RESOLUTION NO. 2014-045

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ROHNERT PARK CALIFORNIA APPROVING A MITIGATED NEGATIVE DECLARATION FOR MODIFICATIONS TO THE WILFRED/DOWDELL SPECIFIC PLAN AND APPROVAL OF A DEVELOPMENT AREA PLAN AND CONDITIONAL USE PERMIT FOR AMY'S KITCHEN RESTAURANT IN VILLAGE SOUTH OF THE WILFRED/DOWDELL SPECIFIC PLAN

WHEREAS, the applicant, Mark Rudolph, CFO for Amy's Kitchen, has submitted a Conditional Use Permit and Development Area Plan for a fast food restaurant with a drive-thru located on property at the corner of Redwood Drive and Golf Course Drive West in Village South of the Wilfred/Dowdell Specific Plan (APN 045-075-002 and 003) and requested corresponding amendments to the Wilfred/Dowdell Specific Plan (the "Project"); and

WHEREAS, Planning Application No. PL2013-0019UP was processed in the time and manner prescribed by State and local law; and

WHEREAS, an Initial Study was prepared and on the basis of that study, it was determined that the approval of the Project would not have a significant adverse effect on the environment with implementation of mitigation measures, and a Mitigated Negative Declaration (MND) was prepared by a Consultant and circulated for a 30 day period for public review from February 28, 2014 to March 31, 2014, a Notice of Intent was filed with the County Clerk and published in the Community Voice for a 30 day review period; and

WHEREAS, pursuant to California State Laws and the City of Rohnert Park Municipal Code (RPMC), a public hearing notice for the Project was mailed to all property owners within a 300 foot radius of the subject property and to all agencies and interested parties as required by California State Planning Law, and a public hearing notice was published in the Community Voice for a minimum of 10 days prior to the first public hearing; and

WHEREAS, on May 13, 2014, the City Council reviewed Planning Application No PL2013-019UP during a scheduled public meeting at which time interested persons had an opportunity to testify either in support of or opposition to the Project; and

WHEREAS, at the May 13, 2014, City Council meeting, upon hearing and considering all testimony and arguments, if any, of all persons desiring to be heard, the City Council considered all facts relating to the Project;

WHEREAS, the members of the City Council, using their independent judgment, reviewed the Project and all evidence in the record related to such requests, including the staff report, public testimony, and all evidence presented both orally and in writing.

WHEREAS, at the May 13, 2014 public meeting the City Council of the City of Rohnert Park reviewed and considered the information contained in the Initial Study and Mitigated Negative Declaration for the Project, which is attached to this resolution as **Exhibit A**: and the

Mitigation Monitoring and Reporting Program (MMRP) for the Project, which is attached to this Resolution as **Exhibit B**, and Exhibits A and B are incorporated herein by this reference; and

WHEREAS, Section 21000, *et. Seq.*, of the Public Resources Code and Section 15000, *et. Seq.,* of Title 14 of the California Code of Regulations (the "CEQA Guidelines"), which govern the preparation, content and processing of Negative Declarations, have been fully implemented in the preparation of the Mitigated Negative Declaration.

NOW, THEREFORE, BE IT RESOLVED that City Council of the City of Rohnert Park makes the following findings, determinations, declarations and orders with respect to the Mitigated Negative Declaration for the proposed Project:

Section 1. Findings.

1. All of the recitals set forth above are true, correct and supported by substantial evidence in the record; and are incorporated herein.

2. The City Council has independently reviewed, analyzed and considered the Mitigated Negative Declaration and all written documentation and public comments prior to making a decision on the proposed Project; and

3. The Mitigated Negative Declaration reflects the lead agency's independent judgment and analysis and accurately identifies all potentially significant environmental impacts.

4. An Initial Study and Mitigated Negative Declaration were prepared for the Project demonstrating that all potentially significant adverse environmental impacts associated with the Project will be reduced to less-than-significant levels with implementation of the mitigation measures identified in the Mitigated Negative Declaration (and included in the MMRP), and on the basis of substantial evidence in the whole record, there is no substantial evidence that the Project, as mitigated, will have a significant effect on the environment.

5. The monitoring and reporting of the mitigation measures identified for the Project will be conducted in accordance with the MMRP and the MMRP will be incorporated into conditions of approval for the Project.

