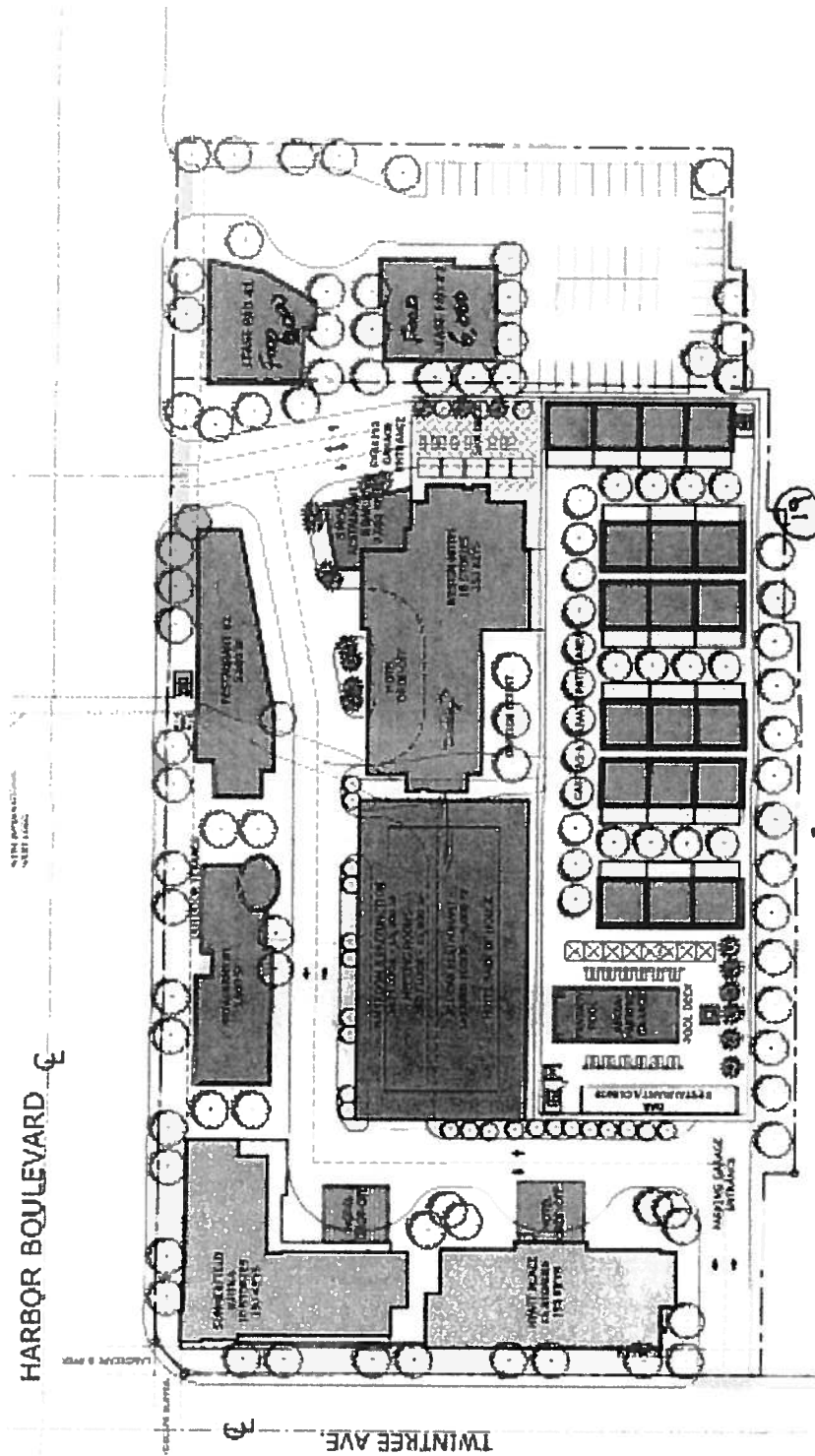
REMARKS:
Attached please find the Site "C" Hotel and Restaurant Acoustical Study, City of Garden Grove. Please call Mike Dickerson at (949) 474-0809, extension 208, if you have any questions.

BY: *Mike Dickerson*
Mike Dickerson
Acoustical Engineer, INCE

COPIES TO:

SITE 'C' HOTEL AND RESTAURANT ACOUSTICAL STUDY

City of Garden Grove, California



May 16, 2011

Mr. Greg Blodgett
CITY OF GARDEN GROVE
11222 Acacia Parkway
Garden Grove, CA 92840

Subject: Site "C" Hotel and Restaurant Acoustical Study, City of Garden Grove

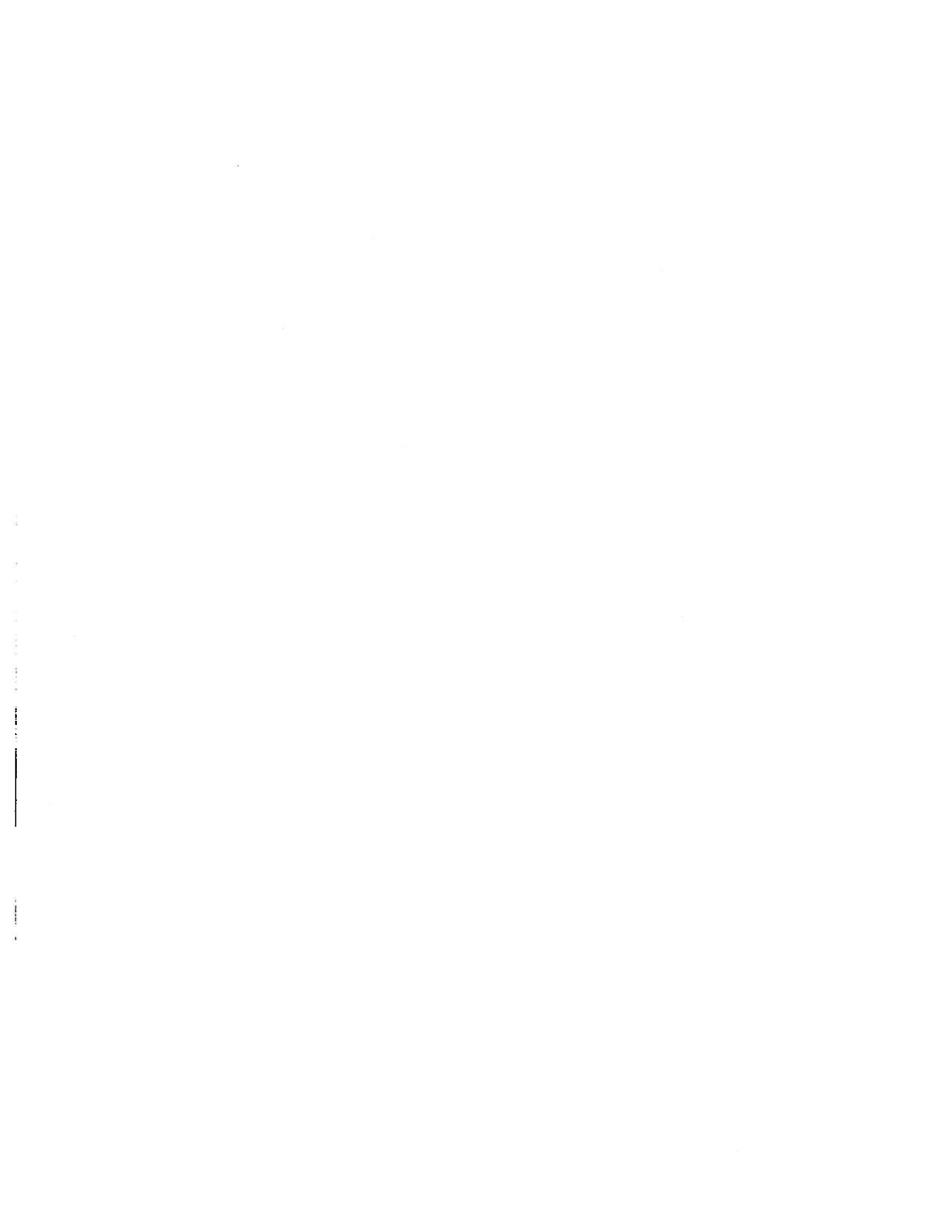
Dear Mr. Blodgett:

RK ENGINEERING GROUP, INC. (RK) has completed an acoustical analysis of the proposed Site "C" Hotel and Restaurant project. The proposed project is located at the northeast corner of Harbor Boulevard and Twintree Lane in the City of Garden Grove, as indicated in Exhibit A. The proposed project's site plan is shown in Exhibit B.

The project was assessed with respect to both on and off-site generated noise impacts to the project site and surrounding residential communities. The primary sources of on-site noise impacts would include short-term construction noise and long-term operational noise (i.e. trash compactor, truck deliveries loading/unloading and noise from parking structure). The primary source of off-site generated noise impacts would include roadway noise propagating from Harbor Boulevard and Twintree Lane. The expected change in average daily traffic (ADT) was assessed and compared to the City's roadway noise standard, as defined in the Noise Element. Roadway noise impacts should be below the 65 decibel A-weighted (dBA) Community Noise Equivalent Level (CNEL) exterior and 45 dBA CNEL interior standards for commercial land use. The acoustical parameters, including the City Noise Standards from the Noise Element, are included in Appendix A.

In order to assess the potential noise impacts, RK conducted a site visit to the project site to obtain ambient noise measurements. The noise levels represent the ambient noise associated in the area during the times of the measurements as indicated in Table 1 and Exhibit C. In addition to the ambient noise measurements, RK obtained noise data for the hotel operations by assessing existing facilities with similar parameters.

With the implementation of the required and recommended mitigation measures in this report, the Site "C" Hotel and Restaurant project is expected to meet the required noise standards, as specified by the City of Garden Grove.




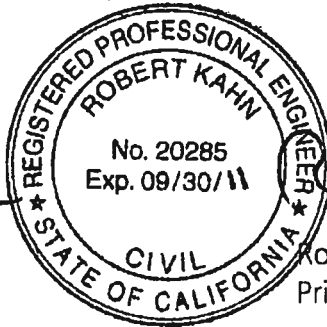
Mr. Greg Blodgett
CITY OF GARDEN GROVE
May 16, 2011
Page 2

RK is pleased to provide CITY OF GARDEN GROVE with the acoustical analysis for the Site "C" Hotel and Restaurant project. If you have any questions regarding this study or need further review, please call us at (949) 474-0809.

Sincerely,
RK ENGINEERING GROUP, INC.

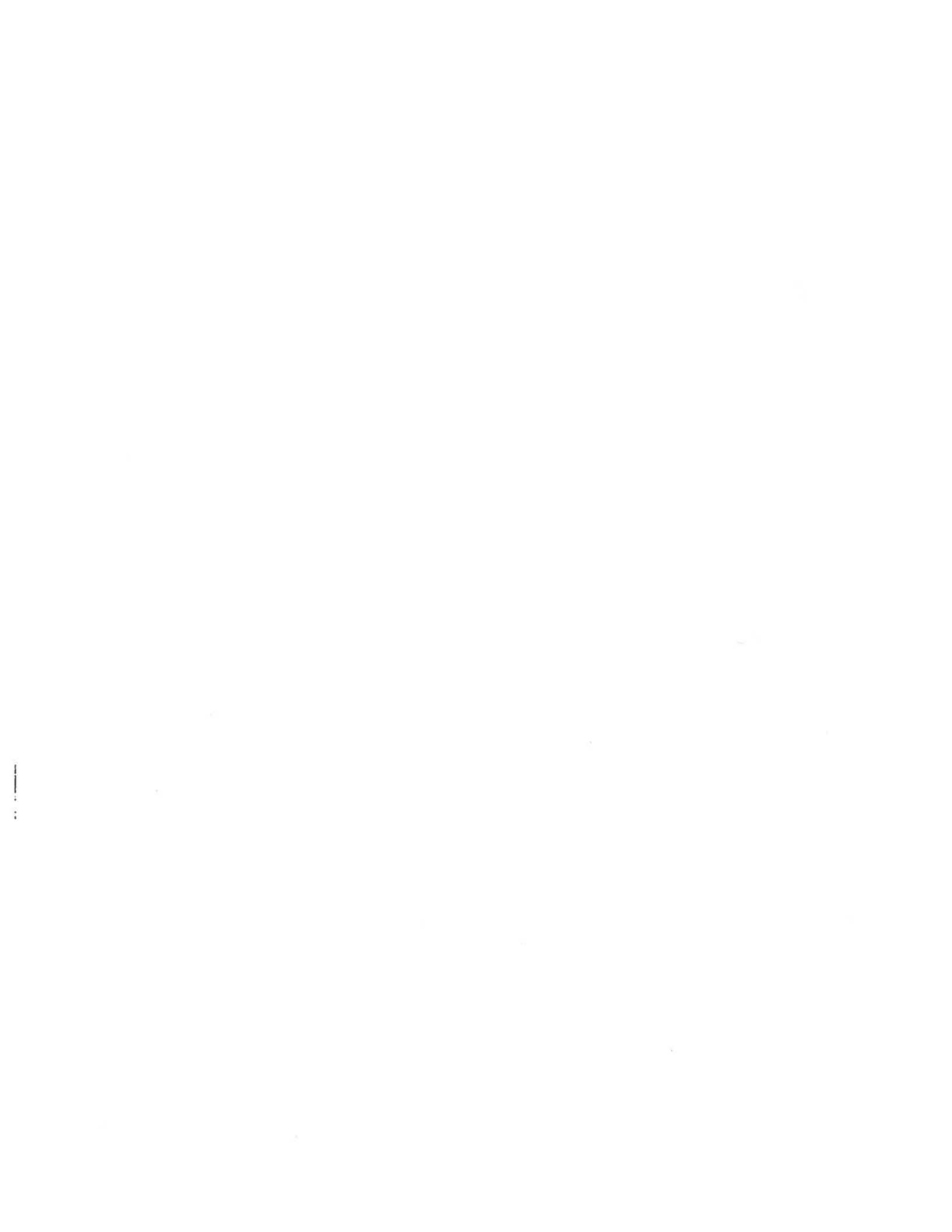


Michael Dickerson, INCE
Noise/Air Specialist



Robert Kahn, P.E.
Principal

Attachments



**SITE "C" HOTEL AND RESTAURANT
ACOUSTICAL STUDY
City of Garden Grove, California**

Prepared for:

CITY OF GARDEN GROVE
11222 Acacia Parkway
Garden Grove, CA 92840

Prepared by:

RK ENGINEERING GROUP, INC.
4000 Westerly Place, Suite 280
Newport Beach, CA 92660

**Michael Dickerson
Robert Kahn, P.E.**



May 16, 2011

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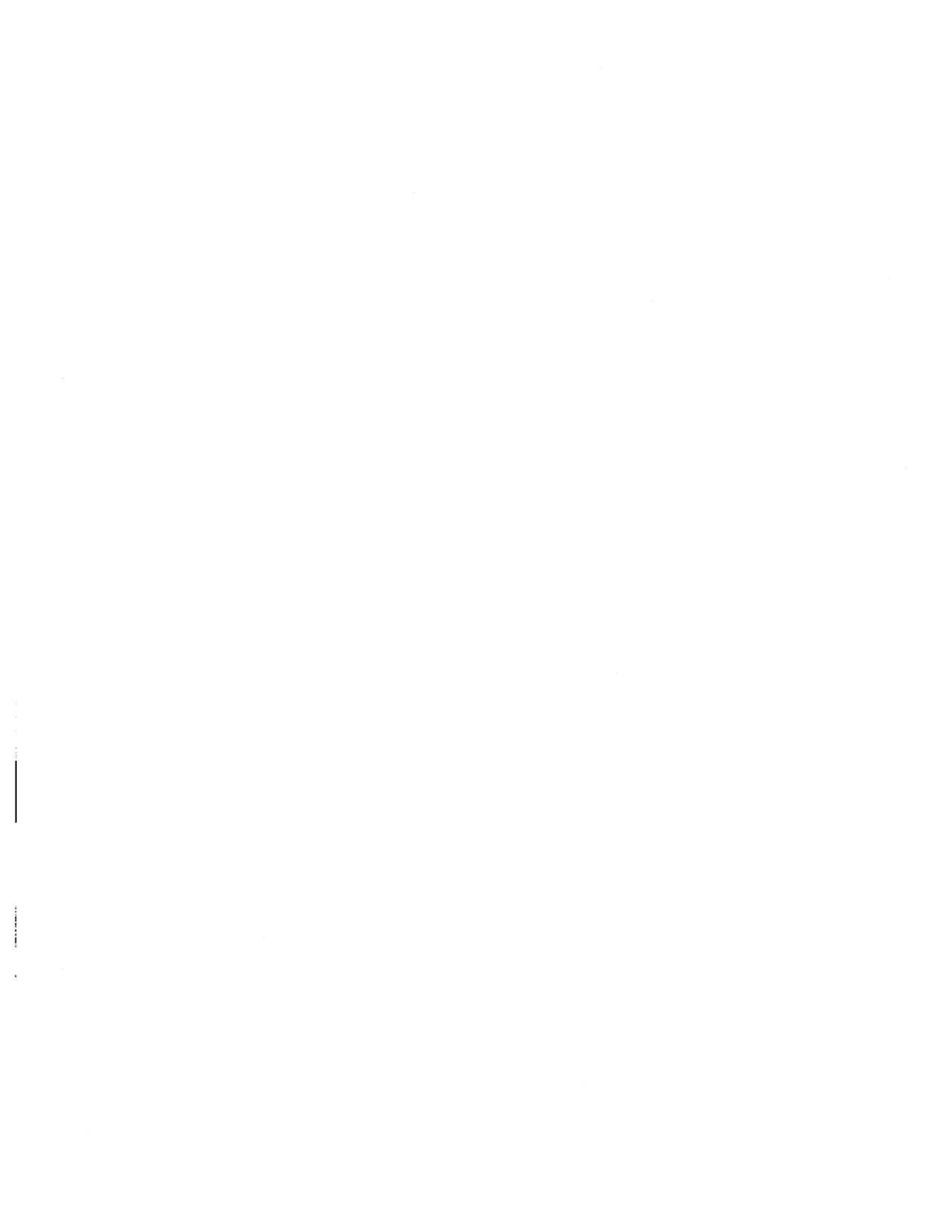
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1.0 Executive Summary

This acoustical analysis and design evaluates the potential noise impacts and necessary mitigation measures for the Site "C" Hotel and Restaurant project. The project is located at the northeast corner of Harbor Boulevard and Twintree Lane in the City of Garden Grove, as indicated in Exhibit A. The site plan used for this analysis, provided by AECOM, is presented in Exhibit B. The 5 acre project site will consist of 769 room (10 to 18 story) full-service resort hotels with approximately 30,000 square feet of meeting space and 34,000 square feet of restaurant space included on-site via detached PADs, and an approximate 5-story parking structure. The noise regulations for the project site are listed in the *Noise Standard* section of the study.

A detailed list of required and recommended noise control measures is presented in the Summary of Mitigation Requirements section of this study (also graphically illustrated on Exhibits C). The noise control analysis and recommendations in this study are intended to satisfy the City of Garden Grove Conditions of Approval, with respect to this project.

1.1 Roadway Noise Analysis

A roadway noise analysis was performed based on current and future average daily traffic (ADT) volumes along subject roadways. Typically a significant impact is considered to be a noise level exceeding the normally acceptable 65 dBA CNEL exterior standard for residential/commercial land uses.

RK utilized the traffic impact study performed by RK Engineering Group, Inc. (Site "C" Hotel and Restaurant Traffic Impact Study) and the short-term noise measurements to calculate the roadway noise levels. The project was assessed as follows: The existing roadway noise levels, 2014 without project roadway noise levels, 2014 with project noise levels, as indicated in Tables 2 through 5.

The results of the roadway analysis indicates that the roadway network currently experiences noise levels of 49.1 to 68.1 dBA CNEL at a distance of 100 feet from the centerline of the analyzed road. The 2014 without project noise levels will range from 49.3 to 68.3 dBA CNEL at a distance of 100 feet from the centerline as indicated in Table 3. The 2014 with project noise levels will range from 59.6 to 68.3 at a distance of 100 feet from the centerline, as indicated in Table 4. Table 5 indicates the project's projected roadway noise level contribution to the surrounding area. The proposed project will further increase noise levels along the subject roadways by approximately 0.0 to 2.5 dBA CNEL. **The project's contribution to the adjacent roadway noise environment is insignificant.**

The project site has one exterior area (outdoor swim area) which would be considered an exterior sensitive receiver location. The outdoor swim area will be located on top of the parking structure and will be shielded by the hotel building facade. The architectural shielding from the building facades will mitigate noise levels at the exterior pool area to approximately 58.1 dBA CNEL, therefore no significant exterior impact from the roadway noise is expected.

1.2 Interior Noise Analysis

An interior noise analysis was performed to calculate the projected interior noise levels. The City has a retail interior noise standard of 45 dBA CNEL. The interior noise projection is the difference between the exterior noise levels and the attenuating effects of the building construction shell. The City's interior noise standard of 45 dBA CNEL will be met with a "windows closed" condition and commercially glazed glass with an STC value of at least 25 as indicated in Table 6.

1.3 Stationary Noise Analysis

The stationary noise impacts associated with the proposed project would include loading/unloading area noise, parking structure noise, and outdoor pool equipment.

Two sensitive noise areas (single family dwelling units) are located directly east and south of the project site. The stationary noise impacts were projected to these residential homes.

To approximate the noise levels associated with the stationary noise sources located throughout the project site (demonstrated on Exhibit D), noise level data with similar parameters were collected and are presented in Table 8 and Appendix F. Table 8 indicates the reference noise levels associated with trash compactor, loading/unloading areas, parking structures, and the outdoor pool area (monitored by RK Engineering Group, Inc.).

Existing Noise Environment

To help assess the potential noise impacts of the proposed project, four (4) short-term noise measurements were taken at or near the project site during daytime and nighttime hours. Short-term noise monitoring location 1 (ST-1) was taken approximately 50 feet from the centerline of Twintree Lane, (front yard of residential unit 12531 Twintree Lane). ST-1 describes the noise environment associated with the residential units south of the project site. ST-2 was taken in the cul-de-sac (near residential unit 12233 Choisser Road). ST-2 noise levels describe the existing noise environment associated with the residential units east of the project site. ST-3 was taken at the southeast corner of Choisser Road and Greentree Lane (45 feet from the centerline). ST-3 describes the existing noise levels associated with the residential units east of the project site. ST-4 was taken at the existing RV Park (approximately 10 feet west of the existing 6 foot high property line wall). ST-4 describes the existing noise levels associated with backyards of the residential units east of the project site. All short-term noise measurements indicate that the existing traffic along the subject roadways is the main source of noise impacting the existing environment.

Future Noise Environment

By imputing the referenced and measured noise levels associated with the ambient noise conditions near and around the project site, future noise levels were calculated. The projected exterior combined Noise Equivalency Level (Leq) for the nearest adjacent properties will range between 51.3 to 56.9 dBA Leq during daytime hours (7AM – 10PM) and 49.2 to 51.1 dBA Leq during nighttime hours (10PM – 7AM). The hotel and restaurant hours of operation are expected to occur during daytime hours; however this analysis includes nighttime operations as well, for comparison purposes. Noise levels associated with the hotel and restaurant operations are not expected to significantly impact the adjacent residential units. Additional noise level reduction measures are outlined to further reduce potential noise levels.

The results of the stationary acoustical analysis indicate that noise levels associated with the project site will be below the City's standard at the east and southern property lines during the day and nighttime hours. Furthermore, the architectural building design of the hotel structure and the parking structure will provide sufficient shielding from the traffic noise along Harbor Boulevard.

1.4 Construction Noise Analysis

Construction noise represents a short-term impact on the ambient noise levels. The degree of construction may vary for different areas of the project site; as a result, noise levels associated with construction will vary. Construction noise levels will also vary during construction phases. The project site is expected to be under construction for approximately two years. Noise generated by construction equipment includes trucks, graders, bull dozers, concrete mixers and portable generators. The peak noise level for most of the equipment that will be utilized during the construction phase will be approximately 70 to 90 decibel A-weighted (dBA) at a distance of 50 feet from the noise source.

Currently there are two noise sensitive receiver areas (residential homes) located east and south of the project site. Table 13 indicates the approximate noise levels near the property lines of the project site. The noise levels will fluctuate depending on the distance and number of equipment operating at the same time. This analysis assumes a worst-case scenario. The noise level will range from 74.0 to 77.9 dBA equivalent noise level (Leq) during the different phases of construction.

The City has adopted the Noise Performance Standards from the City's Noise Ordinance. Construction activities must follow the Noise Ordinance regulations. Refer to Section 2.0 *Summary of Mitigation Requirements* for noise reduction measures or noise regulations that would potentially reduce construction impacts to a less than significant level.

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2.0 Summary of Mitigation Requirements

Roadway noise impacts propagating from Harbor Boulevard and Twintree Lane to the project site and to the surrounding area were assessed and compared to the City's guidelines for residential/ commercial land use. The results of the roadway CNEL analysis include existing, future without and with project buildout average daily traffic (ADT) volumes along the analyzed roadways, as detailed in Tables 2 through 5. The result of the project's contribution to the existing environment is indicated in Table 5.

The predicted future interior noise levels at the project site were estimated as indicated in Table 6.

Stationary noise levels propagating from the project site to the adjacent properties were assessed and compared to the City's Stationary noise ordinance. Exhibit D illustrates the locations of these stationary noise sources. Tables 9 and 10 indicate the estimated future noise levels as a result of the proposed project.

The project's construction noise levels were calculated and are highlighted in Table 13. A summary of all noise requirements, recommendations and locations is shown on Exhibit E.

The proposed project is not expected to impact the adjacent land uses from a noise standpoint. However, to ensure noise levels remain low there are several required and recommended noise reduction measures to reduce noise impacts.

2.1 Roadway Noise Reduction Measures

Roadway noise impact standards from the City of Garden Grove's Noise Standards are listed within the Noise Standards section of the report and in Appendix A. The project site's architectural layout design will further reduce potential roadway noise

impacts from Harbor Boulevard and Twintree Lane to the proposed residential units, located adjacent to the project site

2.2 Stationary Noise Reduction Measures

1. An 8 foot shielding wall is recommended along the east property line.
2. Delivery truck operations and loading and unloading activities should be limited to daytime hours between the hours of 7:00 AM to 10:00 PM.
3. Idling trucks should be limited to five minutes in length.
4. Any trash compactor/pool equipment should be shielded by a parapet wall, or fully enclosed. The mechanical equipment should be placed at a distances furthest from the nearest residential dwelling units. The height of the walls should be at least as high as or higher than the mechanical equipment.
5. It is recommended that the parking structure have 4 foot shielding walls for each floor that faces the residential units to the east.
6. Once project site is in operation, it is recommended that noise monitoring occur to ensure the project site is operating within the City's criteria.

2.3 Construction Noise Reduction Measures

Construction operations must follow the City's General Plan and the noise ordinance which states that operations cannot exceed the stipulations set-forth in Section 8.47.050 and 8.47.060. A number of noise reduction measures are recommended to minimize noise impacts.

1. Construction operations must not occur during the hours of 10:00 PM – 7:00 AM.
2. During construction, the contractor should ensure all construction equipment is equipped with appropriate noise attenuating devices.
3. Idling equipment should be turned off when not in use.

4. Equipment will be maintained so that parts of vehicles and their loads are secured from rattling and banging.

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3.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used within the report.

3.1 Sound, Noise and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic, or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

3.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

3.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square meter (N/m^2), also called micro-Pascal (μPa). One μPa is approximately one hundred billionths (0.0000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p)

is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels abbreviated dB.

3.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds of equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

3.5 Human Response to Changes in Noise Levels

In general the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, (A-weighted scale) and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically the human ear can barely perceive the change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

3.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns other are random. Some noise levels are constant while others are sporadic. Noise descriptors were created to describe the different time-varying noise

levels. Appendix B indicates the most commonly used noise descriptors and gives a brief definition.

3.7 Traffic Noise Prediction

Noise levels associated with traffic depends on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2 – 6 wheels) and heavy truck percentage (3 axle and greater), and sound propagation. The greater the volume of traffic, higher speeds and truck percentages equate to a louder volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

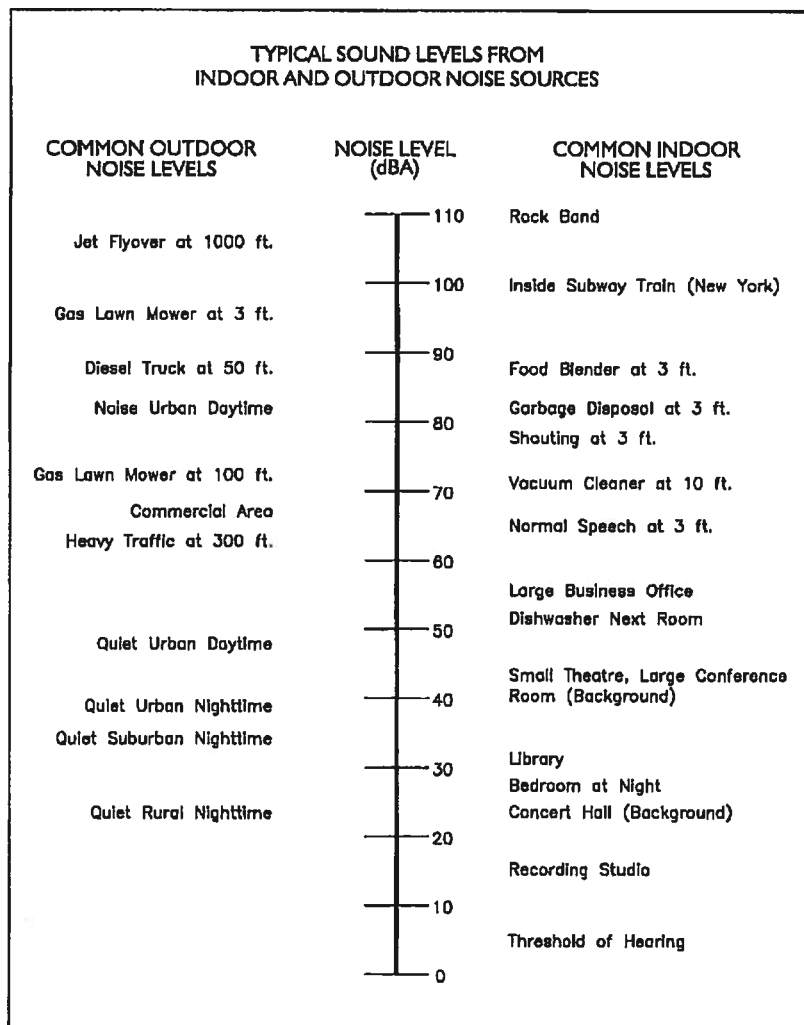
3.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at an additional rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per

doubling of distance for a line source and 6.0 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet from a noise source. Wind, temperature, air humidity and turbulence can further impact how far sound can travel.



4.0 Introduction

This acoustical study evaluates the potential on/off-site noise impacts to and from the proposed Site "C" Hotel and Restaurant project by assessing the projected noise impacts generated by the local roadway network, investigating the existing ambient noise conditions, identifying noise sensitive locations, and predicting the future noise level impacts. The Site "C" Hotel and Restaurant project is located at the northeast corner of Harbor Boulevard and Twintree Lane in the City of Garden Grove.

The general location of the project is shown in the Location Map, Exhibit A. The site plan used for this analysis, provided by CITY OF GARDEN GROVE, is presented on Exhibit B.

The following sections outline the expected noise levels surrounding the planned site and compare these noise levels to the applicable noise standards. The design requirements and recommendations, as outlined in the *Summary of Mitigation Requirements* section of this study, are intended to satisfy the City of Garden Grove noise standards.

4.1 Noise Standards

The acoustical parameters including the City Noise Standards from the Noise Element and Noise Ordinance are included in Appendix A. The noise regulations include parameters for roadway and stationary noise impacts.

4.1.1 Roadway Noise Regulations

Roadway noise impacts, specified within the Noise Element, should be below the 65 dBA CNEL exterior and 45 dBA CNEL interior residential/commercial land use threshold.

4.1.2 Stationary Noise Regulations

The stationary noise impacts, as defined by the City Noise Ordinance, should not exceed exterior residential noise intrusion standard during the daytime (7 AM to 10 PM) and nighttime (10 PM to 7 AM) shown below in Figure 1.

Figure 1

Noise Ordinance Stationary Noise Standards

		Noise Criteria Level (dBA)					
		Cumulative Time Period	0 Minutes	1 Minute	5 Minutes	15 Minutes	30 minutes
		Symbol	L_{max}	L_2	L_5	L_{25}	L_{50}
	Time						
Exterior	Daytime (7 AM to 10 PM)		75.0	70.0	65.0	60.0	55.0
	Nighttime (10 PM to 7 AM)		70.0	65.0	60.0	55.0	50.0

A common way of describing noise levels from stationary sources is with the percent noise level (L_p). The percent noise level indicates the noise level which is exceeded during a certain percentage of time and represents the average noise level. Appendix B contains more definitions and examples.

4.1.3 Construction Noise Regulations

Construction noise is defined as noise which is disturbing, excessive or offensive and constitutes a nuisance involving discomfort or annoyance to persons of normal sensitivity residing in the area, which is generated by the use of any tools, machinery or equipment used in connection with construction operations. The following describes the regulations with regard to construction activities (Section 8.47.060d):

d.) Construction of Buildings and Projects: It shall be unlawful for any person within a residential area, or within a radius of 500 feet there from, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects, or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day in such a manner that a person of normal sensitiveness, as determined utilizing the criteria established in Section 8.47.050(a), is caused discomfort or annoyance unless such operations are of an emergency nature.

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5.0 Study Method and Procedure

A glossary of acoustical terms is included in Appendix B.

5.1 CNEL Noise Modeling

The CNEL noise analysis uses a version of the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108), together with several key roadway and site parameters. Key inputs include roadway classification (e.g. Principal Arterial Highway, Major Arterial Highway, Primary Arterial Highway, Secondary Highway and Collector), roadway active width (the distance between the center of the outer most travel lanes on each side of the roadway), Buildout Average Daily Traffic (ADT), travel speed, percentages of automobiles, medium trucks and heavy trucks in the roadway volume, roadway grade, angle of view, site conditions ("hard" or "soft"), and percent of total ADT which flows each hour throughout a 24-hour period.

The key input data for these barrier performance equations include; performance equations including relative source-barrier-receiver horizontal separations, relative source-barrier-receiver vertical separations, typical noise source spectra, and barrier transmission loss. Some of the general assumptions used in determining the source and receiver geometry are listed below:

Receiver Geometry

Horizontal Geometry: Distance behind top-of-slope barrier: 10 feet

Vertical Geometry: Height above pad for ground level receivers:
Exterior: 5 feet above ground
1st Floor Interior: 5 feet above finished floor
2nd Floor Interior: 15 feet above finished floor

Source Assumptions

Horizontal Geometry: For roadways with grades no greater than 2%, all vehicles are located at the single-lane equivalent acoustical center of the full roadway. For roadways with over 2% grade, vehicle count is divided in half and is located at the single-lane acoustical equivalent for each side of the roadway.

Vertical Geometry: Height above road grade:
Autos: 2.0 feet
Medium Trucks: 4.0 feet
Heavy Trucks: 8.0 feet

5.1.1 Exterior Noise Level

The CNEL model calculates the noise impacts produced by the adjacent roadway. The output of the model was compared to the Residential Land Use Noise Standard found in the Noise Element. The City has a 65 dBA CNEL exterior noise standard for residential land use (i.e. back and side yards). The predicted worst-case exterior noise levels along Harbor Boulevard will range from 67.0 to 68.3 dBA CNEL at 100 feet by the Year 2014. It is important to note that noise levels at the back yards of the residential land uses are not anticipated to be above the noise standard. Furthermore, the architectural layout of the project site will provide further shielding to the residential units (to the east) from traffic noise levels propagating from Harbor Boulevard.

5.1.2 Interior Noise Level

The CNEL model calculates the noise impacts produced by the adjacent roadway. The output of the model was compared to the Residential Land Use Noise Standard

found in the Noise Element. The City has a 45 dBA CNEL interior residential land use threshold. The interior noise levels will be below the City's standard with a "windows closed" condition and commercially glazed glass. No impact is expected.

5.2 Stationary Source Noise Modeling

The stationary source noise analysis uses a version of the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108), together with several key site parameters, to project the expected impacts on the existing adjacent land uses as a result of the proposed development. Key inputs include noise attributed to the stationary noise sources (i.e. mechanical equipment, loading/unloading area, parking structure, outdoor pool area noise, along with specific distances.

Using the Noise Barrier Calculations and the key parameters, a barrier analysis was performed to determine noise computations. The key input data for these barrier performance equations include relative source-barrier-receiver horizontal separations, relative source-barrier-receiver vertical separations, typical noise source spectra, and barrier transmission loss. Some of the general assumptions used in determining the source and receiver geometry are listed below:

Receiver Geometry

Horizontal Geometry: Distance behind top-of-slope barrier: 10 feet

Vertical Geometry: Height above pad for ground level receivers:

Exterior:	5 feet above ground
1 st Floor:	5 feet above finished floor
2 nd Floor:	15 feet above finished floor

Source Assumptions

Horizontal Geometry: Stationary noise source distance based upon building locations and adjacent residential receivers.

Vertical Geometry: Height above pad grade for each stationary source.

These assumptions and the site plan (Exhibit B) were used to fix the horizontal and vertical geometry used in the barrier analysis.

The stationary source model incorporates the City of Garden Grove's Noise Ordinance Standards and is defined in the *Noise Standard* section of the report.

5.3 Construction Noise Modeling

The construction noise analysis utilizes the Federal Highway Administration (FHWA) Roadway Construction Noise Model, together with several key construction parameters. Key inputs include distance to the sensitive receiver, equipment usage, and baseline parameters for the project site. This study evaluates the potential exterior noise impacts. For purposes of the project, the project was analyzed based on worst-case construction noise during the loudest phase. The following assumptions relevant to short-term construction noise impacts were used:

- Project construction will occur in a single phase and last approximately two years. The project site currently is partially developed but will be razed to accommodate the proposed project. Construction noise is expected to be the loudest during the grading, building and concrete phases.
- Grading is expected to last approximately 1 to 3 months. The use of two (2) dozers, six (6) scrapers, one (1) front-end loader, two (2) graders, and one (1) water truck were estimated to be utilized during grading.

- Building is expected to last approximately 20 to 26 months in which heavy concrete operations will occur. The use of four (4) backhoes, two (2) loaders, three (3) generators, 1 to 15 delivery trucks per day, and 1 to 20 concrete trucks deliveries per day will occur during the building phase.

The analysis indicates that the conservative exterior noise levels generated by the construction to the various property lines will approximately range from 70.3 to 85.0 dBA Leq with a maximum noise level ranging from 71.4 to 83.6 dBA Lmax. The noise levels will vary depending on multiple factors, therefore these noise levels reflect a worst-case scenario. These noise levels are assumed over a one-hour time period.

The project is not expected to generate any vibration impact during the construction phase. The estimated construction equipment for the development does not utilize any heavy pile driving or other vibration impacting equipment.

5.4 Noise Measurements

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts.
- Locations that are acoustically representative and equivalent of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

Noise measurements were conducted on April 27, 2011 using a Larson Davis 712 sound level meter. Noise monitoring locations are indicated in Table 1 and Exhibit C. The following gives a brief description of the Caltrans Technical Noise Supplement procedures:

- Microphones for sound level meters were placed 5-feet above the ground for all measurements
- Sound level meters were calibrated before and after each measurement
- Following the calibration of equipment, a wind screen was placed over the microphone
- Frequency weighting was set on "A" and slow response
- Results of the short-term noise measurements were recorded on field data sheets
- During short-term noise measurements any noise contaminations such as barking dogs, local traffic, lawn mowers, or aircraft fly-overs were noted
- Temperature and sky conditions were observed and documented

6.0 Existing Noise Environment

RK visited the project site on April 27, 2011 to obtain ambient noise data during the day/night hours. Noise monitoring occurred along the northern, eastern (backyard/side yard of the residential units), and southern property lines. Currently, the project site has a RV Park, an existing restaurant and vacant land uses. The existing structures will be razed for new construction.

6.1 Ambient Noise Measurements

A total of 4 short-term noise (ST) measurements were performed at or near the project site. The location of the noise measurements are representative of a noise sensitive area. As previously describe, ST-1 represents the residential units south of the southern property line, ST-2 represents the commercial/residential units located at the north eastern corner of the project site. ST-3 and ST-4 represent the backyards of the residential units east of the project site. Table 1 and Exhibit C illustrate the results of the noise measurements. Photographs of the measurement sites are shown in Appendix C.

Noise levels during daytime (7:00 AM -10:00 PM) hours range from 49.4 to 58.2 dBA Leq over a 10 minute interval, at the various noise monitoring locations. The noise levels fluctuate based on distance, elevation, existing walls, and time of day. The noise level measurements are utilized to establish an existing noise condition. Future noise conditions are calculated based on the existing conditions, plus the projected future noise environment created by the project site.

6.2 Project Site

The 5 acre project site will consist of 769 room (10 to 18 story) full-service resort hotels with approximately 30,000 square feet of meeting space and 34,000 square

feet of restaurant space included on-site via detached PADs, and an approximate (5) story parking structure. The short-term noise data at the project site indicates that the existing traffic noise levels and ambient noise levels are below the City's exterior noise standard. The relative distances of the noise meter locations are described in Appendix C.

Site "C" Hotel and Restaurant project site is zoned for international mixed use according to the City of Garden Grove General Plan within the General Plan Land Use Element (Appendix A). The noise standards for the project site are listed in the Noise Standard section of the study. The proposed land uses surrounding the project site consist of residential units and therefore the noise study utilizes the residential noise standards.

7.0 Future Noise Environment and Impacts

7.1 Future Exterior Noise

The future exterior noise levels analyze the potential roadway noise impacts to and from the project site and stationary noise (loading/unloading area, trash compactor, and parking structure) from the project site to the surrounding area.

7.1.1 Traffic Noise Data

The City has a normally acceptable exterior standard of 65 dBA CNEL for residential/mixed land use. It is expected that roadway traffic along Harbor Boulevard will be the main source of off-site noise impacting the project site. According to the Traffic Impact Study performed by RK Engineering Group, Inc. (Site "C" Hotel and Restaurant TIS), the project will generate approximately 4,352 ADT along Harbor Boulevard (s/o Chapman Ave) and approximately 388 ADT along Twintree Lane (e/o Harbor). Tables 2 through 5 indicate the exterior roadway noise levels along the local roadway network. Each table indicates a different scenario. Table 5 indicates the projected worst-case exterior noise levels will range from 51.8 to 68.3 dBA CNEL at a distance of 100 feet from the centerline of the roadway by the Year 2014. No mitigation is required since this is considered a less than significant impact. Appendix D demonstrates the roadway calculations.

7.1.2 Stationary Noise Data

The stationary noise impact thresholds, as defined by the City's Municipal Code are shown in Figure 1 (Section 4.1.2). The noise code establishes exterior allowable noise levels during certain times of the day. This analysis reviews the permissible noise levels during daytime (7AM – 10PM) and nighttime (10PM – 7AM) hours. The noise code

states that stationary noise levels from a project site must not exceed the exterior noise level during day/nighttime hours at the measured property line, where there are noise sensitive receivers.

To project an exterior noise level to the adjacent property lines, reference stationary noise levels were measured and then extrapolated to the nearest sensitive noise land use area near the project site. Tables 9 and 10 indicate the projected exterior stationary noise levels to the nearest property lines and noise sensitive areas. The exterior noise levels at or near the property lines are expected to increase approximately 0.0 to 3.8 dBA (depending on the L(%) noise criteria). Typically it takes a change of 3 dB or more to hear a noticeable change in the noise environment, therefore the change in noise level would be considered minimal. The architectural layout of the project site further reduces potential noise impacts.

7.1.3 East Property Line Stationary Noise Impact

Table 9 indicates the projected stationary noise impact to the residential units east of the project site. The residential units to the east will experience a reduction in traffic noise (from Harbor Boulevard) and an increase in noise from the parking structure. The overall noise level is expected to increase by approximately 0.2 to 3.6 dBA during daytime (7AM -10PM) hours over the existing condition (depending on the L(%) noise criteria examined). The impact would be considered not significant because it is not exceeding the City's noise criteria. It is possible that intermittent noise from horns, cars, and engine idling could be heard at these residential units. Therefore, it is recommended that properly designed and placed parapet walls be applied to the exposed areas of the parking structure where noise sensitive areas exist. It takes a change of 3 dB to hear a noticeable difference.

7.1.4 South Property Line Stationary Noise Impact

Table 10 indicates the projected stationary noise impact to the southern property line. The land use to the south is zoned residential/commercial. The noise levels were projected to the south property line for reference purposes. An increase in noise from the parking structure will occur along the eastern and southern area of the project site. The hotel towers and parking structure will provide shielding from traffic and other stationary noise sources located on the project site. The overall noise level is expected to increase by approximately 0.9 to 2.5 dBA during daytime (7AM -10PM) hours over the existing condition (depending on the L(%) noise criteria examined. As previously noted it takes a change of 3 dB to hear a noticeable difference.

Loading/Unloading Area Noise

Noise associated with the loading/unloading of trucks is expected to occur near the southern property line. The five-story parking structure and the hotel towers will partially shield noise levels propagating from the area to the adjacent residential areas. An 8 foot shielding wall is recommended along the eastern property line where the noise levels are not obstructed by a structure, as indicated in Exhibit E. It is recommended that loading/unloading activities be limited to the hours of 7:00 AM – 10:00 PM.

Condenser Unit Noise

Noise associated with condenser equipment is expected to be enclosed or on top of the hotel towers. It is recommended that any condenser units not enclosed be shielded by parapet walls with a height equal or greater than the height of the unit itself. Condenser unit noise is not expected to impact the adjacent residential areas.

Parking Structure Noise

Noise levels associated with the parking structure includes will vary depending on the time of year, the time of day, and the number of parking stalls and number of vehicles. Noise levels will be highest during AM/PM peak hours. The noise level from the parking structure was projected to the adjacent properties. The final result demonstrates that noise levels will not exceed the City's noise criteria.

7.2 Future Interior Noise

Using typical commercial building construction reduction levels, the future interior noise level were calculated. Table 6 indicates the projected interior noise level for hotel and the restaurant. The hotel will require a CNEL noise reduction of approximately 19.1 dBA CNEL, requiring a "windows closed" condition, and commercially glazed glass with an STC value of 25 or greater. The restaurant pad will require a CNEL noise reduction of 19.1 dBA with an STC value of 25 or greater. A "windows closed" condition requires a means of mechanical ventilation per the Unified Building Code. The windows closed condition will be sufficient to meet the 45 dBA CNEL interior noise standard set-forth by the City.

8.0 Construction Noise Impacts

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. It is estimated that construction will take approximately two (2) years. Grading is expected to last approximately 1-3 months; building will take approximately 20 to 26 months. Noise levels associated with the construction will vary with the different phases of construction.

Construction noise is expected to be the worse during the grading and concrete phases of construction.

The following is a list of heavy construction equipment which will be utilized during grading: two (2) dozers, six (6) scrapers, one (1) front-end loader, two (2) graders, and one (1) water truck.

The following is a list of heavy construction equipment which will be utilized during building (concrete phase): four (4) backhoes, two (2) loaders, three (3) generators, 1 to 15 delivery trucks per day, and 1 to 20 concrete trucks deliveries per day.