6. The Mitigated Negative Declaration was prepared, publicized, circulated and reviewed incompliance with the provisions of CEQA Guidelines.

7. The Mitigated Negative Declaration constitutes an adequate, accurate, objective and complete Mitigated Negative Declaration in compliance with all legal standards.

8. The documents and other materials, including without limitation staff reports, memoranda, maps, letters and minutes of all relevant meetings, which constitute

and administrative record of proceedings upon which the Council's resolution is based are located at the City of Rohnert Park, City Clerk, 130 Avram Ave., Rohnert Park, CA 94928. The custodian of records is the City Clerk.

Section 2. Adoption of Initial Study/Mitigated Negative Declaration. Having made all of the foregoing findings, the Council hereby finds and determines that approval of the Project would not result in any significant effects on the environment with implementation of mitigation measures identified in the Mitigated Negative Declaration. The City Council hereby approves and adopts the Mitigated Negative Declaration and Initial Study set forth in **Exhibit A** and the Mitigation Monitoring and Reporting Program set forth in **Exhibit B**. The Council hereby directs the filing of a Notice of Determination with the County Clerk.

DULY AND REGULARLY ADOPTED this 13th day of May, 2014.

CITY OF ROHNERT PARK

Mayor

ATTEST:

City Clerk

BELFORTE: ABSENT MACKENZIE: AYE STAFFORD: AYE AHANOTU: AYE CALLINAN: AYE

AYES: (4) NOES: (0) ABSENT: (1) ABSTAIN: (0)

EXHIBIT A

Mitigated Negative Declaration

EXHIBIT B

MITIGATION MONITORING AND REPORTING PROGRAM

EXHIBIT A

Proposed

MITIGATED NEGATIVE DECLARATION

In accordance with the California Environmental Quality Act, the City of Rohnert Park has prepared an Initial Study to determine whether the following project may have a significant adverse effect on the environment. On the basis of that study, the City of Rohnert Park finds that the proposed project will not have a significant adverse effect on the environment with implementation of mitigation measures. Thus, the City proposes to adopt this Mitigated Negative Declaration.

PROJECT TITLE:

Amy's Kitchen Restaurant

LEAD AGENCY:

City of Rohnert Park
130 Avram Avenue
Rohnert Park, CA 94928-3126

CONTACT:

Marilyn Ponton, AICP
Interim Development Services Director
City of Rohnert Park, (707) 588-2231
mponton@rpcity.org

PROJECT LOCATION: The project site is located on a 2.35 acre parcel at the southwest corner of Redwood Drive and Golf Course Drive West in the Village South area of the Wilfred/Dowdell Specific Plan in the City of Rohnert Park, Sonoma County, California. Please refer to Figures 1, 2, and 3.

PROJECT DESCRIPTION: The project proposes to construct a 3,998 square-foot Amy's Kitchen Restaurant with a drive-thru and 2,104 square-foot outdoor seating area on a 2.35-acre parcel within Village South of the Wilfred/Dowdell Specific Plan (WDSP). The project will also include an approximately 369 square-foot refuse and dry storage building. The restaurant building will include a 900 square-foot customer seating area with seating for 72 guests. The remainder of the building will be kitchen area, storage, and restrooms. There will be two outdoor eating areas that will accommodate 76 diners; one at the northwest corner of the building and the other on the south side of the building. The floor area ratio (FAR) will be 0.05 and building coverage approximately 5%.

The exterior of the building will be a combination of stucco, structural steel and glass for a very contemporary look. The sloped roof of the building will be corten steel planted with grass. There will also be a round metal water tower that will collect water from the roof and use it for irrigation. Building height to the peak of the sloped roof will be 22.5 feet. The water storage tank will be constructed of metal with a height of approximately 25.5 feet. A low plaster wall will surround the outdoor eating areas and a wood trellis will be provided on top of the wall on the northerly eating areas at the northwest side of the restaurant. The trash enclosure and storage building will have stucco walls, metal doors and a standing seam metal roof with solar panels covering the roof. A low screen wall will screen the water service equipment on the Golf Course Drive West street frontage. A steel trellis roof with solar panels will be placed over a portion of the customer drive-thru area on the east side of the building.