The Environmental Protection Agency (EPA) has compiled data regarding the noise generated characteristics of typical construction activities. The data is presented in Table 13. These noise levels would diminish rapidly with distance from the construction site at a rate of 6 dBA per doubling of distance. For example a noise level of 86 dBA measured 50 feet from the noise source would reduce to 80 dBA at 100 feet. At 200 feet from the noise source the noise level would reduce to 74 dBA. At 400 feet the noise source would reduce by another 6 dBA to 68 dBA. During the construction period, the contractors would be required to comply with the Municipal Code of the City of Garden Grove as described in Appendix A.

There are two noise sensitive areas adjacent to the project site. According to the City's Municipal Code, construction activities must occur during (7AM – 10PM). Construction noise will be audible at the adjacent residential areas however noise reduction measures have been recommended to reduce the construction noise impacts. These include, but are not limited to equipment be equipped with appropriate noise attenuating devices, idling equipment kept to a minimum of five minutes or less and should be turned off when not in use, and ensure equipment is well maintained to reduce banging and rattling.

The project is not expected to generate a vibration impact to the surrounding area. Per the estimated construction equipment usage list, there is no heavy pile driving or other vibration impacting equipment being used.

9.0 Conclusions

RK has completed an acoustical analysis of the Site "C" Hotel and Restaurant project, located in the City of Garden Grove. The project was assessed with respect to on and off-site generated noise impacts. The noise study indicates that stationary noise (truck deliveries loading/unloading and the parking structure) would be the main source of on-site noise impacting the adjacent properties. The noise study indicates that traffic noise from Harbor Boulevard and Twintree Lane will be the main source of off-site noise impacting the project. Refer to *Summary of Mitigation Requirements* and Exhibits E.

The following conclusions for the Site "C" Hotel and Restaurant project are listed below:

- The measured short-term ambient noise levels near the project site are indicated in Table 1.
- The roadway noise impacts to the project site are indicated in Table 2 through 5. The site plan layout of the structures, building design and specific height/distances will provide additional shielding from roadway noise. The projected interior noise levels for the project site are indicated in Table 6.
- The stationary noise impacts to the surrounding area are indicated in Tables 9 and 10.
- Construction noise impacts are indicated in Table 12. The noise levels associated with construction are expected to be short-term and temporary. Construction noise levels are not expected to be significant.

The project is consistent with the analysis and designed presented in the subject study and will comply with applicable City of Garden Grove requirements for control of community impacts to residential uses.

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Exhibits

Exhibit A Location Map

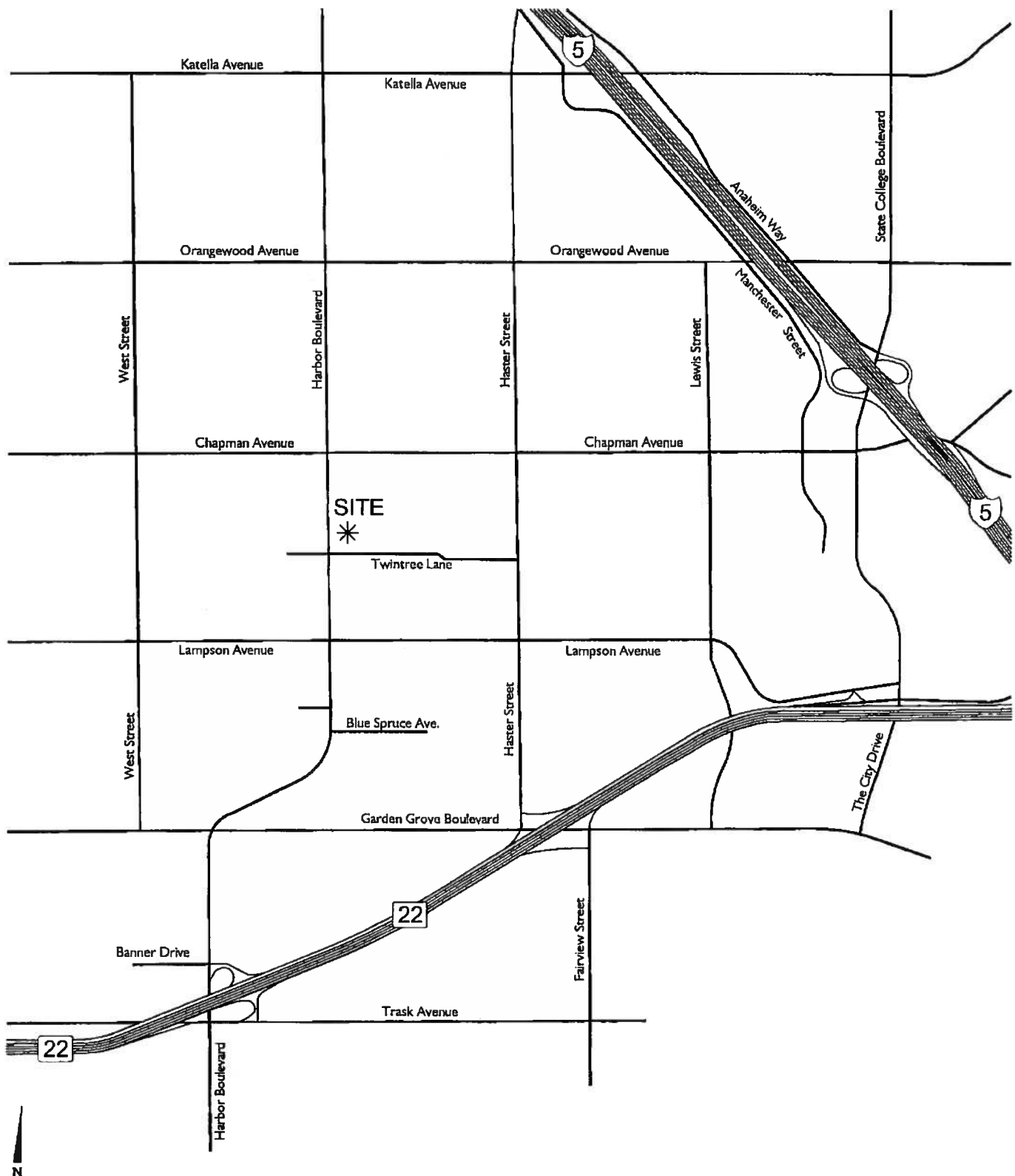
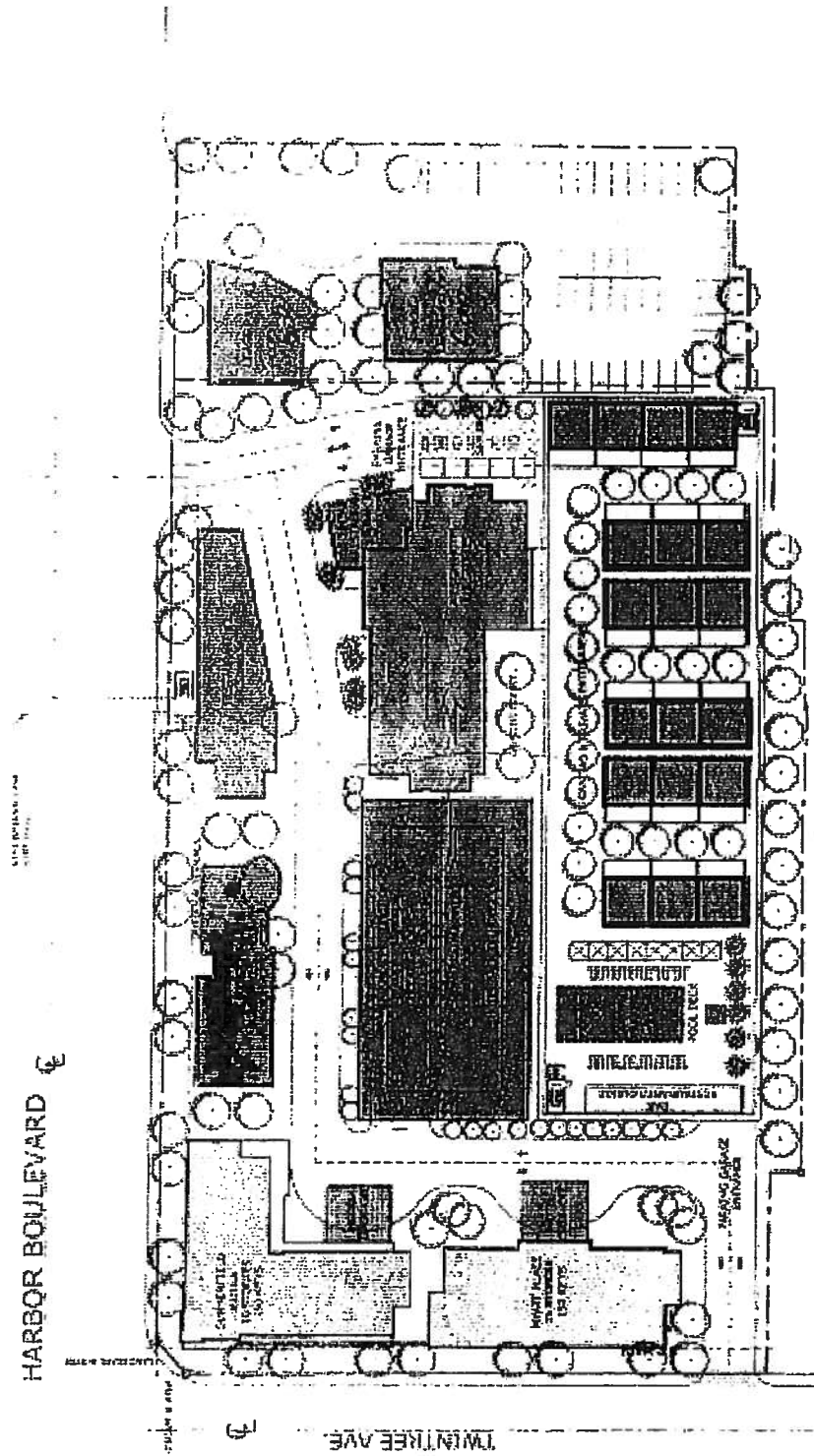


Exhibit B
Site Plan



0762-11-02 (ExB)

SITE "C" HOTEL AND RESTAURANT ACOUSTICAL STUDY, City of Garden Grove, California

Exhibit C
Noise Monitoring Locations



Legend:

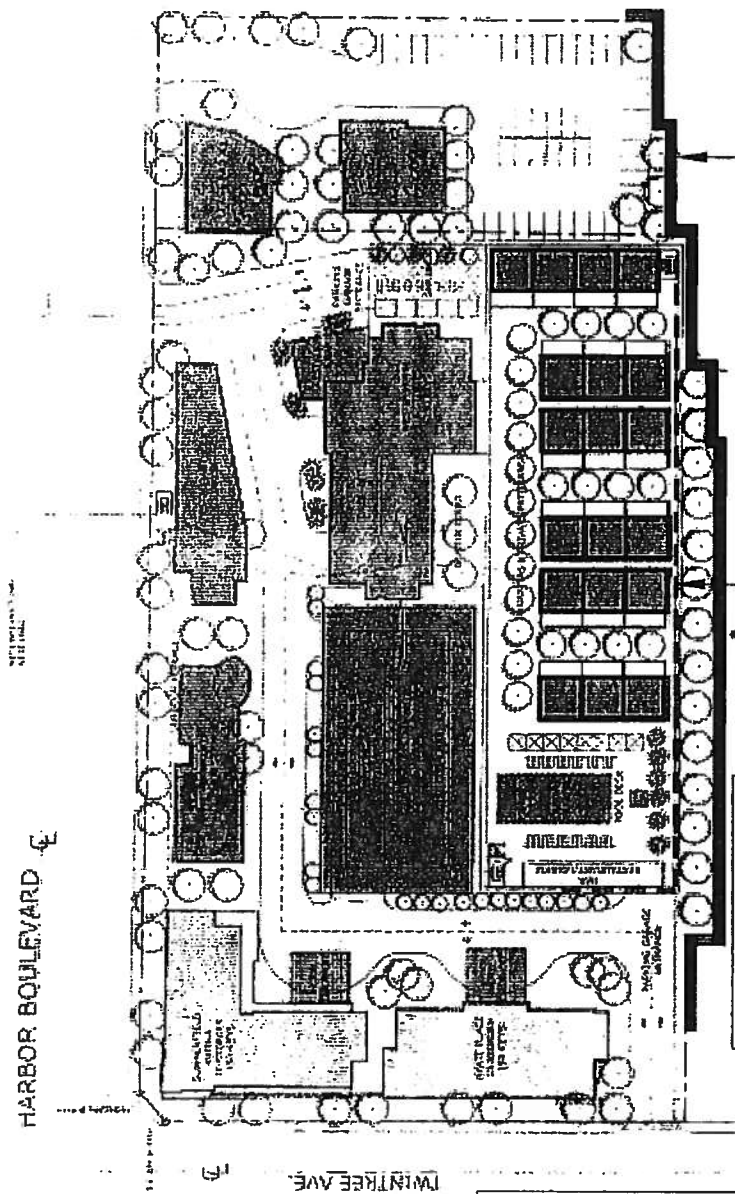
① = Noise Monitoring Location



Exhibit D Recommendations

Delivery Truck operations and loading dock activities should be limited to daytime hours between 7:00 AM to 10:00 PM.

Idling trucks should be limited to five minutes in length.



An 8 foot shielding wall is recommended along the east property lines.

It is recommended that the parking structure have 4 foot shielding walls for each floor that faces the residential units to the east.

Any trash compactor or pool equipment should be shielded by a parapet wall, or fully enclosed. The mechanical equipment should be placed at distance furthest from the nearest residential dwelling units. The height of the walls should be at least as high or higher than the mechanical equipment.

- Legend:**
- = 8 foot Shielding Wall
 - - = 4 foot Shielding Wall
 - ■ ■ ■ = 5 foot Shielding wall for Outdoor Seating Area

- Construction Noise Reduction Measures**
1. Construction operations must not occur during the hours of 10 PM to 7 AM.
 2. During construction, the contractor should ensure all construction equipment is equipped with appropriate noise attenuating devices.
 3. Idling equipment should be kept to a minimum of 5 minutes or less and should be turned off when not in use.
 4. Equipment will be maintained so that parts of vehicles and their loads are secured from rattling and banging.

Tables

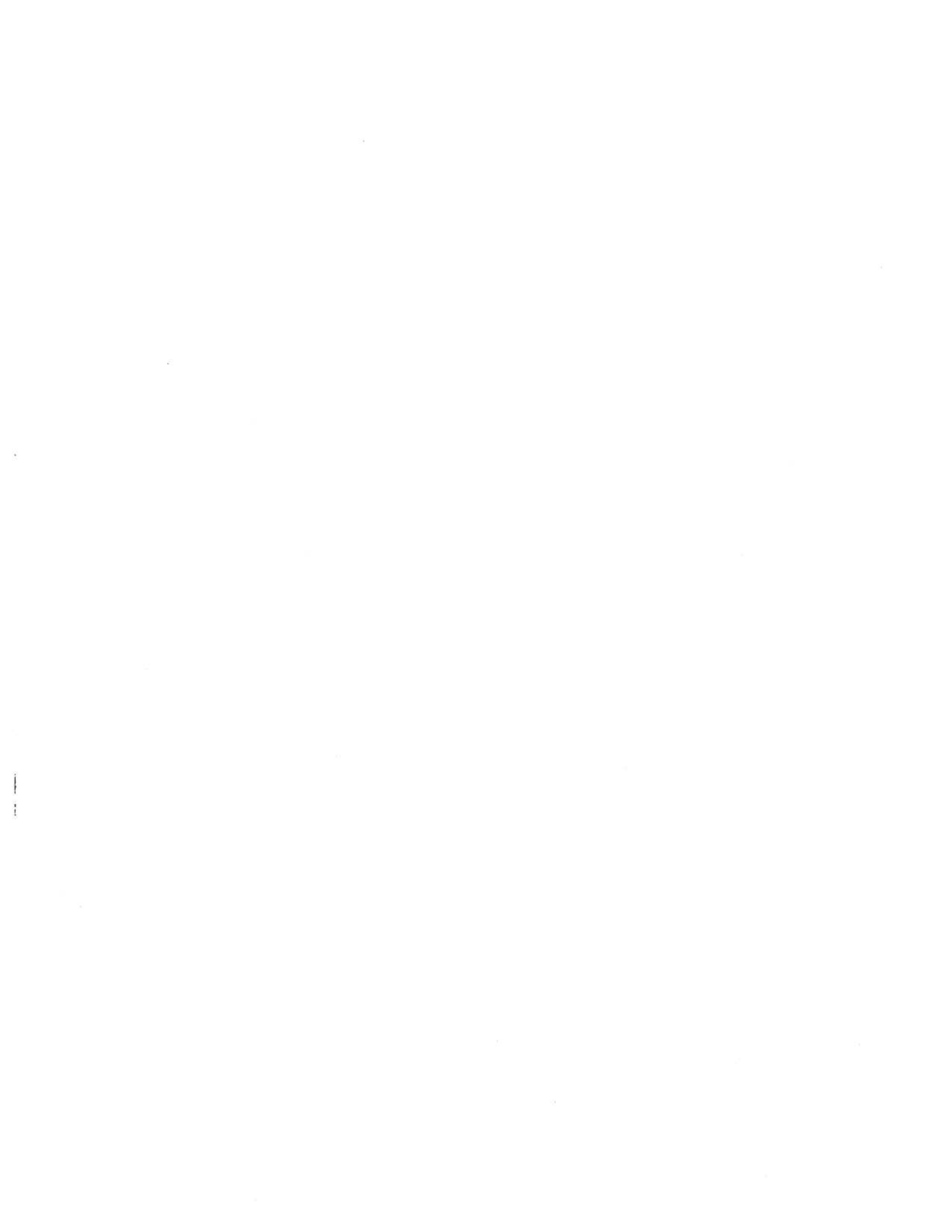


TABLE 1
Noise Level Measurements

		Measured Noise Level (dBA)								
	Site No.	Time Started ¹	Leq	L _{max}	L _{min}	L ₂	L ₈	L ₂₅	L ₅₀	Comments
Daytime	1	10:16 AM	56.7	70.0	42.0	64.8	61.3	57.2	53.0	Measurement taken 40ft from centerline of Twintree, at 12531 Twintree Ln. ambient noise = local traffic
	2	10:31 AM	58.2	75.0	40.0	66.6	63.6	59.2	49.7	Measurement taken at the end of the culdesac, 12233 Choisser Rd. - ambient noise = local traffic and typical residential noise
	3	10:45 AM	54.7	80.1	41.9	60.2	50.7	47.3	45.6	Measurement taken in front yard of 12292 Choisser Rd. ambient noise = local traffic and typical residential noise
	4	11:08 AM	49.4	74.9	42.0	54.8	53.0	49.6	47.6	Measurement taken in RV park (project site), 10ft from existing 6ft property line wall. Ambient noise = typical residential noise and local traffic
Nighttime	1	10:42 PM	50.2	64.0	42.8	63.0	56.7	52.3	49.2	Measurement taken 40ft from centerline of Twintree, at 12531 Twintree Ln. ambient noise = local traffic
	2	10:55 PM	47.9	63.4	43.1	55.4	51.0	47.7	46.2	Measurement taken at the end of the culdesac, 12233 Choisser Rd. - ambient noise = local traffic and typical residential noise
	3	11:08 PM	52.4	67.2	44.9	58.1	54.7	52.2	48.9	Measurement taken in front yard of 12292 Choisser Rd. ambient noise = local traffic and typical residential noise
	4	11:20 PM	45.4	62.8	41.1	52.4	49.6	48.1	44.5	Measurement taken in RV park (project site), 10ft from existing 6ft property line wall. Ambient noise = typical residential noise and local traffic

¹ Noise measurements were taken for ten minutes.

² Noise measurements were taken on April 27, 2011.

TABLE 2
Existing Exterior Noise Levels Along Roadways (dBA CNEL)¹

Roadway ²	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) ³			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Harbor Boulevard	n/o S.R. 22 Freeway	68.1	61	131	282	608
Harbor Boulevard	n/o Garden Grove Blvd.	67.2	55	118	254	547
Harbor Boulevard	n/o Lampson Ave	66.7	50	107	230	495
Harbor Boulevard	n/o Twintree Ln	67.1	53	113	244	526
Harbor Boulevard	n/o Chapman Ave	67.3	54	116	249	537
Twintree Lane	e/o Harbor Blvd	49.1	3	7	16	34

¹ Exterior noise levels calculated at 5 feet above ground level.

² Noise levels calculated from centerline of subject roadway.

³ Refer to Appendix D for projected noise level calculations.

TABLE 3
2014 Without Project Exterior Noise Levels Along Roadways (dBA CNEL)¹

Roadway ²	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) ³			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Harbor Boulevard	n/o S.R. 22 Freeway	68.3	63	136	292	630
Harbor Boulevard	n/o Garden Grove Blvd.	67.6	57	123	265	572
Harbor Boulevard	n/o Lampson Ave	67.1	52	112	242	522
Harbor Boulevard	n/o Twintree Ln	67.4	55	119	256	553
Harbor Boulevard	n/o Chapman Ave	67.5	56	121	260	560
Twintree Lane	e/o Harbor Blvd	49.3	4	8	16	35

¹ Exterior noise levels calculated at 5 feet above ground level.

² Noise levels calculated from centerline of subject roadway.

³ Refer to Appendix D for projected noise level calculations.

TABLE 4
2014 With Project Exterior Noise Levels Along Roadways (dBA CNEL)¹

Roadway ²	Segment	CNEL at 100 Ft (dBA)	Distance to Contour (Ft) ³			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Harbor Boulevard	n/o S.R. 22 Freeway	68.6	66	141	304	656
Harbor Boulevard	n/o Garden Grove Blvd.	67.9	60	130	281	605
Harbor Boulevard	n/o Lampson Ave	67.6	56	121	262	563
Harbor Boulevard	n/o Twintree Ln	67.8	59	127	274	591
Harbor Boulevard	n/o Chapman Ave	67.9	59	128	275	593
Twintree Lane	e/o Harbor Blvd	51.8	5	11	24	51

¹ Exterior noise levels calculated at 5 feet above ground level.

² Noise levels calculated from centerline of subject roadway.

³ Refer to Appendix D for projected noise level calculations.

TABLE 5
2014 Project Noise Contribution Noise Levels (dBA CNEL)

Roadway	Segment	CNEL at 100 Feet dBA			
		Without Project	With Project	Project Contribution	Potential Significant Impact ¹
Harbor Boulevard	n/o S.R. 22 Freeway	68.3	68.6	0.3	NO
Harbor Boulevard	n/o Garden Grove Blvd.	67.6	67.9	0.3	NO
Harbor Boulevard	n/o Lampson Ave	67.1	67.6	0.5	NO
Harbor Boulevard	n/o Twintree Ln	67.4	67.8	0.4	NO
Harbor Boulevard	n/o Chapman Ave	67.5	67.9	0.4	NO
Twintree Lane	e/o Harbor Blvd	49.3	51.8	2.5	NO

¹ A potential significant impact occurs when the noise levels from the project causes an increase in noise of 5 dBA or more.

² Impact is not considered significant because Roadway CNEL remains below 65 dBA in backyards of residential units

TABLE 6
Future Interior Noise Impacts (dBA CNEL)

Receiver Location	Noise Impacts at First Floor Building Façade	Interior Noise Reduction Required to Meet Interior Noise Standard of 45 dBA CNEL ¹	First Floor Interior Noise Level w/Standard California Construction Windows (STC ≥ 25) ²		STC Rating for Windows Facing Subject Roadway ³
			"Windows Open" ³	"Windows Closed" ⁴	
First Floor	64.9	19.9	52.9	42.9	25
Second Floor	68.4	23.4	56.4	46.4	25
Third Floor	68.4	23.4	56.4	46.4	25
Fourth Floor	68.4	23.4	56.4	46.4	25
Fifth Floor	68.3	23.3	56.3	46.3	25
Sixth Floor	68.2	23.2	56.2	46.2	25
Seventh Floor	68.1	23.1	56.1	46.1	25
Eighth Floor	68.0	23.0	56.0	46.0	25
Ninth Floor	67.9	22.9	55.9	45.9	25
Tenth Floor	67.7	22.7	55.7	45.7	25

¹ Indicated noise level includes noise attenuation provided by noise barrier, if applicable.

² Room with the least calculated noise attenuation shown (worst-case), since multiple rooms were analyzed.

³ A minimum of 12 dBA noise reduction is assumed with the "windows open" condition.

⁴ A minimum of 20 dBA noise reduction is assumed with the "windows closed" condition.

TABLE 7
Roadway Parameters and Vehicle Distribution

Roadway	Classification	Lanes	Buildout (ADT)	Speed (MPH)	Site Conditions
Harbor Boulevard	Major Arterial	6	39,300	45	Soft/Hard
Twintree Lane	Collector	2	3,700	25	Soft

Vehicle Distribution (Truck Mix)²

Motor-Vehicle Type	Daytime % (7 AM to 7 PM)	Evening % (7 PM to 10 PM)	Night % (10 PM to 7 AM)	Total % of Traffic Flow
Automobiles	75.5	12.9	9.6	97.42
Medium Trucks	84.8	4.9	10.3	1.84
Heavy Trucks	86.5	2.7	10.8	0.74

¹ Vehicle percentages utilized from Orange County Traffic Data

TABLE 8

Reference and Adjusted Stationary Noise Level Measurements

Source	Referenced Measured Noise Levels (dBA)						
	Distance from Reference Source (feet)	L _{eq}	L _{max}	L ₂	L ₈	L ₂₅	L ₅₀
Loading Dock ¹	6.0	66.3	84.0	78.5	68.0	61.5	58.5
Parking Structure ¹	10.0	59.0	70.9	64.4	61.9	59.8	57.6
Outdoor Pool Area ¹	10.0	62.1	71.7	66.6	64.8	62.6	61.4

	Source ²	Distance from Reference Source (feet)	Adjusted Noise Levels (dBA) ¹					
			L _{eq}	L _{max}	L ₂	L ₈	L ₂₅	L ₅₀
East Property Line	Loading Dock	51	37.6	55.3	49.8	39.3	32.8	29.8
	Parking Structure	185	46.3	58.2	51.7	49.2	47.1	44.9
	Outdoor Pool Area	87	23.3	32.9	27.8	26.0	23.8	22.6

	Source ²	Distance from Reference Source (feet)	Adjusted Noise Levels (dBA) ¹					
			L _{eq}	L _{max}	L ₂	L ₈	L ₂₅	L ₅₀
South Property Line	Loading Dock	150	38.3	56.0	50.5	40.0	33.5	30.5
	Parking Structure	200	42.7	54.6	48.1	45.6	43.5	41.3
	Outdoor Pool Area	32	16.1	25.7	20.6	18.8	16.6	15.4

¹ Reference noise levels as measured by RK Engineering Group

² Adjusted Noise Levels (dBA) were calculated based on distance and barrier location of site design (Appendix F).

TABLE 9

Projected Exterior East Property Line Stationary Noise Levels (dBA)^{1,2}

	Source	Adjusted Noise Levels (dBA)						
		Distance from Reference Source (feet)	L _{eq}	L _{max} (max)	L ₂ (1 min)	L ₅ (5 min)	L ₂₅ (15 min)	L ₅₀ (30 min)
DAYTIME (7AM - 10PM)	Loading Docks ³	51	37.6	55.3	49.8	39.3	32.8	29.8
	Parking Structure ³	185	46.3	58.2	51.7	49.2	47.1	44.9
	Outdoor Pool Area ³	87	23.3	32.9	27.8	26.0	23.8	22.6
	Existing Ambient Measurement ⁴	--	49.4	74.9	54.8	53.0	49.6	47.6
	Total Combined Exterior Noise Impact ⁵	--	51.3	75.0	57.4	54.6	51.6	49.5
	City of Garden Grove Not to Exceed Noise Criteria	--	N/A	75.0	70.0	65.0	60.0	55.0
	Noise Level Exceeds Standard (?)	--	N/A	NO	NO	NO	NO	NO
	Change in Noise Level as a Result of Project	--	1.9	0.1	2.6	1.6	2.0	1.9
	Source	Adjusted Noise Levels (dBA)						
		Distance from Reference Source (feet)	L _{eq}	L _{max} (max)	L ₂ (1 min)	L ₅ (5 min)	L ₂₅ (15 min)	L ₅₀ (30 min)
NIGHTTIME (10PM - 7AM)	Loading Docks ³	51	37.6	55.3	49.8	39.3	32.8	29.8
	Parking Structure ³	185	46.3	58.2	51.7	49.2	47.1	44.9
	Outdoor Pool Area ³	87	23.3	32.9	27.8	26	23.8	22.6
	Existing Ambient Measurement ⁴	--	45.4	62.8	52.4	49.6	48.1	44.5
	Total Combined Exterior Noise Impact ⁵	--	49.2	64.6	56.2	52.6	50.7	47.8
	City of Garden Grove Not to Exceed Noise Criteria	--	N/A	70.0	65.0	60.0	55.0	50.0
	Noise Level Exceeds Standard (?)	--	N/A	NO	NO	NO	NO	YES
	Change in Noise Level as a Result of Project	--	3.8	1.8	3.8	3.0	2.6	3.1

¹ Exterior noise levels calculated 10 feet in from property line, perpendicular to subject roadway

² Noise level calculations represent projected exterior

³ See Appendix F for reference level to adjusted level conversion calculation printout

⁴ Ambient measurement taken from Table 1

⁵ See Appendix F for dBA calculations

TABLE 10

Projected Exterior South Property Line Stationary Noise Levels (dBA)^{1,2}

	Source	Adjusted Noise Levels (dBA)						
		Distance from Reference Source (feet)	L _{eq}	L _{max} (max)	L ₂ (1 min)	L _B (5 min)	L ₂₅ (15 min)	L ₅₀ (30 min)
DAYTIME (7AM - 10PM)	Loading Docks ³	150	38.3	56.0	50.5	40.0	33.5	30.5
	Parking Structure ³	200	42.7	54.6	48.1	45.6	43.5	41.3
	Outdoor Pool Area ³	32	16.1	25.7	20.6	18.8	16.6	15.4
	Existing Ambient Measurement ⁴	--	56.7	70.0	64.8	61.3	57.2	53.0
	Total Combined Exterior Noise Impact ⁵	--	56.9	70.3	65.0	61.4	57.4	53.3
	City of Garden Grove Not to Exceed Noise Criteria	--	N/A	75.0	70.0	65.0	60.0	55.0
	Noise Level Exceeds Standard (?)	--	N/A	NO	NO	NO	NO	NO
	Change in Noise Level as a Result of Project	--	0.2	0.3	0.2	0.1	0.2	2

	Source	Adjusted Noise Levels (dBA)						
		Distance from Reference Source (feet)	L _{eq}	L _{max} (max)	L ₂ (1 min)	L _B (5 min)	L ₂₅ (15 min)	L ₅₀ (30 min)
NIGHTTIME (10PM - 7AM)	Loading Docks ³	150	38.3	56.0	50.5	40.0	33.5	30.5
	Parking Structure ³	200	42.7	54.6	48.1	45.6	43.5	41.3
	Outdoor Pool Area ³	32	16.1	25.7	20.6	18.8	16.6	15.4
	Existing Ambient Measurement ⁴	--	50.2	64.0	63.0	56.7	52.3	49.2
	Total Combined Exterior Noise Impact ⁵	--	51.1	65.0	63.4	57.1	52.9	49.9
	City of Garden Grove Not to Exceed Noise Criteria	--	N/A	70.0	65.0	60.0	55.0	50.0
	Noise Level Exceeds Standard (?)	--	N/A	NO	NO	NO	NO	NO
	Change in Noise Level as a Result of Project	--	0.9	1.0	0.4	0.4	0.6	0.7

¹ Exterior noise levels calculated 10 feet in from property line, perpendicular to subject roadway

² Noise level calculations represent projected exterior

³ See Appendix F for reference level to adjusted level conversion calculation printout

⁴ Ambient measurement taken from Table 1

⁵ See Appendix F for dBA calculations

TABLE 11
Typical Construction Noise Levels¹

EQUIPMENT POWERED BY INTERNAL COMBUSTION ENGINES	
Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86

IMPACT EQUIPMENT	
Type	Noise Levels (dBA) at 50 Feet
Pneumatic Wrenches	82 - 87
Jack Hammers, Rock Drills	80 - 99
Pile Drivers (Peak)	95-105

OTHER	
Type	Noise Levels (dBA) at 50 Feet
Vibrators	68 - 82
Saws	71 - 82

¹ Referenced Noise Levels from the Environmental Protection Agency (EPA)

**TABLE 12
Project Construction Related Noise Levels (dBA)**

Receiver	Equipment	Distance to Property Line	Leq	Lmax ¹
South Property Line	Dozer	50	71.7	75.7
	Dozer	50	71.7	75.7
	Excavator	50	70.7	74.7
	Scraper	50	73.6	77.6
	Tractor	50	80.0	84.0
Total Combined Noise Level		--	82.2	84.0

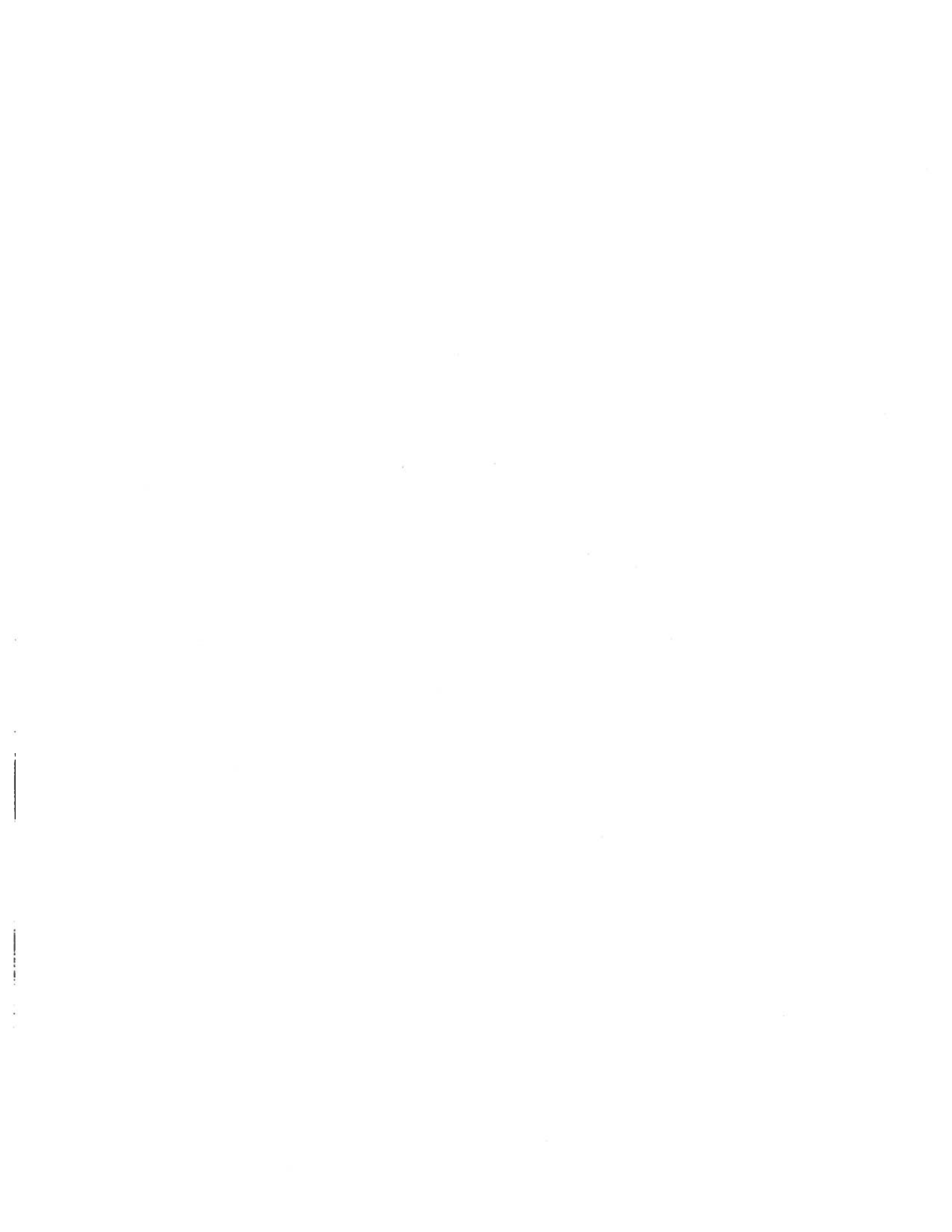
Receiver	Equipment	Distance to Property Line	Leq	Lmax ¹
East Property Line	Dozer	40	71.6	75.6
	Dozer	40	71.6	75.6
	Excavator	40	70.7	74.6
	Scraper	40	73.5	77.5
	Tractor	40	74.0	77.9
Total Combined Noise Level		--	77.9	79.5

¹ Lmax maximum noise level only reviews loudest piece of equipment

Appendices

Appendix A

City of Garden Grove
Acoustical Parameters



CHAPTER 47: NOISE CONTROL*

* Prior history: Ord. 1949, 1950, 2258.

SECTION 8.47.020: Definitions

The following words, phrases, and terms as used in this chapter shall have the meaning as indicated below:

"Actual Measured Ambient Noise Level" shall mean that noise level existing in the general area of the noise problem excluding the noise generated by the noise source being evaluated.

"Ambient Base Noise Level" shall mean the maximum loudness level normally found to be acceptable for given land uses and which serves as the basis for determining loudness noise violations pursuant to the provisions of Section 8.48.040 of this Chapter.

"Ambient Noise Level" shall mean the all-encompassing background noise associated with a given environment, being usually a composite of sounds from many sources near and far.

"Commercial Use" shall mean any enterprise whose principal endeavor is the sale of goods and/or services.

"Decibel (dB)" shall mean a unit which denotes the ratio between two (2) quantities which are proportional to power: the number of decibels corresponding to the ratio of two (2) amounts of power is ten (10) times the logarithm to the base ten (10) of this ratio. The commonly used unit for measuring sound pressure levels.

"Emergency" means operations made necessary to restore property to a safe condition following a public calamity or work required to protect persons or property from an imminent exposure to danger or work by private or public utilities when restoring utility service.

"Industrial Use" means any facility or operations involved in the manufacturing, repairing, testing processing, warehousing, wholesaling, researching and treatment of products.

"Institutional Use" means an establishment maintained and operated by a society, church, corporation, individual, foundation or public agency for the purpose of providing religious, charitable, social, educational, fraternal or similar services.

"Noise" means any sound which exceeds the appropriate actual or presumed ambient noise level or which annoys or tends to disturb humans or which causes or tends to cause an adverse psychological or physiological effect on humans of normal sensitiveness.

"Office-Professional Use" means any enterprise engaged in providing business or professional services.

"Residential Use" means any structure utilized principally for human habitation; excluding hotels, motels, and recreational vehicle parks.

"Sound Amplifying Equipment" means any device for the amplification of the human voice, music, or any other sound and does not include standard automobile radios when used and heard only by the occupants of the vehicle in which the automobile radio is installed or devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.

"Sound Level" in decibels (dB)" means the sound measured utilizing the A-weighting scale and the slow needle response by a sound level meter.

"Sound level meter" means an instrument meeting American National Standard Institutes Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an equivalent standard.

(Ord. 2660 § 2, 2005).

SECTION 8.47.030: Noise level measurement

All noise level measurements made pursuant to the provisions of this Chapter shall be performed using a sound level meter as defined in Section 2; using a fast needle response; utilizing the dB(A) scale.

(Ord. 2660 § 2, 2005).

SECTION 8.47.040: Ambient base noise levels

The ambient base noise levels contained in the following chart shall be utilized as the basis for determining noise levels in excess of those allowed by this Chapter unless the actual measured ambient noise level occurring at the same time as the noise under review is being investigated exceeds the ambient base noise level contained in the chart. When the actual measured ambient noise level exceeds the ambient base noise level, the actual measured ambient noise level shall be utilized as the basis for determining whether or not the subject noise exceeds the level allowed by this Section. In situations where two adjoining properties exist within two different use designations, the most restrictive ambient base noise level will apply. This Section permits any noise level which does not exceed either the ambient base noise level or the actual measured ambient noise level by 5 dB(A), as measured at the property line of the noise generation property.

Use Category	Use Designation	Ambient Base Noise Level	Time of Day
Sensitive	Residential Use	55 dB(A)	7:00 a.m.- 10:00 p.m.

		50 dB(A)	10:00 p.m.- 7:00 a.m.
Conditionally Sensitive	Institutional Use	65 dB(A)	Any Time
	Office-Professional Use	65 dB(A)	Any Time
	Hotels and Motels	65 dB(A)	Any Time
Non-Sensitive	Commercial Uses	70 dB(A)	Any Time
	Commercial/ Industrial Uses w/in 150 feet of Residential	65 dB(A)	7:00 a.m.- 10:00 p.m.
		50 dB(A)	10:00 p.m.- 7:00 a.m.
	Industrial Use	70 dB(A)	Any Time

(Ord. 2660 § 2, 2005).

SECTION 8.47.050: General noise regulation

- a. Noise Disturbance Criteria. It shall be unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise, which disturbs the peace, or quiet of any neighborhood or which causes discomfort or annoyance to any person of normal sensitiveness.

The criteria, which shall be utilized in determining whether a violation of the provisions of this section exists, shall include, but not be limited to, the following:

1. The level of the noise;
 2. The frequency of occurrence of the noise;
 3. Whether the nature of the noise is usual or unusual;
 4. The level and intensity of the background noise, if any;
 5. The proximity of the noise to residential sleeping facilities;
 6. The nature and zoning of the area within which the noise emanates;
 7. The density of the inhabitation of the area within which the noise is received;
 8. The time of day or night the noise occurs;
 9. The duration of the noise.
- b. Duration of noise. The following criteria shall be used whenever the noise level exceeds:
1. The noise standard for a cumulative period of more than thirty (30) minutes in any hour; or
 2. The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or
 3. The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or
 4. The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or

5. The noise standard plus twenty (20) dB(A) for any period of time
- c. In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth (5th) noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

(Ord. 2660 § 2, 2005).

SECTION 8.47.060: Special noise sources

- a. Radios, Television Sets, and Similar Devices.
 1. Use Restricted. It shall be unlawful for any person within any residential area of the city to use or operate any radio receiving set, musical instrument, stereo equipment, television set, or other machine or device for the producing or reproducing of sound between the hours of 10:00 p.m. of one day and 7:00 a.m. of the following day in such a manner as to disturb the peace, quiet, and comfort of any person of normal sensitiveness residing in the area, as determined utilizing the criteria established in Section 8.04.050(a).
 2. Prima Facie Violation. Any noise level exceeding the ambient base level at the property line of any property (or, if a condominium or apartment house, within any adjoining apartment) by more than five (5) decibels shall be deemed to be prima facie evidence of a violation of the provisions of this section.
- b. Musical Instruments. Use Restricted. It shall be unlawful for any person to use any drum or other instrument or device of any kind for the purpose of attracting attention by the creation of noise within the city. This section shall not apply to any person who is a participant in a duly licensed parade or who has been otherwise duly authorized to engage in such conduct.
- c. Machinery, Equipment, Fans, and Air Conditioning. It shall be unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed either the ambient base noise level or the actual measured ambient noise level by more than five decibels.
- d. Construction of Buildings and Projects. It shall be unlawful for any person within a residential area, or within a radius of 500 feet there from, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects, or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day in such a manner that a person of normal sensitiveness, as determined utilizing the criteria established in Section 8.47.050(a), is caused discomfort or annoyance unless such operations are of an emergency nature.

- e. **Vehicle Repairs.** It shall be unlawful for any person within any residential area of the City to repair, rebuild, or test any motor vehicle in such a manner that a person of normal sensitiveness residing in the area is caused discomfort or annoyance, as determined utilizing the criteria established in Section 8.47.050(a), unless such operations are of an emergency nature.
- f. **Motor Driven Vehicles.** It shall be unlawful for any person to operate any motor driven vehicle within the City in such a manner that a person of normal sensitiveness residing in the area is caused discomfort or annoyance, as determined utilizing the criteria established in Section 8.47.050(a), unless such operations are of an emergency nature; provided, however, any such vehicle which is operated upon any public highway, street, or right-of-way shall be excluded from the provisions of this Section.
- g. **Amplified Sound.**
 - 1. **Purpose.** While recognizing the constitutional rights of freedom of speech and assembly, the City nevertheless feels obligated to reasonably regulate the use of sound amplifying equipment in order to protect the citizens of the City to privacy and freedom from excessively loud and unnecessary noise.
 - 2. **Registration.** It shall be unlawful for any person, other than personnel of law enforcement or governmental agencies, to install, use or operate within the City a loudspeaker or sound amplifying equipment mounted upon any vehicle for the purposes of warnings, giving instructions, directions, talks, addresses, lectures, or transmitting music to any persons or assemblages of persons, without first filing a registration statement at least seven (7) days prior to the date on which the sound amplifying equipment is intended to be used and obtaining approval.
 - 3. **Approval.** The Zoning Administrator shall return to the applicant an approved copy of the registration statement unless he/she finds that:
 - a. The conditions of the motor vehicle movement are such that use of the equipment would constitute a detriment to traffic safety; or
 - b. The conditions of pedestrian movement are such that use of the equipment would constitute a detriment to traffic safety.
 - 4. **Disapproval.** In the event the registration statement is disapproved, the Zoning Administrator shall endorse upon the statement his reason for disapproval and return it to the applicant.
 - 5. **Appeals.** Any decision by the Zoning Administrator may be appealed to the City Council within seven (7) days of action of the Zoning Administrator by filing a notice of appeal with the City Clerk.
- h. **Waste Haulers/Commercial Sweepers and Leaf Blowers**

It shall be unlawful for any person within any commercial, industrial or office complex area of the City to operate any refuse compacting, processing or collection vehicle, parking lot sweeper or leaf blower within 150 feet of residential property between the hours of 10:00 p.m. and 7:00 a.m. of the following day.

i. Loading/Unloading

It shall be unlawful for any person in any commercial or industrial area of the City that abuts or is located adjacent to any residential property between the hours of 10:00 p.m. and 7:00 a.m. of the following day to load or unload any vehicle, or operate any dollies, carts, forklifts or other wheeled equipment which causes any noise which disturbs the peace or quiet of the residential neighborhood.

(Ord. 2660 § 2, 2005).

SECTION 8.47.070: Exemptions

- a. Emergency Activities. The provisions of this Chapter shall not preclude the operation, maintenance and repair of equipment, apparatus, or facilities of essential public services, including those of governmental agencies and public utilities, providing those activities are of an emergency nature or are necessary to maintain the health, safety and welfare of the citizenry.
- b. Community Activities. Community Events, as describe in Section 9215.18 of the Municipal Code, outdoor gatherings, school bands, dances, shows and athletic events, are hereby exempted from the provisions of this Chapter provided such activities are conducted pursuant to a duly authorized license or permit.
- c. State and Federal Preemptions. Motor vehicle and aircraft operations and any other activity whose regulation has been preempted by State or Federal lay is hereby exempted from the provisions of this Chapter.

(Ord. 2660 § 2, 2005).

SECTION 8.47.080: Abatement

The Director of Community Development and his/her duly authorized representatives are hereby directed to enforce the provisions of this Chapter by requiring that the alleged offender correct violations and achieve compliance with the provisions of this Chapter within a reasonable period of time.