The Specific Plan requires that the applicant submit a Sign Program for the project (Section 5.6.1). The signage submittal for the project will be under a separate permit. The preliminary signage concept includes wall signs, monument signs, and a painted water tower.

Street access to the project will be provided from Golf Course Drive West and Redwood Drive. Both driveways will permit a right turn into the project and a right turn out of the project. Circulation is designed to facilitate access into the remainder of Village South when that area develops. Pedestrian path-of-travel will be provided to Redwood Drive and Golf course Drive West and across the parking lot to the refuse and dry storage building. There will be a total of 68 parking spaces including five (5) compact spaces and four (4) handicap stalls. All of the parking stalls will be 90° and the typical stall will be 9 feet wide by 19 feet deep. For the safety of customers using the parking lot there will be no bumper stops. Six (6) bicycle parking racks will be located on the west side of the building.

Bio-swales will be located along Golf Course Drive West, Redwood Drive and interior landscape areas to conform to the requirement that site drainage flow through a vegetated swale. They will also provide storage for site drainage during heavy periods of rain. Native-like grasses and shrubs of varying heights, textures and colors will be used. All of the trees will be 24 inch box size for maximum impact. The parking lot and drive-thru will be screened by a two foot landscape berm. The outdoor eating areas will be paved with decomposed granite which will allow percolation of rain water. For shade in the summer months, trees will be planted in the outdoor eating areas and one tree will be provided for every four parking spaces as required by the Zoning Ordinance. Recycled water will be used for irrigation. The proposed water storage tank will collect rainwater from the roof of the building and store it for use during the warmer months. The project will conform with the standards for parking lot landscaping in Municipal Code Section 17.16.100. The requirement is one tree for every four (4) parking spaces and no more than six (6) consecutive parking spaces should be allowed in any row of parking without a tree well or tree well finger.

The WDSP requires setbacks for the street frontages and the rear yard of the site. The Redwood Drive yard requirement is thirty (30) feet, Golf Course Drive West is 20 feet, and there is no rear yard requirement since the project backs up to land in the Specific Plan area that will be developed in the future. The landscape setback along Golf Course Drive West exceeds twenty (20) feet to the back of the sidewalk on that street. Along Redwood Drive the setback varies from twenty (20) feet to thirty (30) feet and is considered to be substantially in conformance.

Parking lot lighting will consist of pole lights with low voltage LED lights. Sconce lights will be located on the building for security lighting around the building. The lighting will conform to Municipal Code Chapter 17.12.050 Lighting and Glare Standards.

The proposed project includes a Specific Plan Amendment to allow for development to proceed incrementally on each separate parcel within the WDSP and to allow for a second drive-thru restaurant within the WDSP area.

AMY'S KITCHEN RESTAURANT
INITIAL STUDY

PROJECT TITLE:	Amy's Kitchen Restaurant
LEAD AGENCY:	City of Rohnert Park Development Services 130 Avram Avenue Rohnert Park, CA 94928-2486
CONTACT PERSON:	Marilyn Ponton, AICP Interim Development Services Director (707) 588-2231
PROJECT LOCATION:	58 Golf Course Drive West Rohnert Park, CA Assessor's Parcel Numbers: 045-075-002 and 045-075-003 See Figures 1, 2, and 3
PROJECT APPLICANT:	City of Rohnert Park 130 Avram Avenue Rohnert Park, CA 94928-2486
GENERAL PLAN:	Commercial R
ZONING:	Specific Plan (S-P)
EXISTING LAND USE:	Vacant land
PROJECT SUMMARY	The project proposes to construct a 3,998 square-foot Amy's Kitchen Restaurant with a drive-thru and 2,104 square-foot outdoor seating area on a 2.35-acre parcel within Village South of the Wilfred/Dowdell Specific Plan (see Figures 4 and 5). The project will also include an approximately 369 square-foot refuse and dry storage building. The total floor area ratio (FAR) will be 0.05. The restaurant building height will be 22.5 feet at the peak of the sloped roof. Access to the site will be provided from Redwood Drive and Golf Course Drive West. Pedestrian access to the site will be provided via sidewalks along Redwood Drive and Golf Course Drive West, as well as within the parking lot. A total of 68 parking spaces and 6 bicycle parking spaces will be provided on the site. Approximately 35 percent of the site will be landscaped using native-like grasses, shrubs, and trees. The parking lot and drive-thru will be screened by a 2-foot landscape berm and one tree will be provided per four parking spaces within the parking lot. Trees will also be planted in the outdoor eating areas to provide shade. Recycled water will be used for irrigation. Bio-swales will be located along Golf Course Drive West, Redwood Drive, and interior landscape areas.