- a. The Department of Community Development Code Enforcement Officers, shall have the power and duty to enforce the following noise control provisions of this Code: Section 8.47.050, Section 8.47.060 (a)(2), (c), (h), and (i).
- b. The Police Department shall have the power and duty to enforce the following noise control provisions of this Code: Section 8.47.060 (a)(1), (b), (e), (f), (g)(1)(2).
- c. The Department of Community Development Building Services Division shall have the power and duty to enforce the following noise control provisions of this Code: Section 8.47.060(d).

(Ord. 2660 § 2, 2005).

Appendix B

Acoustical Terms

Appendix B

Glossary of Acoustical Terms

A-Weighted Sound Level

The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level

The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL)

The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB)

A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A)

A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ)

The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

Habitable Room

Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms and similar spaces.

L(n)

The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90 and L99, etc.

Noise

Any unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area

Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels

See L(n).

Sound Level (Noise Level)

The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

Sound Level Meter

An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL)

The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

Appendix C

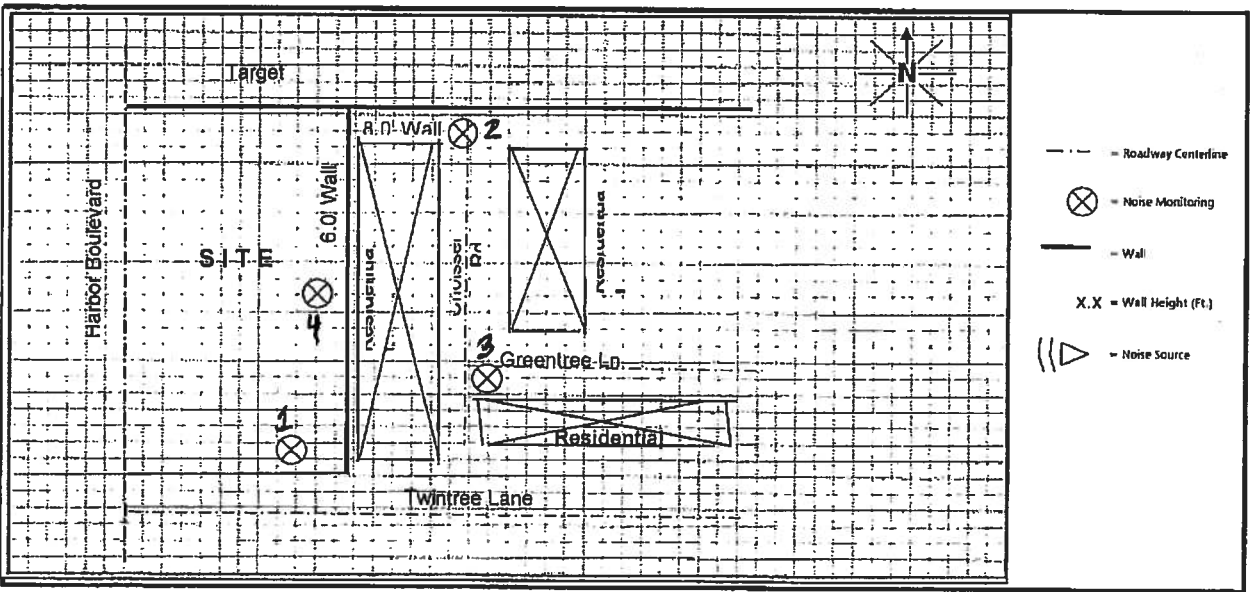
Photographs and
Field Measurements

Field Sheet

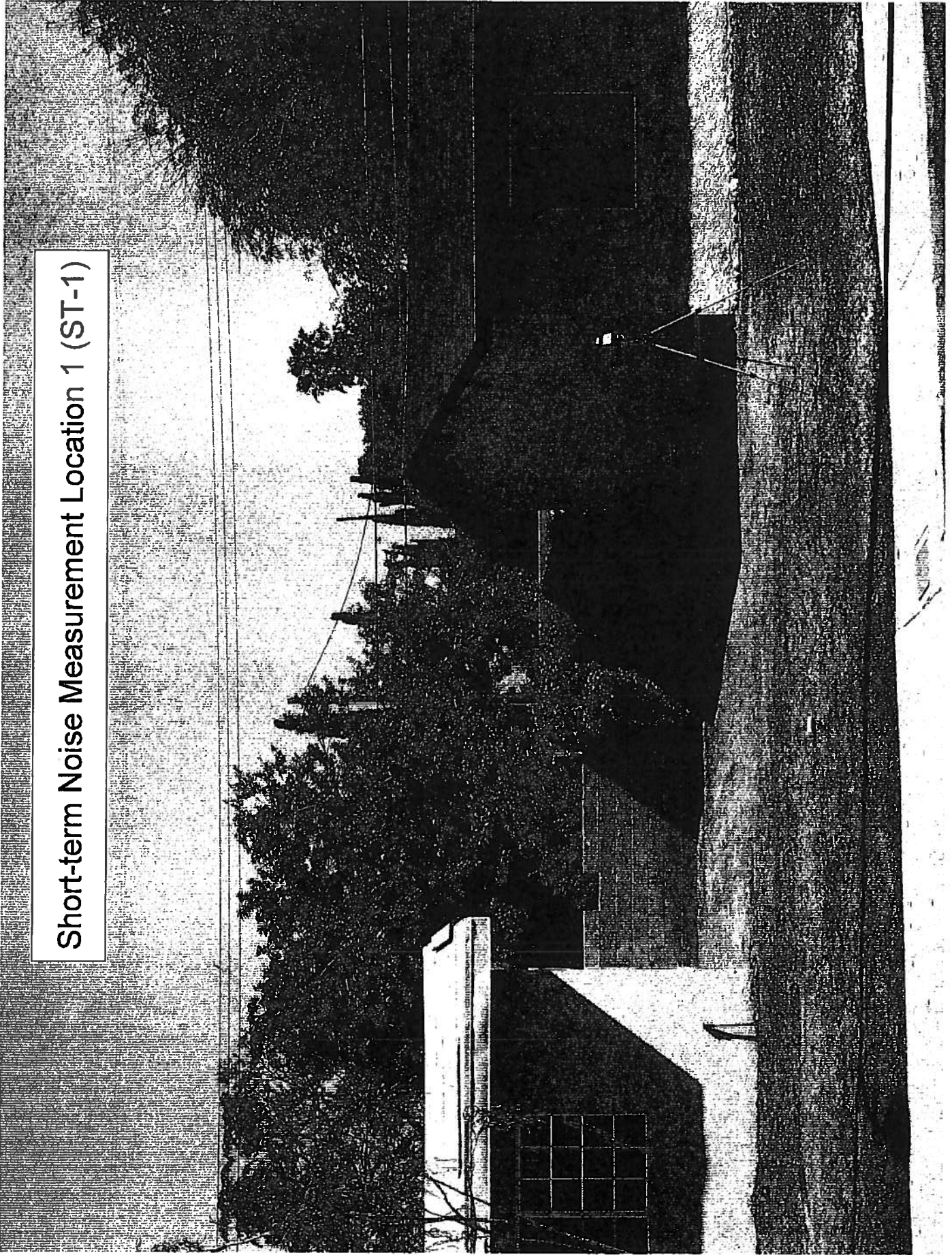
Project: Site "C" Hotel and Restaurant Project		Engineer: Bryan Estrada		Date: 4/27/2011																										
Measurement Address:			City: Garden Grove		JN: 0762-2011-02																									
					Site No.: 1-5																									
Sound Level Meter: LD-712 Serial # A0520		Calibration Record:		Notes:																										
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Input, dB/</th> <th>Reading, dB/</th> <th>Offset, dB/</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>Before</td> <td>114.0/</td> <td>113.7/</td> <td>26.9/</td> <td></td> </tr> <tr> <td>After</td> <td>114.0/</td> <td>114.0/</td> <td>26.3/</td> <td></td> </tr> <tr> <td>Before</td> <td>/</td> <td>/</td> <td>/</td> <td></td> </tr> <tr> <td>After</td> <td>/</td> <td>/</td> <td>/</td> <td></td> </tr> </tbody> </table>			Input, dB/	Reading, dB/	Offset, dB/	Time	Before	114.0/	113.7/	26.9/		After	114.0/	114.0/	26.3/		Before	/	/	/		After	/	/	/		Temp: 55	
	Input, dB/	Reading, dB/	Offset, dB/	Time																										
Before	114.0/	113.7/	26.9/																											
After	114.0/	114.0/	26.3/																											
Before	/	/	/																											
After	/	/	/																											
				Windspeed: --																										
				Direction: --																										
				Skies: Clear																										
				Camera:																										
				Photo Nos.																										
Calibrator: LD-250 250 Serial # 1322																														
Meter Settings:																														
<input checked="" type="checkbox"/> A-WTD <input type="checkbox"/> LINEAR <input checked="" type="checkbox"/> SLOW <input type="checkbox"/> 1/1 OCT <input checked="" type="checkbox"/> INTERVALS <u>10</u> - MINUTE <input type="checkbox"/> C-WTD <input type="checkbox"/> IMPULSE <input type="checkbox"/> FAST <input type="checkbox"/> 1/3 OCT <input checked="" type="checkbox"/> L _N PERCENTILE VALUES																														

Notes:	Measurement Type:
	Long-term _____
	Short-term <u> X </u>

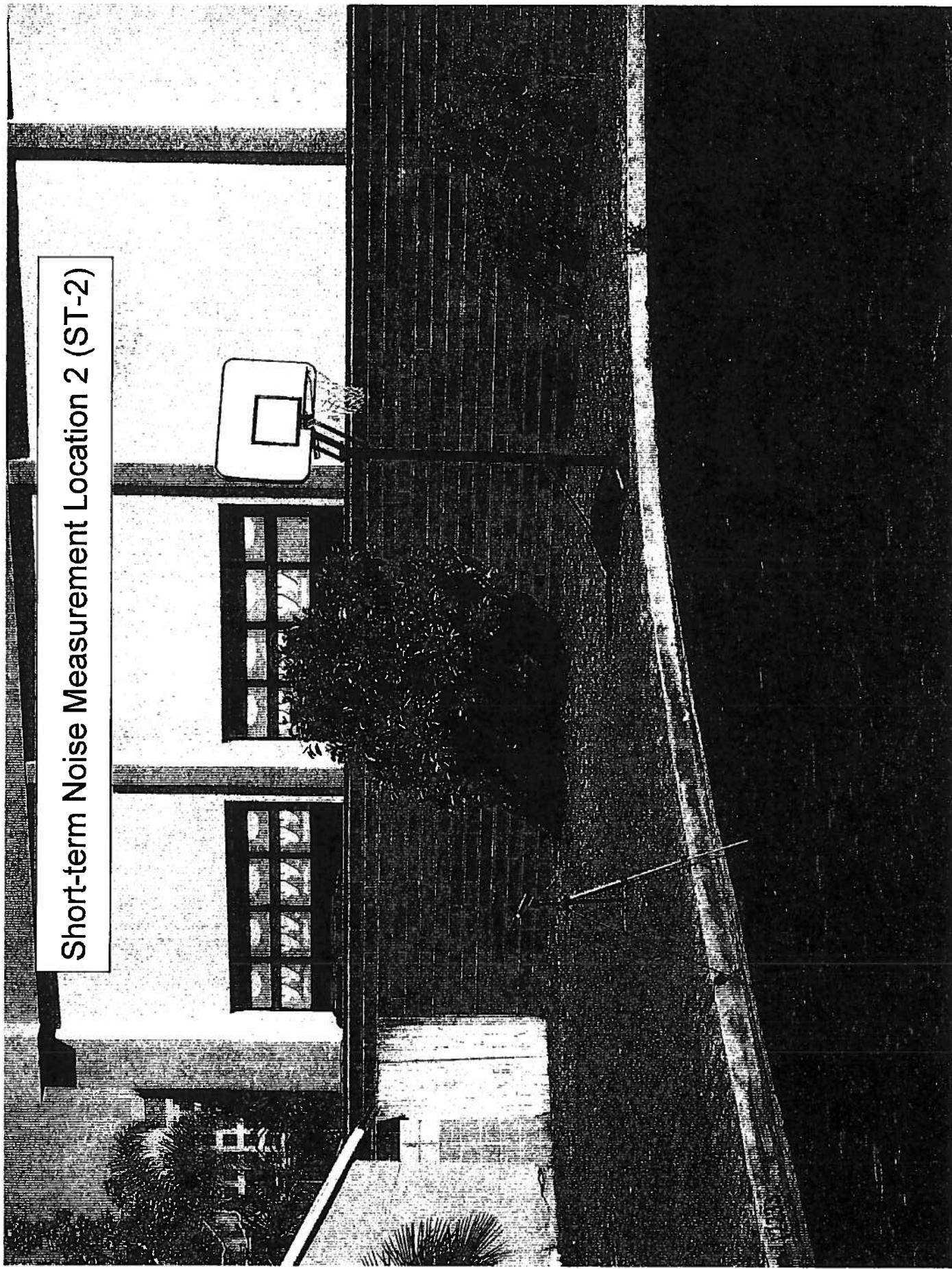
	Start Time	Stop Time	Leq	Lmin	Lmax	L2	L8	L25	L50	
Locations	1	10:16 AM	10:26 AM	56.7	42.0	70.0	64.8	61.3	57.2	53.0
	Comments: 12531 Twintree 40ft from centerline of twintree, ambient noise local traffic									
	2	10:31 AM	10:41 AM	58.2	40.0	75.0	66.6	63.6	59.2	49.7
	Comments: 12233 Choisser Rd, end of cul-d-sac, ambient noise - local traffic and typical residential noise									
	3	10:45 AM	10:55 AM	54.7	41.9	80.1	60.2	50.7	47.3	45.6
Comments: 12292 Choisser Rd, front yard @ corner of Choisser Rd and Greentree Ln, ambient noise - local traffic and typical residential noise										
4	10:58 AM	11:08 AM	49.4	42.0	74.9	54.8	53.0	49.6	47.6	
Comments: RV Park, noise meter placed 10 ft from existing 6 foot wall, ambient noise - typical residential noise and local traffic noise										
5										
Comments:										



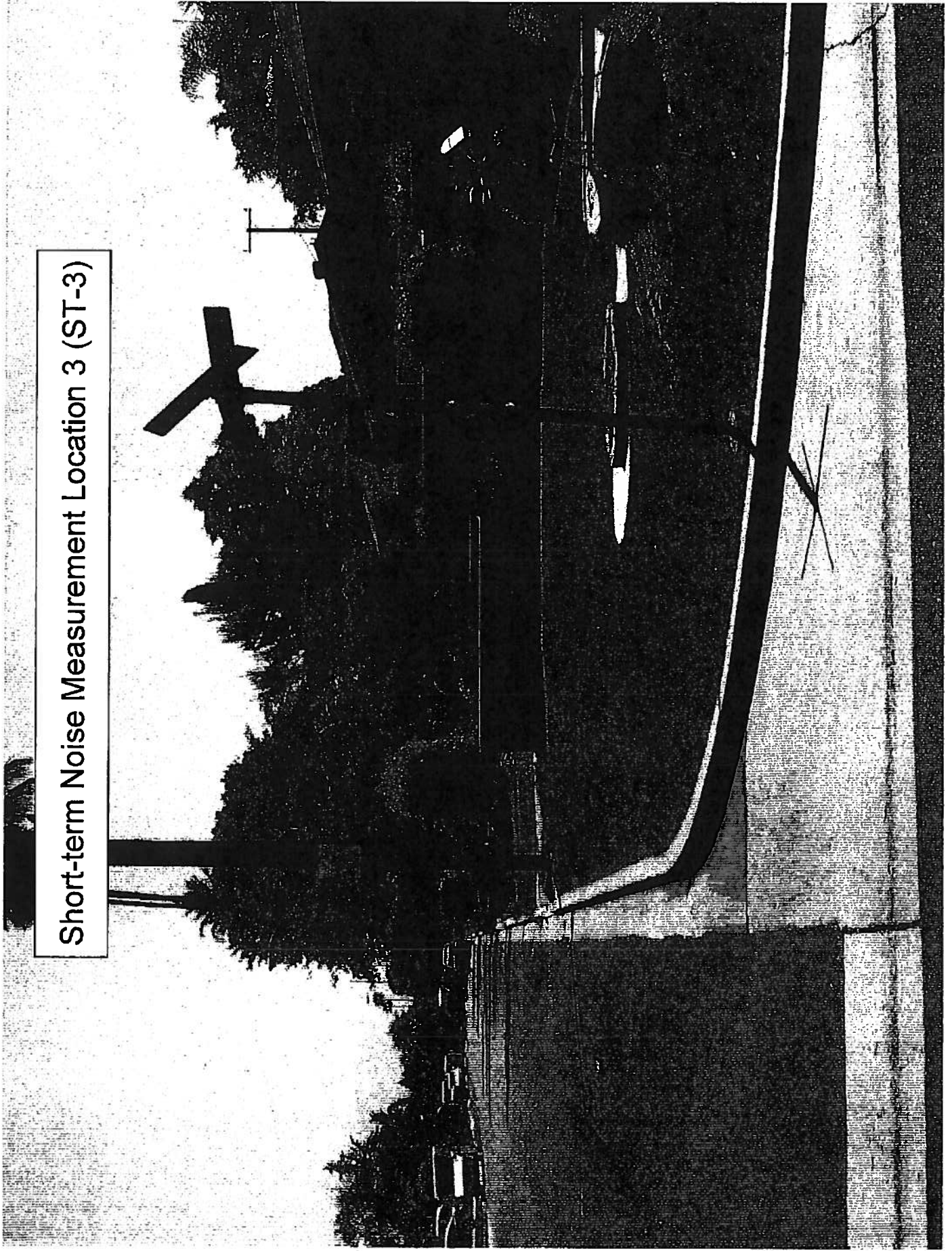
Short-term Noise Measurement Location 1 (ST-1)



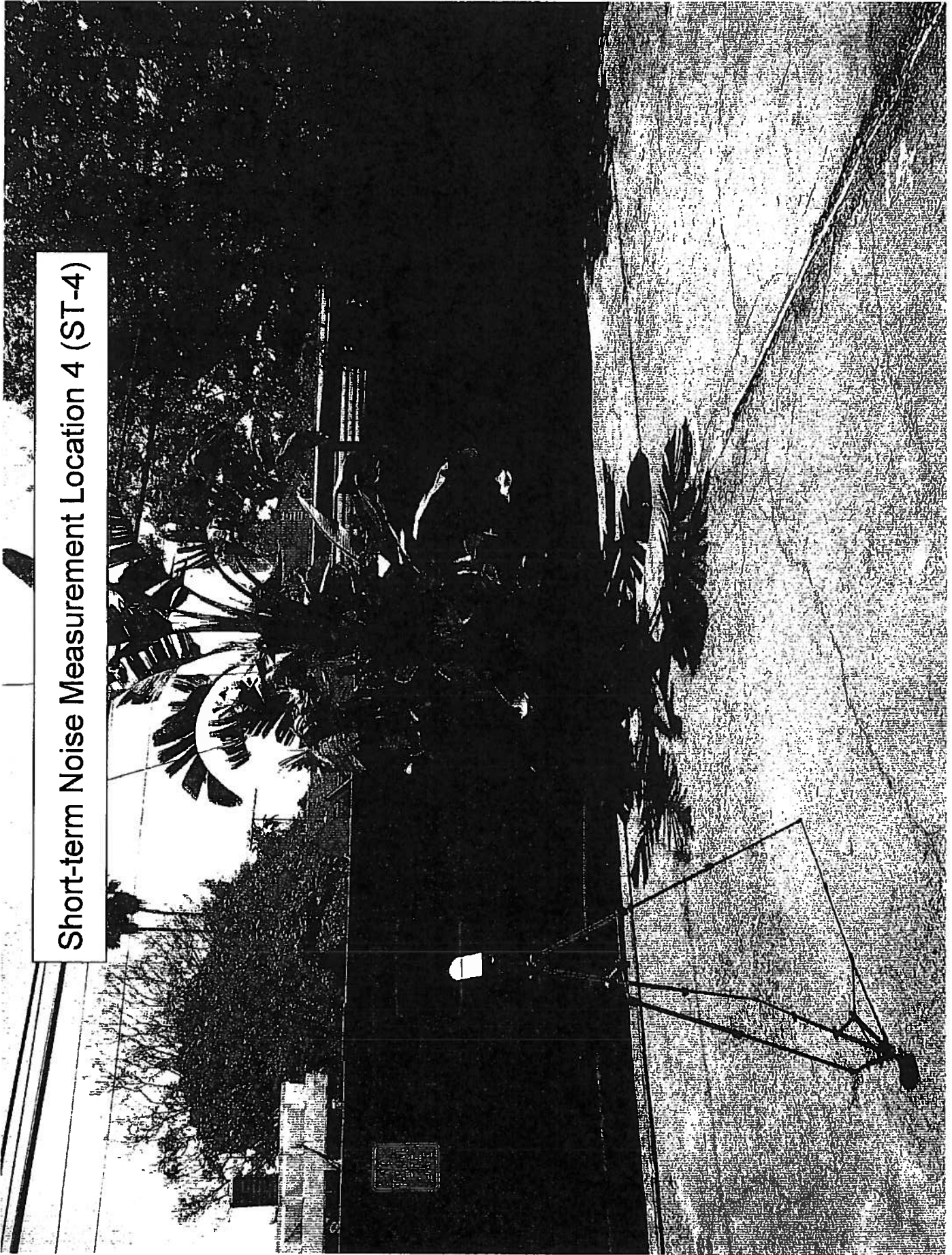
Short-term Noise Measurement Location 2 (ST-2)



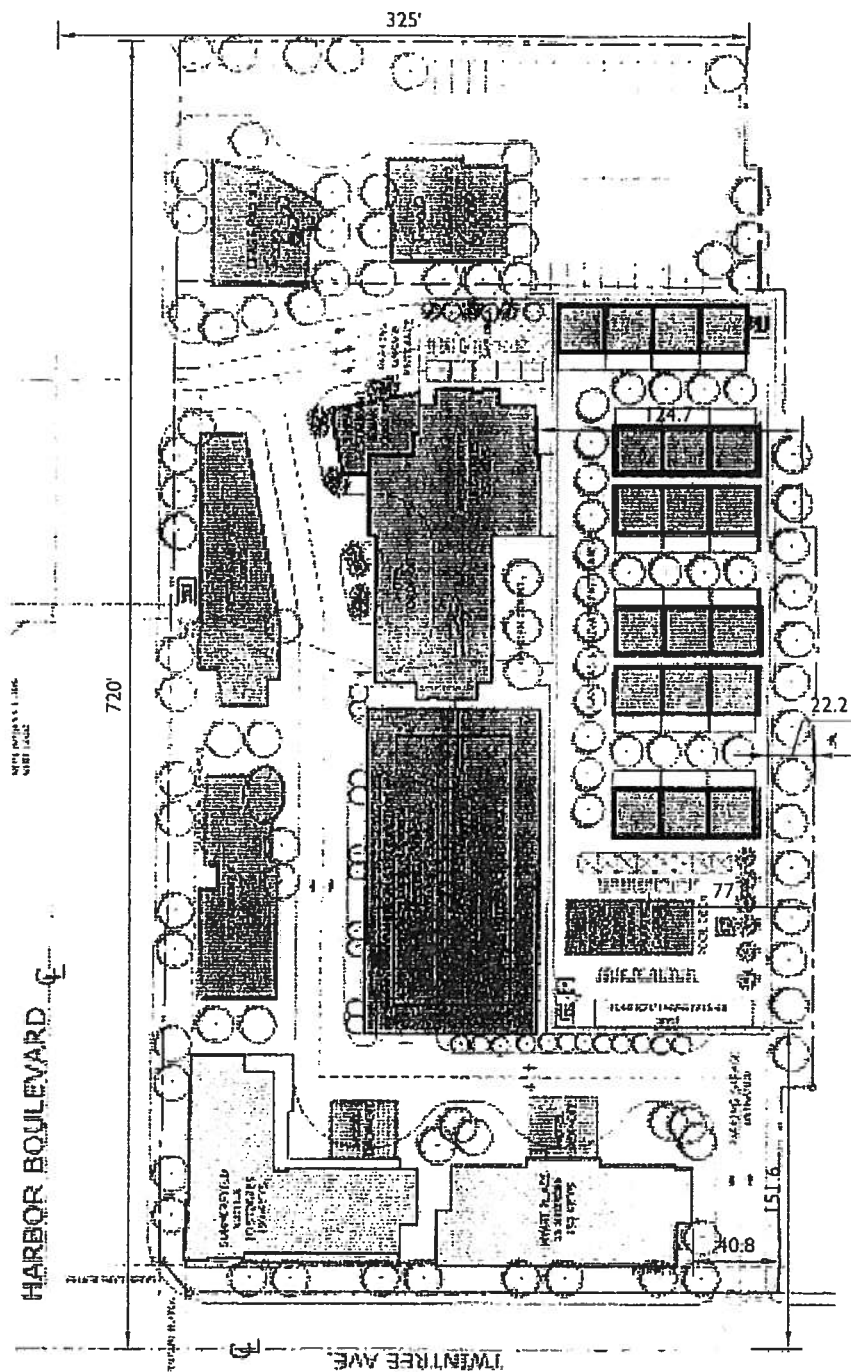
Short-term Noise Measurement Location 3 (ST-3)



Short-term Noise Measurement Location 4 (ST-4)

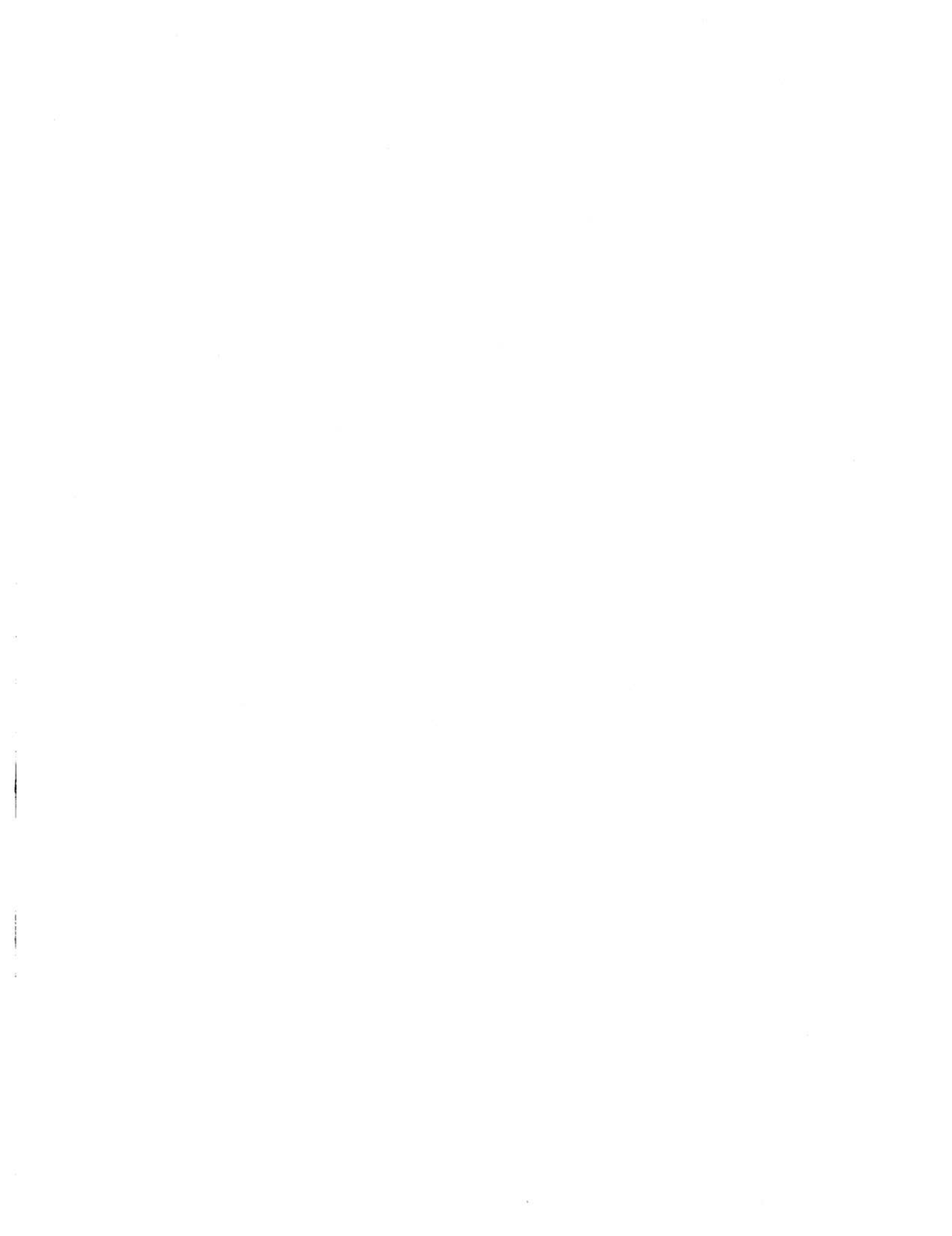


Appendix C Stationary Noise Distances



Appendix D

Traffic Noise Impact
Computer Printouts



Harbor Boulevard

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o S.R. 22 FREEWAY (EXISTING) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	35,500	PK HR VOL =	3,550
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES =	15	GRADE ADJUSTMENT =	0.00
MEDIUM TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
HEAVY TRUCKS =	15		
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.6	65.7	63.9	57.8	66.5	67.1
MEDIUM TRUCKS LEQ	58.6	57.1	50.7	49.2	57.7	57.9
HEAVY TRUCKS LEQ	59.2	57.7	48.7	50.0	58.3	58.4
VEHICULAR NOISE	68.6	66.8	64.2	59.0	67.6	68.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.6	66.8	64.2	59.0	67.6	68.1

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	61	132	284	613

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.6	68.6
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.6	68.6
CNEL WITHOUT TOPO AND BARRIER =	68.1	68.1
MIT CNEL WITH TOPO AND BARRIER =	68.1	68.1
LDN WITHOUT TOPO AND BARRIER =	67.6	67.6
MIT LDN WITH TOPO AND BARRIER =	67.6	67.6

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o GARDEN GROVE BLVD (EXISTING) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	28,900	PK HR VOL =	2,890
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES =	15	GRADE ADJUSTMENT =	0.00
MEDIUM TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
HEAVY TRUCKS =	15		
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	66.7	64.8	63.0	57.0	65.6	66.2
MEDIUM TRUCKS LEQ	57.7	56.2	49.8	48.3	56.8	57.0
HEAVY TRUCKS LEQ	58.3	56.9	47.8	49.1	57.4	57.6
VEHICULAR NOISE	67.7	65.9	63.3	58.1	66.7	67.2

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	67.7	65.9	63.3	58.1	66.7	67.2

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	53	115	248	534

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	67.7	67.7
MIT PK HR LEQ WITH TOPO AND BARRIER =	67.7	***** 67.7
CNEL WITHOUT TOPO AND BARRIER =	67.2	67.2
MIT CNEL WITH TOPO AND BARRIER =	67.2	***** 67.2
LDN WITHOUT TOPO AND BARRIER =	66.7	66.7
MIT LDN WITH TOPO AND BARRIER =	66.7	***** 66.7

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 10-May-11
 LOCATION: n/o LAMPSON AVENUE (EXISTING) BY: M. DICKERSON

NOISE INPUT DATA

ADT = 25,800 PK HR VOL = 2,580
 SPEED = 45
 PK HR % = 10
 CTL DIST= 100
 DIST N/F= 75 AUTO SLE DISTANCE = 92.75
 DT WALL= 100 MED TRUCK SLE DIST= 92.71
 DT W/OB= 0 HVY TRUCK SLE DIST= 92.75
 HTH WALL= 0.0 *****
 OBS HTH= 5.0
 AMBIENT= 0.0
 ROADWAY VIEW: LF ANGLE= -90
 RT ANGLE= 90
 DF ANGLE= 180

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES = 15
 MEDIUM TRUCKS = 15 GRADE ADJUSTMENT= 0.00
 HEAVY TRUCKS = 15 (ADJUSTMENT TO HEAVY TRUCKS)
 BARRIER = 0 (0=WALL, 1=BERM)
 PAD EL = 100.0 EL AUTOMOBILES = 102.0
 ROAD EL = 100.0 EL MEDIUM TRUCKS= 104.0
 GRADE = 0.1 % EL HEAVY TRUCKS = 108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	66.2	64.3	62.5	56.5	65.1	65.7
MEDIUM TRUCKS LEQ	57.2	55.7	49.4	47.8	56.3	56.5
HEAVY TRUCKS LEQ	57.8	56.4	47.3	48.6	56.9	57.1
VEHICULAR NOISE	67.2	65.4	62.8	57.6	66.2	66.7

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	67.2	65.4	62.8	57.6	66.2	66.7

NOISE CONTOUR (FT)

DAYTIME LEQ	70 dBA	65 dBA	60 dBA	55 dBA
	50	107	230	495

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	67.2	67.2
MIT PK HR LEQ WITH TOPO AND BARRIER =	67.2	67.2
CNEL WITHOUT TOPO AND BARRIER =	66.7	66.7
MIT CNEL WITH TOPO AND BARRIER =	66.7	66.7
LDN WITHOUT TOPO AND BARRIER =	66.2	66.2
MIT LDN WITH TOPO AND BARRIER =	66.2	66.2

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 10-May-11
 LOCATION: n/o TWINTREE LANE (EXISTING) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	28,200	PK HR VOL =	2,820
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0 *****		
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE = -90		
	RT ANGLE = 90		
	DF ANGLE = 180		
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	15	GRADE ADJUSTMENT =	0.00
MEDIUM TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
HEAVY TRUCKS =	15		
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	66.6	64.7	62.9	56.8	65.5	66.1
MEDIUM TRUCKS LEQ	57.6	56.1	49.7	48.2	56.7	56.9
HEAVY TRUCKS LEQ	58.2	56.7	47.7	49.0	57.3	57.4
VEHICULAR NOISE	67.6	65.8	63.2	58.0	66.6	67.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	67.6	65.8	63.2	58.0	66.6	67.1

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	53	113	244	526

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	67.6	67.6
MIT PK HR LEQ WITH TOPO AND BARRIER =	67.6	67.6
CNEL WITHOUT TOPO AND BARRIER =	67.1	67.1
MIT CNEL WITH TOPO AND BARRIER =	67.1	67.1
LDN WITHOUT TOPO AND BARRIER =	66.6	66.6
MIT LDN WITH TOPO AND BARRIER =	66.6	66.6

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: -SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o CHAPMAN AVENUE (EXISTING) BY: M. DICKERSON

NOISE INPUT DATA

ADT = 29,400 PK HR VOL = 2,940
 SPEED = 45
 PK HR % = 10
 CTL DIST= 100
 DIST N/F= 75 AUTO SLE DISTANCE = 92.75
 DT WALL= 100 MED TRUCK SLE DIST= 92.71
 DT W/OB= 0 HVY TRUCK SLE DIST= 92.75
 HTH WALL= 0.0 *****
 OBS HTH= 5.0
 AMBIENT= 0.0
 ROADWAY VIEW: LF ANGLE= -90
 RT ANGLE= 90
 DF ANGLE= 180

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES = 15
 MEDIUM TRUCKS = 15 GRADE ADJUSTMENT= 0.00
 HEAVY TRUCKS = 15 (ADJUSTMENT TO HEAVY TRUCKS)
 BARRIER = 0 (0=WALL,1=BERM)
 PAD EL = 100.0 EL AUTOMOBILES = 102.0
 ROAD EL = 100.0 EL MEDIUM TRUCKS= 104.0
 GRADE = 0.1 % EL HEAVY TRUCKS = 108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	66.7	64.8	63.1	57.0	65.7	66.3
MEDIUM TRUCKS LEQ	57.8	56.3	49.9	48.4	56.8	57.1
HEAVY TRUCKS LEQ	58.4	56.9	47.9	49.1	57.5	57.6
VEHICULAR NOISE	67.8	66.0	63.4	58.2	66.7	67.3

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	67.8	66.0	63.4	58.2	66.7	67.3

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	54	116	251	540

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	67.8	67.8
MIT PK HR LEQ WITH TOPO AND BARRIER =	67.8	***** 67.8
CNEL WITHOUT TOPO AND BARRIER =	67.3	67.3
MIT CNEL WITH TOPO AND BARRIER =	67.3	***** 67.3
LDN WITHOUT TOPO AND BARRIER =	66.7	66.7
MIT LDN WITH TOPO AND BARRIER =	66.7	***** 66.7

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o S.R. 22 FREEWAY (2014 W/OUT PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	37,400	PK HR VOL =	3,740
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES =	15	GRADE ADJUSTMENT =	0.00
MEDIUM TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
HEAVY TRUCKS =	15		
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.8	65.9	64.1	58.1	66.7	67.3
MEDIUM TRUCKS LEQ	58.8	57.3	51.0	49.4	57.9	58.1
HEAVY TRUCKS LEQ	59.4	58.0	48.9	50.2	58.5	58.7
VEHICULAR NOISE	68.8	67.0	64.5	59.2	67.8	68.3

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.8	67.0	64.5	59.2	67.8	68.3

NOISE CONTOUR (FT)

DAYTIME LEQ	70 dBA	65 dBA	60 dBA	55 dBA
	63	137	294	634

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.8	68.8
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.8	***** 68.8
CNEL WITHOUT TOPO AND BARRIER =	68.3	68.3
MIT CNEL WITH TOPO AND BARRIER =	68.3	***** 68.3
LDN WITHOUT TOPO AND BARRIER =	67.8	67.8
MIT LDN WITH TOPO AND BARRIER =	67.8	***** 67.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o GARDEN GROVE BLVD (2014 W/OUT PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	31,500	PK HR VOL =	3,150
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	15		
MEDIUM TRUCKS =	15	GRADE ADJUSTMENT =	0.00
HEAVY TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.0	65.1	63.4	57.3	66.0	66.6
MEDIUM TRUCKS LEQ	58.1	56.6	50.2	48.7	57.1	57.4
HEAVY TRUCKS LEQ	58.7	57.2	48.2	49.4	57.8	57.9
VEHICULAR NOISE	68.1	66.3	63.7	58.5	67.0	67.6

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.1	66.3	63.7	58.5	67.0	67.6

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	57	122	263	566

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.1	68.1
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.1	***** 68.1
CNEL WITHOUT TOPO AND BARRIER =	67.6	67.6
MIT CNEL WITH TOPO AND BARRIER =	67.6	***** 67.6
LDN WITHOUT TOPO AND BARRIER =	67.0	67.0
MIT LDN WITH TOPO AND BARRIER =	67.0	***** 67.0

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o LAMPSON AVENUE (2014 W/OUT PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT = 28,200 PK HR VOL = 2,820
 SPEED = 45
 PK HR % = 10
 CTL DIST = 100
 DIST N/F = 75 AUTO SLE DISTANCE = 92.75
 DT WALL = 100 MED TRUCK SLE DIST = 92.71
 DT W/OB = 0 HVY TRUCK SLE DIST = 92.75
 HTH WALL = 0.0 *****
 OBS HTH = 5.0
 AMBIENT = 0.0
 ROADWAY VIEW: LF ANGLE = -90
 RT ANGLE = 90
 DF ANGLE = 180

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES = 15
 MEDIUM TRUCKS = 15 GRADE ADJUSTMENT = 0.00
 HEAVY TRUCKS = 15 (ADJUSTMENT TO HEAVY TRUCKS)
 BARRIER = 0 (0=WALL, 1=BERM)
 PAD EL = 100.0 EL AUTOMOBILES = 102.0
 ROAD EL = 100.0 EL MEDIUM TRUCKS = 104.0
 GRADE = 0.1 % EL HEAVY TRUCKS = 108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	66.6	64.7	62.9	56.8	65.5	66.1
MEDIUM TRUCKS LEQ	57.6	56.1	49.7	48.2	56.7	56.9
HEAVY TRUCKS LEQ	58.2	56.7	47.7	49.0	57.3	57.4
VEHICULAR NOISE	67.6	65.8	63.2	58.0	66.6	67.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	67.6	65.8	63.2	58.0	66.6	67.1

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	53	113	244	526

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	67.6	67.6
MIT PK HR LEQ WITH TOPO AND BARRIER =	67.6	67.6
CNEL WITHOUT TOPO AND BARRIER =	67.1	67.1
MIT CNEL WITH TOPO AND BARRIER =	67.1	67.1
LDN WITHOUT TOPO AND BARRIER =	66.6	66.6
MIT LDN WITH TOPO AND BARRIER =	66.6	66.6

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o TWINTREE LANE (2014 W/OUT PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	30,300	PK HR VOL =	3,030
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	15		
MEDIUM TRUCKS =	15	GRADE ADJUSTMENT =	0.00
HEAVY TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0
VEHICLE TYPE			
	DAY	EVENING	NIGHT
AUTOMOBILES	0.775	0.129	0.096
MEDIUM TRUCKS	0.848	0.049	0.103
HEAVY TRUCKS	0.865	0.027	0.108
			DAILY
			0.9742
			0.0184
			0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	66.9	65.0	63.2	57.2	65.8	66.4
MEDIUM TRUCKS LEQ	57.9	56.4	50.1	48.5	57.0	57.2
HEAVY TRUCKS LEQ	58.5	57.1	48.0	49.3	57.6	57.8
VEHICULAR NOISE	67.9	66.1	63.5	58.3	66.9	67.4

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	67.9	66.1	63.5	58.3	66.9	67.4

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	55	119	256	551
W/O AMBIENT				
PK HR LEQ WITHOUT TOPO OR BARRIER =	67.9			67.9
MIT PK HR LEQ WITH TOPO AND BARRIER =	67.9	*****		67.9
CNEL WITHOUT TOPO AND BARRIER =	67.4			67.4
MIT CNEL WITH TOPO AND BARRIER =	67.4	*****		67.4
LDN WITHOUT TOPO AND BARRIER =	66.9			66.9
MIT LDN WITH TOPO AND BARRIER =	66.9	*****		66.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o CHAPMAN AVENUE (2014 W/OUT PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	31,300	PK HR VOL =	3,130
SPEED =	45		
PK HR % =	10		
CTL DIST=	100		
DIST N/F=	75	AUTO SLE DISTANCE =	92.75
DT WALL=	100	MED TRUCK SLE DIST=	92.71
DT W/OB=	0	HVY TRUCK SLE DIST=	92.75
HTH WALL=	0.0	*****	
OBS HTH=	5.0		
AMBIENT=	0.0		
ROADWAY VIEW:	LF ANGLE=	-90	
	RT ANGLE=	90	
	DF ANGLE=	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	15		
MEDIUM TRUCKS =	15	GRADE ADJUSTMENT=	0.00
HEAVY TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS=	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0
VEHICLE TYPE			
	DAY	EVENING	NIGHT
AUTOMOBILES	0.775	0.129	0.096
MEDIUM TRUCKS	0.848	0.049	0.103
HEAVY TRUCKS	0.865	0.027	0.108
			DAILY
			0.9742
			0.0184
			0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.0	65.1	63.4	57.3	65.9	66.5
MEDIUM TRUCKS LEQ	58.1	56.6	50.2	48.6	57.1	57.3
HEAVY TRUCKS LEQ	58.6	57.2	48.2	49.4	57.8	57.9
VEHICULAR NOISE	68.1	66.3	63.7	58.4	67.0	67.5

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.1	66.3	63.7	58.4	67.0	67.5

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	56	121	262	563

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.1	68.1
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.1	***** 68.1
CNEL WITHOUT TOPO AND BARRIER =	67.5	67.5
MIT CNEL WITH TOPO AND BARRIER =	67.5	***** 67.5
LDN WITHOUT TOPO AND BARRIER =	67.0	67.0
MIT LDN WITH TOPO AND BARRIER =	67.0	***** 67.0

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o S.R. 22 FREEWAY (2014 W/ PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	39,700	PK HR VOL =	3,970
SPEED =	45		
PK HR % =	10		
CTL DIST=	100		
DIST N/F=	75	AUTO SLE DISTANCE =	92.75
DT WALL=	100	MED TRUCK SLE DIST=	92.71
DT W/OB=	0	HVY TRUCK SLE DIST=	92.75
HTH WALL=	0.0	*****	
OBS HTH=	5.0		
AMBIENT=	0.0		
ROADWAY VIEW:	LF ANGLE=	-90	
	RT ANGLE=	90	
	DF ANGLE=	180	

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES =	15	GRADE ADJUSTMENT=	0.00
MEDIUM TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
HEAVY TRUCKS =	15		
BARRIER =	0 (0=WALL,1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS=	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	68.1	66.2	64.4	58.3	67.0	67.6
MEDIUM TRUCKS LEQ	59.1	57.6	51.2	49.7	58.1	58.4
HEAVY TRUCKS LEQ	59.7	58.2	49.2	50.4	58.8	58.9
VEHICULAR NOISE	69.1	67.3	64.7	59.5	68.0	68.6

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	69.1	67.3	64.7	59.5	68.0	68.6

NOISE CONTOUR (FT)

DAYTIME LEQ	70 dBA	65 dBA	60 dBA	55 dBA
	66	142	306	660

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	69.1	69.1
MIT PK HR LEQ WITH TOPO AND BARRIER =	69.1	69.1
CNEL WITHOUT TOPO AND BARRIER =	68.6	68.6
MIT CNEL WITH TOPO AND BARRIER =	68.6	68.6
LDN WITHOUT TOPO AND BARRIER =	68.0	68.0
MIT LDN WITH TOPO AND BARRIER =	68.0	68.0

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o GARDEN GROVE BLVD (2014 W/ PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT = 34,400 PK HR VOL = 3,440
 SPEED = 45
 PK HR % = 10
 CTL DIST = 100
 DIST N/P = 75 AUTO SLE DISTANCE = 92.75
 DT WALL = 100 MED TRUCK SLE DIST = 92.71
 DT W/OB = 0 HVY TRUCK SLE DIST = 92.75
 HTH WALL = 0.0 *****
 OBS HTH = 5.0
 AMBIENT = 0.0

ROADWAY VIEW: LF ANGLE = -90
 RT ANGLE = 90
 DF ANGLE = 180

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES = 15
 MEDIUM TRUCKS = 15 GRADE ADJUSTMENT = 0.00
 HEAVY TRUCKS = 15 (ADJUSTMENT TO HEAVY TRUCKS)
 BARRIER = 0 (0=WALL, 1=BERM)
 PAD EL = 100.0 EL AUTOMOBILES = 102.0
 ROAD EL = 100.0 EL MEDIUM TRUCKS = 104.0
 GRADE = 0.1 % EL HEAVY TRUCKS = 108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.4	65.5	63.8	57.7	66.3	66.9
MEDIUM TRUCKS LEQ	58.5	57.0	50.6	49.1	57.5	57.8
HEAVY TRUCKS LEQ	59.0	57.6	48.6	49.8	58.2	58.3
VEHICULAR NOISE	68.5	66.7	64.1	58.8	67.4	67.9

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.5	66.7	64.1	58.8	67.4	67.9

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	60	129	279	600

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.5	68.5
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.5	68.5
CNEL WITHOUT TOPO AND BARRIER =	67.9	67.9
MIT CNEL WITH TOPO AND BARRIER =	67.9	67.9
LDN WITHOUT TOPO AND BARRIER =	67.4	67.4
MIT LDN WITH TOPO AND BARRIER =	67.4	67.4

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o LAMPSON AVENUE (2014 W/ PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	31,600	PK HR VOL =	3,160
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES =	15	GRADE ADJUSTMENT =	0.00
MEDIUM TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
HEAVY TRUCKS =	15		
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.1	65.2	63.4	57.3	66.0	66.6
MEDIUM TRUCKS LEQ	58.1	56.6	50.2	48.7	57.2	57.4
HEAVY TRUCKS LEQ	58.7	57.2	48.2	49.5	57.8	57.9
VEHICULAR NOISE	68.1	66.3	63.7	58.5	67.1	67.6

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.1	66.3	63.7	58.5	67.1	67.6

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	57	122	263	567

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.1	68.1
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.1	68.1
CNEL WITHOUT TOPO AND BARRIER =	67.6	67.6
MIT CNEL WITH TOPO AND BARRIER =	67.6	67.6
LDN WITHOUT TOPO AND BARRIER =	67.1	67.1
MIT LDN WITH TOPO AND BARRIER =	67.1	67.1

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o TWINTREE LANE (2014 W/ PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,200	PK HR VOL =	3,320
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	

SITE CONDITIONS (10-HARD SITE, 15-SOFT SITE)

AUTOMOBILES =	15	GRADE ADJUSTMENT =	0.00
MEDIUM TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
HEAVY TRUCKS =	15		
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.3	65.4	63.6	57.6	66.2	66.8
MEDIUM TRUCKS LEQ	58.3	56.8	50.4	48.9	57.4	57.6
HEAVY TRUCKS LEQ	58.9	57.5	48.4	49.7	58.0	58.2
VEHICULAR NOISE	68.3	66.5	63.9	58.7	67.3	67.8

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.3	66.5	63.9	58.7	67.3	67.8

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	59	126	272	586

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.3	68.3
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.3	68.3
CNEL WITHOUT TOPO AND BARRIER =	67.8	67.8
MIT CNEL WITH TOPO AND BARRIER =	67.8	67.8
LDN WITHOUT TOPO AND BARRIER =	67.3	67.3
MIT LDN WITH TOPO AND BARRIER =	67.3	67.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GARDEN GROVE JOB #: 0762-11-02
 ROADWAY: HARBOR BLVD DATE: 18-May-11
 LOCATION: n/o CHAPMAN AVENUE (2014 W/ PROJECT) BY: M. DICKERSON

NOISE INPUT DATA

ADT =	34,100	PK HR VOL =	3,410
SPEED =	45		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	75	AUTO SLE DISTANCE =	92.75
DT WALL =	100	MED TRUCK SLE DIST =	92.71
DT W/OB =	0	HVY TRUCK SLE DIST =	92.75
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	15		
MEDIUM TRUCKS =	15	GRADE ADJUSTMENT =	0.00
HEAVY TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.4	65.5	63.7	57.7	66.3	66.9
MEDIUM TRUCKS LEQ	58.4	56.9	50.6	49.0	57.5	57.7
HEAVY TRUCKS LEQ	59.0	57.6	48.5	49.8	58.1	58.3
VEHICULAR NOISE	68.4	66.6	64.1	58.8	67.4	67.9

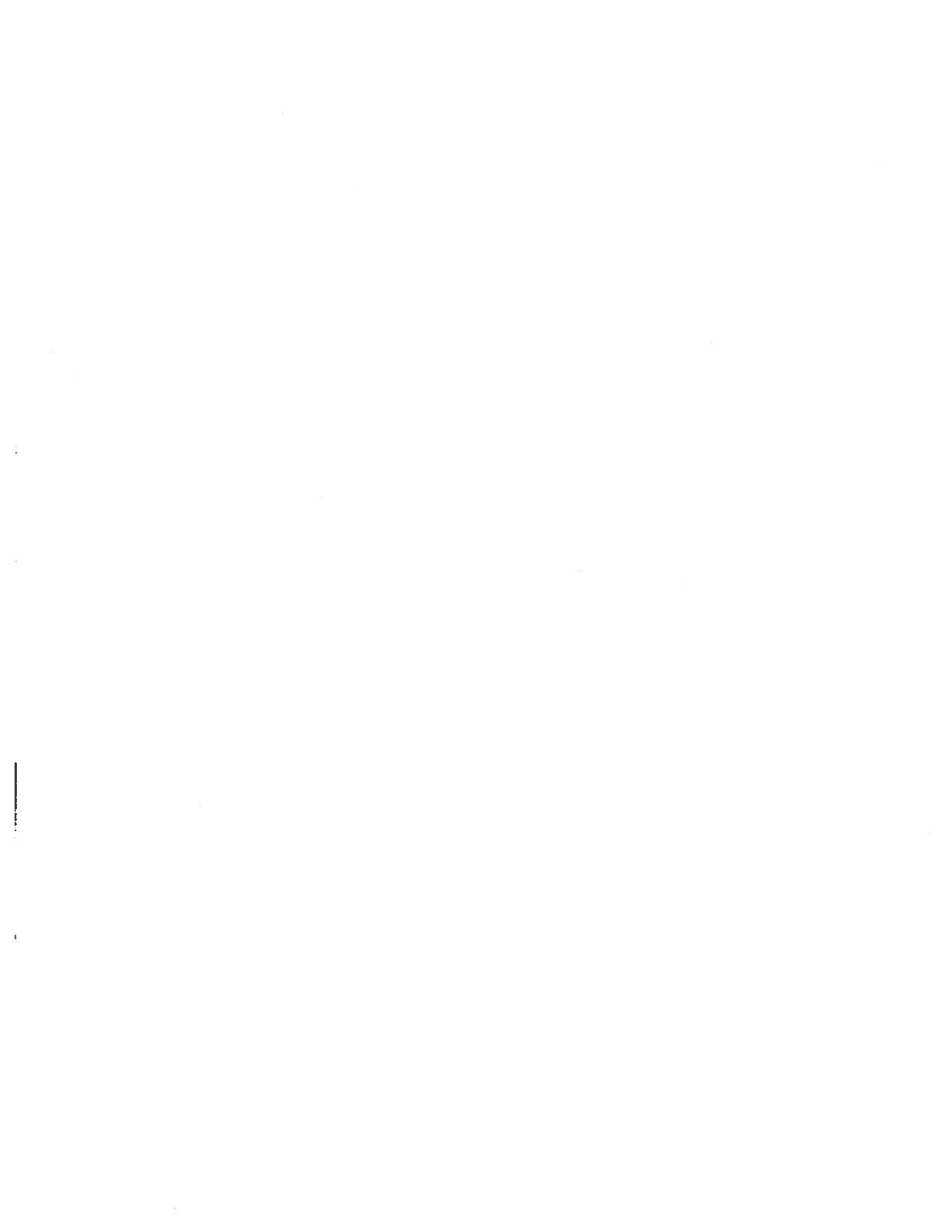
NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.4	66.6	64.1	58.8	67.4	67.9

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	60	129	277	597

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.4	68.4
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.4	***** 68.4
CNEL WITHOUT TOPO AND BARRIER =	67.9	67.9
MIT CNEL WITH TOPO AND BARRIER =	67.9	***** 67.9
LDN WITHOUT TOPO AND BARRIER =	67.4	67.4
MIT LDN WITH TOPO AND BARRIER =	67.4	***** 67.4



TwinTree Lane



FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: HARBOR BLVD HOTEL AND WATER PARK ACOUSTICAL STUDY JOB #: 0762-11-02
 ROADWAY: TWINTREE LANE DATE: 10-May-11
 LOCATION: e/o HARBOR BLVD BY: M. DICKERSON

NOISE INPUT DATA

ADT = 2,000 PK HR VOL = 200
 SPEED = 25
 PK HR % = 10
 CTL DIST = 100
 DIST N/P = 25 AUTO SLE DISTANCE = 99.26
 DT WALL = 100 MED TRUCK SLE DIST = 99.22
 DT W/OB = 0 HVY TRUCK SLE DIST = 99.26
 HTH WALL = 0.0 *****
 OBS HTH = 5.0
 AMBIENT = 0.0

ROADWAY VIEW: LP ANGLE = -90
 RT ANGLE = 90
 DP ANGLE = 180

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES = 15
 MEDIUM TRUCKS = 15 GRADE ADJUSTMENT = 0.00
 HEAVY TRUCKS = 15 (ADJUSTMENT TO HEAVY TRUCKS)
 BARRIER = 0 (0=WALL, 1=BERM)
 PAD EL = 100.0 EL AUTOMOBILES = 102.0
 ROAD EL = 100.0 EL MEDIUM TRUCKS = 104.0
 GRADE = 0.1 % EL HEAVY TRUCKS = 108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	47.3	45.4	43.6	37.6	46.2	46.8
MEDIUM TRUCKS LEQ	41.7	40.2	33.8	32.3	40.7	41.0
HEAVY TRUCKS LEQ	43.9	42.5	33.4	34.7	43.0	43.2
VEHICULAR NOISE	49.7	48.0	44.4	40.1	48.7	49.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	49.7	48.0	44.4	40.1	48.7	49.1

NOISE CONTOUR (FT)

DAYTIME LEQ	70 dBA	65 dBA	60 dBA	55 dBA
	3	7	16	34

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	49.7	49.7
MIT PK HR LEQ WITH TOPO AND BARRIER =	49.7	49.7
CNEL WITHOUT TOPO AND BARRIER =	49.1	49.1
MIT CNEL WITH TOPO AND BARRIER =	49.1	49.1
LDN WITHOUT TOPO AND BARRIER =	48.7	48.7
MIT LDN WITH TOPO AND BARRIER =	48.7	48.7

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: HARBOR BLVD HOTEL AND WATER PARK ACOUSTICAL STUDY JOB #: 0762-11-02
 ROADWAY: TWINTREE LANE DATE: 10-May-11
 LOCATION: e/o HARBOR BLVD BY: M. DICKERSON

NOISE INPUT DATA

ADT = 2,100 PK HR VOL = 210
 SPEED = 25
 PK HR % = 10
 CTL DIST = 100
 DIST N/F = 25 AUTO SLE DISTANCE = 99.26
 DT WALL = 100 MED TRUCK SLE DIST = 99.22
 DT W/OB = 0 HVY TRUCK SLE DIST = 99.26
 HTH WALL = 0.0 *****
 OBS HTH = 5.0
 AMBIENT = 0.0

ROADWAY VIEW: LF ANGLE = -90
 RT ANGLE = 90
 DF ANGLE = 180

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES = 15
 MEDIUM TRUCKS = 15 GRADE ADJUSTMENT = 0.00
 HEAVY TRUCKS = 15 (ADJUSTMENT TO HEAVY TRUCKS)
 BARRIER = 0 (0=WALL, 1=BERM)
 PAD EL = 100.0 EL AUTOMOBILES = 102.0
 ROAD EL = 100.0 EL MEDIUM TRUCKS = 104.0
 GRADE = 0.1 % EL HEAVY TRUCKS = 108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	47.5	45.6	43.8	37.8	46.4	47.0
MEDIUM TRUCKS LEQ	41.9	40.4	34.0	32.5	41.0	41.2
HEAVY TRUCKS LEQ	44.1	42.7	33.6	34.9	43.2	43.4
VEHICULAR NOISE	49.9	48.2	44.6	40.4	48.9	49.3

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	49.9	48.2	44.6	40.4	48.9	49.3

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	4	8	16	35

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	49.9	49.9
MIT PK HR LEQ WITH TOPO AND BARRIER =	49.9	49.9
CNEL WITHOUT TOPO AND BARRIER =	49.3	49.3
MIT CNEL WITH TOPO AND BARRIER =	49.3	49.3
LDN WITHOUT TOPO AND BARRIER =	48.9	48.9
MIT LDN WITH TOPO AND BARRIER =	48.9	48.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: HARBOR BLVD HOTEL AND WATER PARK ACOUSTICAL STUDY JOB #: 0762-11-02
 ROADWAY: TWINTREE LANE DATE: 10-May-11
 LOCATION: e/o HARBOR BLVD BY: M. DICKERSON

NOISE INPUT DATA

ADT =	3,700	PK HR VOL =	370
SPEED =	25		
PK HR % =	10		
CTL DIST =	100		
DIST N/F =	25	AUTO SLE DISTANCE =	99.26
DT WALL =	100	MED TRUCK SLE DIST =	99.22
DT W/OB =	0	HVY TRUCK SLE DIST =	99.26
HTH WALL =	0.0	*****	
OBS HTH =	5.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	15		
MEDIUM TRUCKS =	15	GRADE ADJUSTMENT =	0.00
HEAVY TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	50.0	48.1	46.3	40.2	48.9	49.5
MEDIUM TRUCKS LEQ	44.4	42.9	36.5	35.0	43.4	43.6
HEAVY TRUCKS LEQ	46.6	45.1	36.1	37.4	45.7	45.8
VEHICULAR NOISE	52.3	50.6	47.1	42.8	51.3	51.8

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

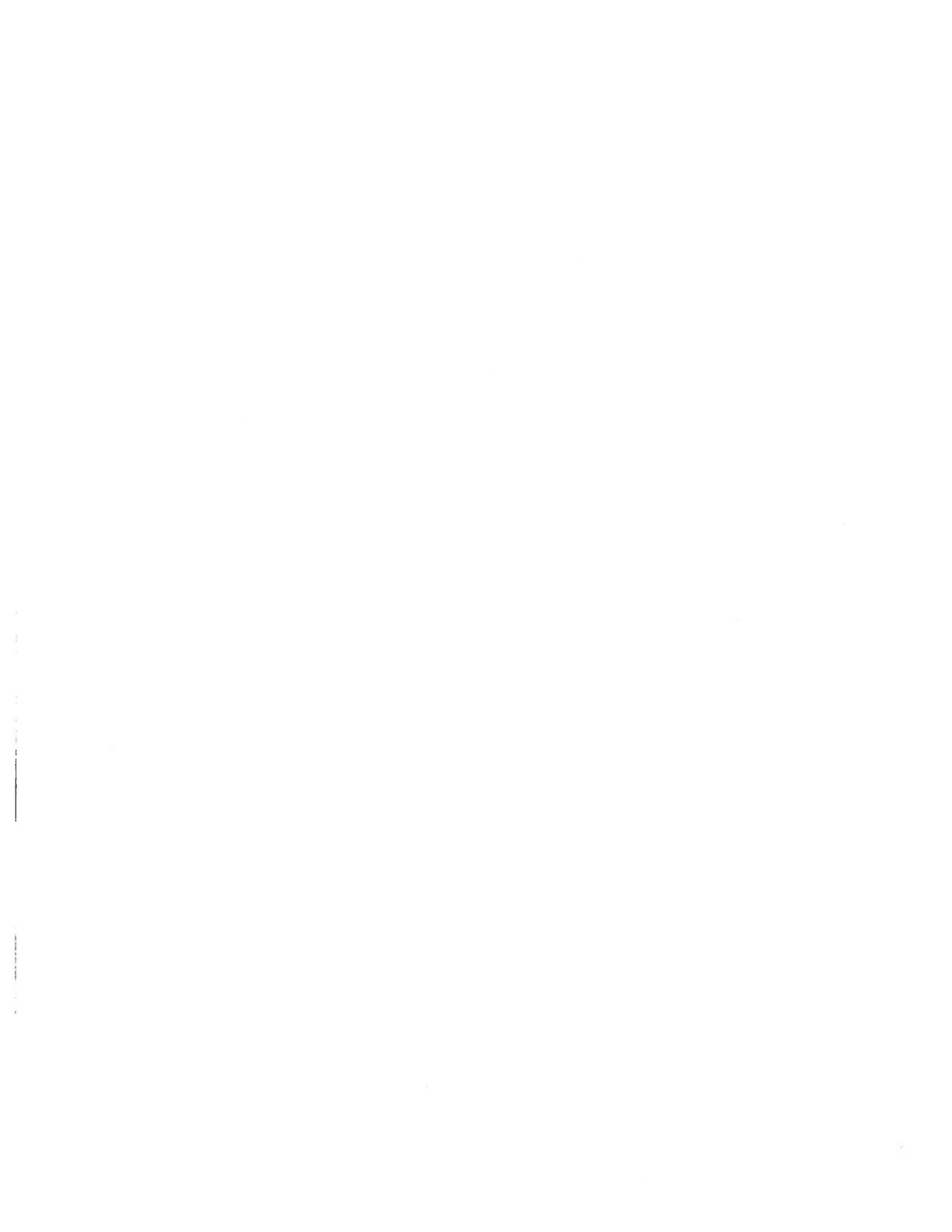
	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	52.3	50.6	47.1	42.8	51.3	51.8

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	5	11	24	51

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	52.3	52.3
MIT PK HR LEQ WITH TOPO AND BARRIER =	52.3	*****
CNEL WITHOUT TOPO AND BARRIER =	51.8	51.8
MIT CNEL WITH TOPO AND BARRIER =	51.8	*****
LDN WITHOUT TOPO AND BARRIER =	51.3	51.3
MIT LDN WITH TOPO AND BARRIER =	51.3	*****

Hotel Tower Façade Noise Calculations



FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 1ST FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,600	PK HR VOL =	3,360
SPEED =	45		
PK HR % =	10		
CTL DIST=	150		
DIST N/F=	75	AUTO SLE DISTANCE =	145.27
DT WALL=	100	MED TRUCK SLE DIST=	145.24
DT W/OB=	50	HVY TRUCK SLE DIST=	145.27
HTH WALL=	0.0	*****	
OBS HTH=	5.0		
AMBIENT=	0.0		
ROADWAY VIEW:	LF ANGLE=	-90	
	RT ANGLE=	90	
	DF ANGLE=	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	15		
MEDIUM TRUCKS =	15	GRADE ADJUSTMENT=	0.00
HEAVY TRUCKS =	15	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS=	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	64.4	62.5	60.7	54.7	63.3	63.9
MEDIUM TRUCKS LEQ	55.4	53.9	47.6	46.0	54.5	54.7
HEAVY TRUCKS LEQ	56.0	54.6	45.6	46.8	55.2	55.3
VEHICULAR NOISE	65.4	63.6	61.1	55.8	64.4	64.9

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	65.4	63.6	61.1	55.8	64.4	64.9

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	57	122	263	566

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	65.4	65.4
MIT PK HR LEQ WITH TOPO AND BARRIER =	65.4	65.4
CNEL WITHOUT TOPO AND BARRIER =	64.9	64.9
MIT CNEL WITH TOPO AND BARRIER =	64.9	64.9
LDN WITHOUT TOPO AND BARRIER =	64.4	64.4
MIT LDN WITH TOPO AND BARRIER =	64.4	64.4

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 2ND FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,600	PK HR VOL =	3,360
SPEED =	45		
PK HR % =	10		
CTL DIST=	150		
DIST N/F=	75	AUTO SLE DISTANCE =	145.82
DT WALL=	100	MED TRUCK SLE DIST=	145.65
DT W/OB=	50	HVY TRUCK SLE DIST=	145.41
HTH WALL=	0.0	*****	
OBS HTH=	15.0		
AMBIENT=	0.0		
ROADWAY VIEW:	LF ANGLE=	-90	
	RT ANGLE=	90	
	DF ANGLE=	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	10		
MEDIUM TRUCKS =	10	GRADE ADJUSTMENT=	0.00
HEAVY TRUCKS =	10	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL,1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS=	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.9	66.0	64.3	58.2	66.8	67.4
MEDIUM TRUCKS LEQ	59.0	57.5	51.1	49.6	58.0	58.3
HEAVY TRUCKS LEQ	59.6	58.1	49.1	50.3	58.7	58.8
VEHICULAR NOISE	69.0	67.2	64.6	59.4	67.9	68.4

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	69.0	67.2	64.6	59.4	67.9	68.4

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	78	248	784	2480

	N/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	69.0	69.0
MIT PK HR LEQ WITH TOPO AND BARRIER =	69.0	***** 69.0
CNEL WITHOUT TOPO AND BARRIER =	68.4	68.4
MIT CNEL WITH TOPO AND BARRIER =	68.4	***** 68.4
LDN WITHOUT TOPO AND BARRIER =	67.9	67.9
MIT LDN WITH TOPO AND BARRIER =	67.9	***** 67.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 3RD FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT = 33,600 PK HR VOL = 3,360
 SPEED = 45
 PK HR % = 10
 CTL DIST = 150
 DIST N/F = 75 AUTO SLE DISTANCE = 147.05
 DT WALL = 100 MED TRUCK SLE DIST = 146.75
 DT W/OB = 50 HVY TRUCK SLE DIST = 146.23
 HTH WALL = 0.0 *****
 OBS HTH = 25.0
 AMBIENT = 0.0
 ROADWAY VIEW: LF ANGLE = -90
 RT ANGLE = 90
 DP ANGLE = 180
 SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)
 AUTOMOBILES = 10
 MEDIUM TRUCKS = 10 GRADE ADJUSTMENT = 0.00
 HEAVY TRUCKS = 10 (ADJUSTMENT TO HEAVY TRUCKS)
 BARRIER = 0 (0=WALL, 1=BERM)
 PAD EL = 100.0 EL AUTOMOBILES = 102.0
 ROAD EL = 100.0 EL MEDIUM TRUCKS = 104.0
 GRADE = 0.1 % EL HEAVY TRUCKS = 108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.9	66.0	64.2	58.2	66.8	67.4
MEDIUM TRUCKS LEQ	59.0	57.4	51.1	49.5	58.0	58.2
HEAVY TRUCKS LEQ	59.5	58.1	49.1	50.3	58.7	58.8
VEHICULAR NOISE	69.0	67.1	64.6	59.3	67.9	68.4

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	69.0	67.1	64.6	59.3	67.9	68.4

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	78	246	778	2460

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	69.0	69.0
MIT PK HR LEQ WITH TOPO AND BARRIER =	69.0	69.0
CNEL WITHOUT TOPO AND BARRIER =	68.4	68.4
MIT CNEL WITH TOPO AND BARRIER =	68.4	68.4
LDN WITHOUT TOPO AND BARRIER =	67.9	67.9
MIT LDN WITH TOPO AND BARRIER =	67.9	67.9

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 4TH FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,600	PK HR VOL =	3,360
SPRED =	45		
PK HR % =	10		
CTL DIST =	150		
DIST N/F =	75	AUTO SLE DISTANCE =	148.94
DT WALL =	100	MED TRUCK SLE DIST =	148.51
DT W/OB =	50	HVY TRUCK SLE DIST =	147.72
HTH WALL =	0.0	*****	
OBS HTH =	35.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	10		
MEDIUM TRUCKS =	10	GRADE ADJUSTMENT =	0.00
HEAVY TRUCKS =	10	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.8	65.9	64.2	58.1	66.8	67.4
MEDIUM TRUCKS LEQ	58.9	57.4	51.0	49.5	57.9	58.2
HEAVY TRUCKS LEQ	59.5	58.1	49.0	50.3	58.6	58.8
VEHICULAR NOISE	68.9	67.1	64.5	59.3	67.8	68.4

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.9	67.1	64.5	59.3	67.8	68.4

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	77	243	769	2430

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.9	68.9
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.9	68.9
CNEL WITHOUT TOPO AND BARRIER =	68.4	68.4
MIT CNEL WITH TOPO AND BARRIER =	68.4	68.4
LDN WITHOUT TOPO AND BARRIER =	67.8	67.8
MIT LDN WITH TOPO AND BARRIER =	67.8	67.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 5TH FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT = 33,600 PK HR VOL = 3,360
 SPEED = 45
 PK HR % = 10
 CTL DIST = 150
 DIST N/F = 75 AUTO SLE DISTANCE = 151.47
 DT WALL = 100 MED TRUCK SLE DIST = 150.91
 DT W/OB = 50 HVY TRUCK SLE DIST = 149.87
 HTH WALL = 0.0 *****
 OBS HTH = 45.0
 AMBIENT = 0.0
 ROADWAY VIEW: LF ANGLE = -90
 RT ANGLE = 90
 DF ANGLE = 180

SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)

AUTOMOBILES = 10
 MEDIUM TRUCKS = 10 GRADE ADJUSTMENT = 0.00
 HEAVY TRUCKS = 10 (ADJUSTMENT TO HEAVY TRUCKS)
 BARRIER = 0 (0=WALL, 1=BERM)
 PAD EL = 100.0 EL AUTOMOBILES = 102.0
 ROAD EL = 100.0 EL MEDIUM TRUCKS = 104.0
 GRADE = 0.1 % EL HEAVY TRUCKS = 108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.8	65.9	64.1	58.1	66.7	67.3
MEDIUM TRUCKS LEQ	58.8	57.3	51.0	49.4	57.9	58.1
HEAVY TRUCKS LEQ	59.4	58.0	49.0	50.2	58.6	58.7
VEHICULAR NOISE	68.8	67.0	64.4	59.2	67.8	68.3

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.8	67.0	64.4	59.2	67.8	68.3

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	76	239	756	2391

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.8	68.8
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.8	68.8
CNEL WITHOUT TOPO AND BARRIER =	68.3	68.3
MIT CNEL WITH TOPO AND BARRIER =	68.3	68.3
LDN WITHOUT TOPO AND BARRIER =	67.8	67.8
MIT LDN WITH TOPO AND BARRIER =	67.8	67.8

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 6TH FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,600	PK HR VOL =	3,360
SPEED =	45		
PK HR % =	10		
CTL DIST=	150		
DIST N/F=	75	AUTO SLE DISTANCE =	154.61
DT WALL=	100	MED TRUCK SLE DIST=	153.93
DT W/OB=	50	HVY TRUCK SLE DIST=	152.65
HTH WALL=	0.0	*****	
OBS HTH=	55.0		
AMBIENT=	0.0		
ROADWAY VIEW:	LF ANGLE=	-90	
	RT ANGLE=	90	
	DF ANGLE=	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	10		
MEDIUM TRUCKS =	10	GRADE ADJUSTMENT=	0.00
HEAVY TRUCKS =	10	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS=	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.7	65.8	64.0	58.0	66.6	67.2
MEDIUM TRUCKS LEQ	58.7	57.2	50.9	49.3	57.8	58.0
HEAVY TRUCKS LEQ	59.3	57.9	48.9	50.1	58.5	58.6
VEHICULAR NOISE	68.7	66.9	64.4	59.1	67.7	68.2

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.7	66.9	64.4	59.1	67.7	68.2

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	74	234	741	2343

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.7	68.7
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.7	68.7
CNEL WITHOUT TOPO AND BARRIER =	68.2	68.2
MIT CNEL WITH TOPO AND BARRIER =	68.2	68.2
LDN WITHOUT TOPO AND BARRIER =	67.7	67.7
MIT LDN WITH TOPO AND BARRIER =	67.7	67.7

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 7TH FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,600	PK HR VOL =	3,360
SPEED =	45		
PK HR % =	10		
CTL DIST =	150		
DIST N/F =	75	AUTO SLE DISTANCE =	158.31
DT WALL =	100	MED TRUCK SLE DIST =	157.53
DT W/OB =	50	HVY TRUCK SLE DIST =	156.02
HTH WALL =	0.0	*****	
OBS HTH =	65.0		
AMBIENT =	0.0		
ROADWAY VIEW:		LF ANGLE =	-90
		RT ANGLE =	90
		DF ANGLE =	180
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	10		
MEDIUM TRUCKS =	10	GRADE ADJUSTMENT =	0.00
HEAVY TRUCKS =	10	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.6	65.7	63.9	57.9	66.5	67.1
MEDIUM TRUCKS LEQ	58.6	57.1	50.8	49.2	57.7	57.9
HEAVY TRUCKS LEQ	59.2	57.8	48.8	50.0	58.4	58.5
VEHICULAR NOISE	68.6	66.8	64.2	59.0	67.6	68.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.6	66.8	64.2	59.0	67.6	68.1

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	72	229	724	2289

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.6	68.6
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.6	*****
CNEL WITHOUT TOPO AND BARRIER =	68.1	68.1
MIT CNEL WITH TOPO AND BARRIER =	68.1	*****
LDN WITHOUT TOPO AND BARRIER =	67.6	67.6
MIT LDN WITH TOPO AND BARRIER =	67.6	*****

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 8TH FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,600	PK HR VOL =	3,360
SPEED =	45		
PK HR % =	10		
CTL DIST=	150		
DIST N/F=	75	AUTO SLE DISTANCE =	162.55
DT WALL=	100	MED TRUCK SLE DIST=	161.66
DT W/OB=	50	HVY TRUCK SLE DIST=	159.94
HTH WALL=	0.0	*****	
OBS HTH=	75.0		
AMBIENT=	0.0		
ROADWAY VIEW:	LF ANGLE=	-90	
	RT ANGLE=	90	
	DF ANGLE=	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	10		
MEDIUM TRUCKS =	10	GRADE ADJUSTMENT=	0.00
HEAVY TRUCKS =	10	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS=	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.5	65.6	63.8	57.7	66.4	67.0
MEDIUM TRUCKS LEQ	58.5	57.0	50.7	49.1	57.6	57.8
HEAVY TRUCKS LEQ	59.1	57.7	48.7	49.9	58.3	58.4
VEHICULAR NOISE	68.5	66.7	64.1	58.9	67.5	68.0

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.5	66.7	64.1	58.9	67.5	68.0

NOISE CONTOUR (FT)

DAYTIME LEQ	70 dBA	65 dBA	60 dBA	55 dBA
	71	223	705	2230

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.5	68.5
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.5	***** 68.5
CNEL WITHOUT TOPO AND BARRIER =	68.0	68.0
MIT CNEL WITH TOPO AND BARRIER =	68.0	***** 68.0
LDN WITHOUT TOPO AND BARRIER =	67.5	67.5
MIT LDN WITH TOPO AND BARRIER =	67.5	***** 67.5

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 9TH FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,600	PK HR VOL =	3,360
SPEED =	45		
PK HR % =	10		
CTL DIST =	150		
DIST N/F =	75	AUTO SLE DISTANCE =	167.28
DT WALL =	100	MED TRUCK SLE DIST =	166.30
DT W/OB =	50	HVY TRUCK SLE DIST =	164.38
HTH WALL =	0.0	*****	
OBS HTH =	85.0		
AMBIENT =	0.0		
ROADWAY VIEW:	LF ANGLE =	-90	
	RT ANGLE =	90	
	DF ANGLE =	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	10		
MEDIUM TRUCKS =	10	GRADE ADJUSTMENT =	0.00
HEAVY TRUCKS =	10	(ADJUSTMENT TO HEAVY TRUCKS)	
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS =	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.3	65.4	63.7	57.6	66.2	66.9
MEDIUM TRUCKS LEQ	58.4	56.9	50.5	49.0	57.5	57.7
HEAVY TRUCKS LEQ	59.0	57.6	48.6	49.8	58.2	58.3
VEHICULAR NOISE	68.4	66.6	64.0	58.8	67.3	67.9

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.4	66.6	64.0	58.8	67.3	67.9

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	69	217	685	2167

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.4	68.4
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.4	68.4
CNEL WITHOUT TOPO AND BARRIER =	67.9	67.9
MIT CNEL WITH TOPO AND BARRIER =	67.9	67.9
LDN WITHOUT TOPO AND BARRIER =	67.3	67.3
MIT LDN WITH TOPO AND BARRIER =	67.3	67.3

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-2011-02
 ROADWAY: HARBOR BLVD DATE: 11-May-11
 LOCATION: 10TH FLOOR HARBOR BLVD HOTEL BY: M. DICKERSON

NOISE INPUT DATA

ADT =	33,600	PK HR VOL =	3,360
SPEED =	45		
PK HR % =	10		
CTL DIST=	150		
DIST N/F=	75	AUTO SLE DISTANCE =	172.46
DT WALL=	100	MED TRUCK SLE DIST=	171.39
DT W/OB=	50	HVY TRUCK SLE DIST=	169.30
HTH WALL=	0.0	*****	
OBS HTH=	95.0		
AMBIENT=	0.0		
ROADWAY VIEW:	LF ANGLE=	-90	
	RT ANGLE=	90	
	DF ANGLE=	180	
SITE CONDITIONS (10=HARD SITE, 15=SOFT SITE)			
AUTOMOBILES =	10	GRADE ADJUSTMENT=	0.00
MEDIUM TRUCKS =	10	(ADJUSTMENT TO HEAVY TRUCKS)	
HEAVY TRUCKS =	10		
BARRIER =	0 (0=WALL, 1=BERM)		
PAD EL =	100.0	EL AUTOMOBILES =	102.0
ROAD EL =	100.0	EL MEDIUM TRUCKS=	104.0
GRADE =	0.1 %	EL HEAVY TRUCKS =	108.0

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCKS	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES LEQ	67.2	65.3	63.5	57.5	66.1	66.7
MEDIUM TRUCKS LEQ	58.3	56.8	50.4	48.9	57.3	57.6
HEAVY TRUCKS LEQ	58.9	57.5	48.4	49.7	58.0	58.2
VEHICULAR NOISE	68.3	66.5	63.9	58.6	67.2	67.7

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
VEHICULAR NOISE	68.3	66.5	63.9	58.6	67.2	67.7

NOISE CONTOUR (FT)

	70 dBA	65 dBA	60 dBA	55 dBA
DAYTIME LEQ	66	210	665	2102

	W/O AMBIENT	W/ AMBIENT
PK HR LEQ WITHOUT TOPO OR BARRIER =	68.3	68.3
MIT PK HR LEQ WITH TOPO AND BARRIER =	68.3	68.3
CNEL WITHOUT TOPO AND BARRIER =	67.7	67.7
MIT CNEL WITH TOPO AND BARRIER =	67.7	67.7
LDN WITHOUT TOPO AND BARRIER =	67.2	67.2
MIT LDN WITH TOPO AND BARRIER =	67.2	67.2

Appendix E

Traffic Data

**TABLE 3
Project Trip Generation**

Proposed Land Uses				Peak Hour						Daily
Land Use	ITE Code	Quantity	Units ¹	AM			PM			
				In	Out	Total	In	Out	Total	
Hotel	310	769	RM	261	169	430	238	215	453	6,283
Quality Restaurant	931	34,000	TSF	17	11	28	171	84	255	3,058
Less Internal Capture (35%)				-6	-4	-10	-60	-29	-89	-1,070
Less Pass-By (25%)				-3	-2	-5	-28	-14	-42	-497
Sub-Total (Quality Restaurant)				8	5	13	83	41	124	1,491
Gross Trip generation (Entire Site)				278	180	458	409	299	708	9,341
Net Trip Generation (Entire Site)				269	174	443	321	256	577	7,774

Note: In order to develop a worst-case future traffic analysis, existing trip generation credit will **not** be taken at the project driveways or any of the study area intersections. The existing land use trip generation table listed above is included for informational purposes only. Trip generation for future conditions will be consistent with the proposed land use trip generation gross and net totals listed above.

¹ RM = Rooms
TSF = Thousand Square Feet

Appendix F

Stationary Noise Calculations

NOISE BARRIER CALCULATIONS - BASED UPON FHWA - RD-77-108

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-11-02
 SOURCE: LOADING DOCKS DATE: 09-May-11
 LOCATION: EAST PROPERTY LINE BY: B. Estrada

OBS DIST= 50.8
 DT WALL= 40.8
 DT W/OB= 10.0
 HTH WALL= 8.0 *****
 BARRIER = 0.0 (0=WALL, 1=BERM)
 OBS HTH= 5.0
 NOISE HTH= 8.0 BARRIER+
 OBS EL = 0.0 TOPO SHIELDING = -10.10
 NOISE EL = 0.0 NOISE HTH EL= 0.0
 DROP-OFF= 20.0 20 = 6 dBA PER DOUBLING OF DISTANCE)
 COFF

NOISE LEVELS (dBA)

	DIST (FT)	Leq	Lmax	L2	L8	L25	L50
REF LEVEL	6	66.3	84.0	78.5	68.0	61.5	58.5
PROJ LEVE:	50.8	47.7	65.4	59.9	49.4	42.9	39.9
SHIELDING	50.8	-10.1	-10.1	-10.1	-10.1	-10.1	-10.1
ADJ LEVEL	50.8	37.6	55.3	49.8	39.3	32.8	29.8

NOISE BARRIER CALCULATIONS - BASED UPON FHWA - RD-77-108

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-11-02
 SOURCE: PARKING STRUCTURE DATE: 09-May-11
 LOCATION: SOUTH PROPERTY LINE BY: B. Estrada

OBS DIST= 185.0
 DT WALL= 185.0
 DT W/OB= 0.0
 HTH WALL= 0.0 *****
 BARRIER = 0.0 (0=WALL, 1=BERM)
 OBS HTH= 5.0
 NOISE HTH= 30.0 BARRIER+
 OBS EL = 0.0 TOPO SHIELDING = 0.00
 NOISE EL = 0.0 NOISE HTH EL= 0.0
 DROP-OFF= 10.0 (10 = 3 dBA PER DOUBLING OF DISTANCE)
 COFF

NOISE LEVELS (dBA)							
	DIST (FT)	Leq	Lmax	L2	L8	L25	L50
REF LEVEL	10	59.0	70.9	64.4	61.9	59.8	57.6
PROJ LEVE	185	46.3	58.2	51.7	49.2	47.1	44.9
SHIELDING	185	0.0	0.0	0.0	0.0	0.0	0.0
ADJ LEVEL	185	46.3	58.2	51.7	49.2	47.1	44.9

NOISE BARRIER CALCULATIONS - BASED UPON FHWA - RD-77-108

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-11-02
 SOURCE: OUTDOOR POOL AREA DATE: 09-May-11
 LOCATION: EAST PROPERTY LINE BY: B. Estrada

OBS DIST= 87.0
 DT WALL= 77.0
 DT W/OB= 10.0
 HTH WALL= 8.0 *****
 BARRIER = 0.0 (0=WALL, 1=BERM)
 OBS HTH= 5.0
 NOISE HTH= 4.0 BARRIER+
 OBS EL = 0.0 TOPO SHIELDING = -20.00
 NOISE EL = 70.0 NOISE HTH EL= 0.0
 DROP-OFF= 20.0 (20= 6 dBA PER DOUBLING OF DISTANCE)
 COFF

NOISE LEVELS (dBA)

	DIST (FT)	Leq	Lmax	L2	L8	L25	L50
REF LEVEL	10	62.1	71.7	66.6	64.8	62.6	61.4
PROJ LEVE:	87	43.3	52.9	47.8	46.0	43.8	42.6
SHIELDING	87	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
ADJ LEVEL	87	23.3	32.9	27.8	26.0	23.8	22.6

NOISE BARRIER CALCULATIONS - BASED UPON FHWA - RD-77-108

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-11-02
 SOURCE: LOADING DOCKS DATE: 09-May-11
 LOCATION: SOUTH PROPERTY LINE BY: B. Estrada

OBS DIST= 150.0
 DT WALL= 150.0
 DT W/OB= 0.0
 HTH WALL= 0.0 *****
 BARRIER = 0.0 (0=WALL, 1=BERM)
 OBS HTH= 5.0
 NOISE HTH= 8.0 BARRIER+
 OBS EL = 0.0 TOPO SHIELDING = 0.00
 NOISE EL = 0.0 NOISE HTH EL= 0.0
 DROP-OFF= 20.0 20= 6 dBA PER DOUBLING OF DISTANCE)
 COFF

NOISE LEVELS (dBA)

	DIST (FT)	Leq	Lmax	L2	L8	L25	L50
REF LEVEL	6	66.3	84.0	78.5	68.0	61.5	58.5
PROJ LEVE	150	38.3	56.0	50.5	40.0	33.5	30.5
SHIELDING	150	0.0	0.0	0.0	0.0	0.0	0.0
ADJ LEVEL	150	38.3	56.0	50.5	40.0	33.5	30.5

NOISE BARRIER CALCULATIONS - BASED UPON FHWA - RD-77-108

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-11-02
 SOURCE: PARKING STRUCTURE DATE: 09-May-11
 LOCATION: EAST PROPERTY LINE BY: B. Estrada

OBS DIST= 32.0
 DT WALL= 22.0
 DT W/OB= 10.0
 HTH WALL= 8.0 *****
 BARRIER = 0.0 (0=WALL, 1=BERM)
 OBS HTH= 5.0
 NOISE HTH= 30.0 BARRIER+
 OBS EL = 0.0 TOPO SHIELDING = -11.20
 NOISE EL = 0.0 NOISE HTH EL= 0.0
 DROP-OFF= 10.0 (10 = 3 dBA PER DOUBLING OF DISTANCE)
 COFF

NOISE LEVELS (dBA)

	DIST (FT)	Leq	Lmax	L2	L8	L25	L50
REF LEVEL	10	59.0	70.9	64.4	61.9	59.8	57.6
PROJ LEVE	32	53.9	65.8	59.3	56.8	54.7	52.5
SHIELDING	32	-11.2	-11.2	-11.2	-11.2	-11.2	-11.2
ADJ LEVEL	32	42.7	54.6	48.1	45.6	43.5	41.3

NOISE BARRIER CALCULATIONS - BASED UPON FHWA - RD-77-108

PROJECT: SITE "C" HOTEL AND RESTAURANT, CITY OF GG JOB #: 0762-11-02
 SOURCE: OUTDOOR POOL AREA DATE: 09-May-11
 LOCATION: SOUTH PROPERTY LINE BY: B. Estrada

OBS DIST= 200.0
 DT WALL= 200.0
 DT W/OB= 0.0
 HTH WALL= 0.0 *****
 BARRIER = 0.0 (0=WALL, 1=BERM)
 OBS HTH= 5.0
 NOISE HTH= 4.0 BARRIER+
 OBS EL = 0.0 TOPO SHIELDING = -20.00
 NOISE EL = 70.0 NOISE HTH EL= 0.0
 DROP-OFF= 20.0 (20 = 6 dBA PER DOUBLING OF DISTANCE)
 COFF

NOISE LEVELS (dBA)							
	DIST (FT)	Leq	Lmax	L2	L8	L25	L50
REF LEVEL	10	62.1	71.7	66.6	64.8	62.6	61.4
PROJ LEVE	200	36.1	45.7	40.6	38.8	36.6	35.4
SHIELDING	200	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
ADJ LEVEL	200	16.1	25.7	20.6	18.8	16.6	15.4

[0762-11-02] - NOISE LEVEL ADDITION (dBA)
[South Property Line - Day] - [Stationary Noise Sources]

Leq

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	38.3	6,760.8
Parking Structure	42.7	18,620.9
Outdoor Pool Area	16.1	40.7
Ambient	56.7	467,735.1
Combined Noise Level (dBA)	56.9	493,157.6

Lmax

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	56.0	398,107.2
Parking Structure	54.6	288,403.2
Outdoor Pool Area	25.7	371.5
Ambient	70.0	10,000,000.0
Combined Noise Level (dBA)	70.3	10,686,881.9

L2

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	50.5	112,201.8
Parking Structure	48.1	64,565.4
Outdoor Pool Area	20.6	114.8
Ambient	64.8	3,019,951.7
Combined Noise Level (dBA)	65.0	3,196,833.8

L8

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	40.0	10,000.0
Parking Structure	45.6	36,307.8
Outdoor Pool Area	18.8	75.9
Ambient	61.3	1,348,962.9
Combined Noise Level (dBA)	61.4	1,395,346.5

L25

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	33.5	2,238.7
Parking Structure	43.5	22,387.2
Outdoor Pool Area	16.6	45.7
Ambient	57.2	524,807.5
Combined Noise Level (dBA)	57.4	549,479.1

L50

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	30.5	1,122.0
Parking Structure	41.3	13,489.6
Outdoor Pool Area	15.4	34.7
Ambient	53.0	199,526.2
Combined Noise Level (dBA)	53.3	214,172.6

[0762-11-02] - NOISE LEVEL ADDITION (dBA)
[South Property Line - Night] - [Stationary Noise Sources]

Leq

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	38.3	6,760.8
Parking Structure	42.7	18,620.9
Outdoor Pool Area	16.1	40.7
Ambient	50.2	104,712.9
Combined Noise Level (dBA)	51.1	130,135.3

Lmax

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	56.0	398,107.2
Parking Structure	54.6	288,403.2
Outdoor Pool Area	25.7	371.5
Ambient	64.0	2,511,886.4
Combined Noise Level (dBA)	65.0	3,198,768.3

L2

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	50.5	112,201.8
Parking Structure	48.1	64,565.4
Outdoor Pool Area	20.6	114.8
Ambient	63.0	1,995,262.3
Combined Noise Level (dBA)	63.4	2,172,144.4

L8

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	40.0	10,000.0
Parking Structure	45.6	36,307.8
Outdoor Pool Area	18.8	75.9
Ambient	56.7	467,735.1
Combined Noise Level (dBA)	57.1	514,118.8

L25

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	33.5	2,238.7
Parking Structure	43.5	22,387.2
Outdoor Pool Area	16.6	45.7
Ambient	52.3	169,824.4
Combined Noise Level (dBA)	52.9	194,496.0

L50

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	30.5	1,122.0
Parking Structure	41.3	13,489.6
Outdoor Pool Area	15.4	34.7
Ambient	49.2	83,176.4
Combined Noise Level (dBA)	49.9	97,822.7

[0762-11-02] - NOISE LEVEL ADDITION (dBA)
[Eastern Residential Area-Day] - [Stationary Noise Sources]

Leq

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	37.6	5,754.4
Parking Structure	46.3	42,658.0
Outdoor Pool Area	23.3	213.8
Ambient	49.4	87,096.4
Combined Noise Level (dBA) =	51.3	135,722.5

Lmax

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	55.3	338,844.2
Parking Structure	58.2	660,693.4
Outdoor Pool Area	32.9	1,949.8
Ambient	74.9	30,902,954.3
Combined Noise Level (dBA) =	75.0	31,904,441.8

L2

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	49.8	95,499.3
Parking Structure	51.7	147,910.8
Outdoor Pool Area	27.8	602.6
Ambient	54.8	301,995.2
Combined Noise Level (dBA) =	57.4	546,007.8

L8

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	39.3	8,511.4
Parking Structure	49.2	83,176.4
Outdoor Pool Area	26.0	398.1
Ambient	53.0	199,526.2
Combined Noise Level (dBA) =	54.6	291,612.1

L25

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	32.8	1,905.5
Parking Structure	47.1	51,286.1
Outdoor Pool Area	23.8	239.9
Ambient	49.6	91,201.1
Combined Noise Level (dBA) =	51.6	144,632.6

L50

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	29.8	955.0
Parking Structure	44.9	30,903.0
Outdoor Pool Area	22.6	182.0
Ambient	47.6	57,544.0
Combined Noise Level (dBA) =	49.5	89,583.9

[0762-11-02] - NOISE LEVEL ADDITION (dBA)
[Eastern Residential Area-Night] - [Stationary Noise Sources]

Leq

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	37.6	5,754.4
Parking Structure	46.3	42,658.0
Outdoor Pool Area	23.3	213.8
Ambient	45.4	34,673.7
Combined Noise Level (dBA) =	49.2	83,299.8

Lmax

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	55.3	338,844.2
Parking Structure	58.2	660,693.4
Outdoor Pool Area	32.9	1,949.8
Ambient	62.8	1,905,460.7
Combined Noise Level (dBA) =	64.6	2,906,948.2

L2

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	49.8	95,499.3
Parking Structure	51.7	147,910.8
Outdoor Pool Area	27.8	602.6
Ambient	52.4	173,780.1
Combined Noise Level (dBA) =	56.2	417,792.7

L8

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	39.3	8,511.4
Parking Structure	49.2	83,176.4
Outdoor Pool Area	26.0	398.1
Ambient	49.6	91,201.1
Combined Noise Level (dBA) =	52.6	183,286.9

L25

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	32.8	1,905.5
Parking Structure	47.1	51,286.1
Outdoor Pool Area	23.8	239.9
Ambient	48.1	64,565.4
Combined Noise Level (dBA) =	50.7	117,996.9

L50

Source	Noise Level (dBA)	10 ⁿ dBA/10
Loading Docks	29.8	955.0
Parking Structure	44.9	30,903.0
Outdoor Pool Area	22.6	182.0
Ambient	44.5	28,183.8
Combined Noise Level (dBA) =	47.8	60,223.7

Appendix G

Construction Noise Calculations