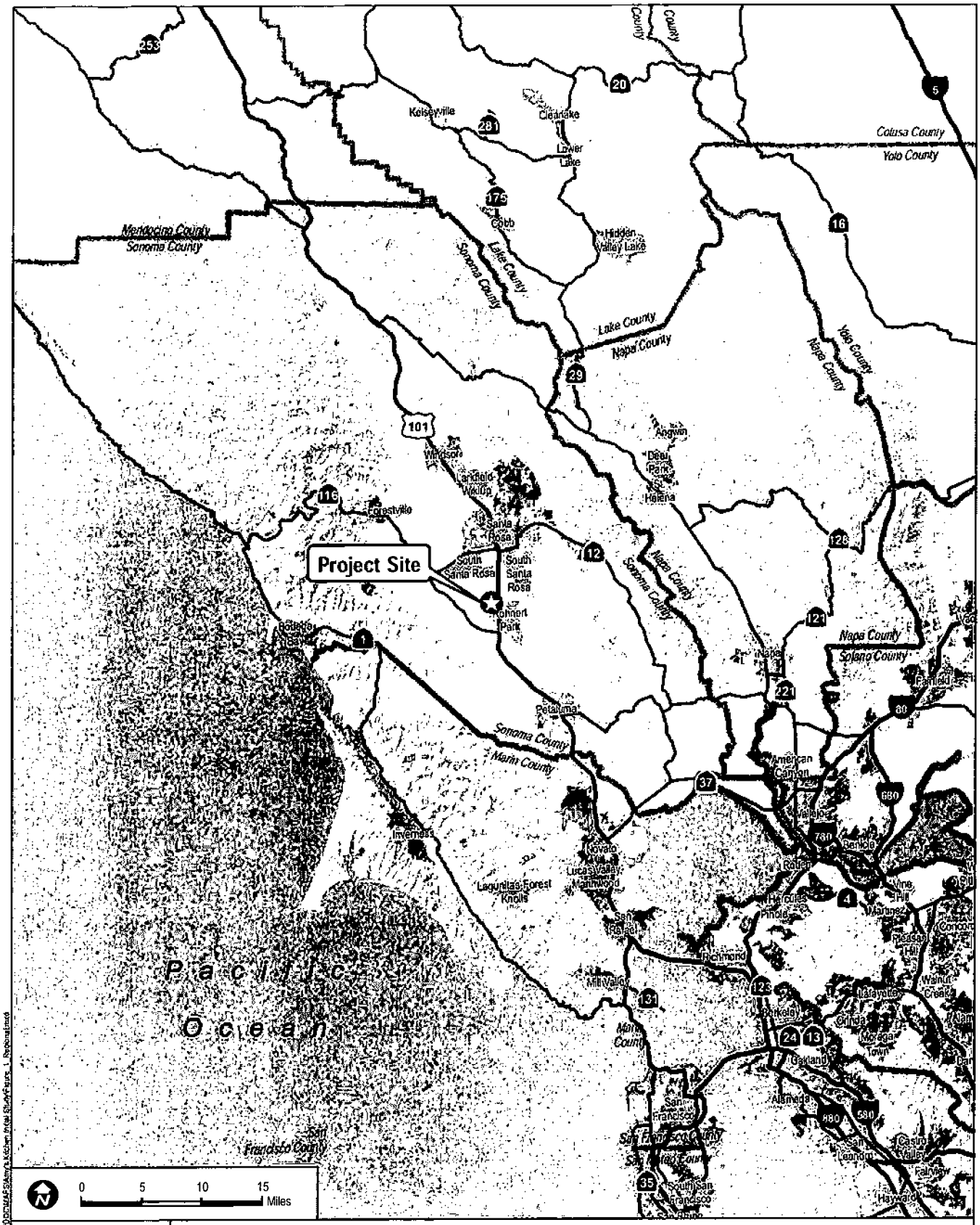

FIGURE 1

Regional Map

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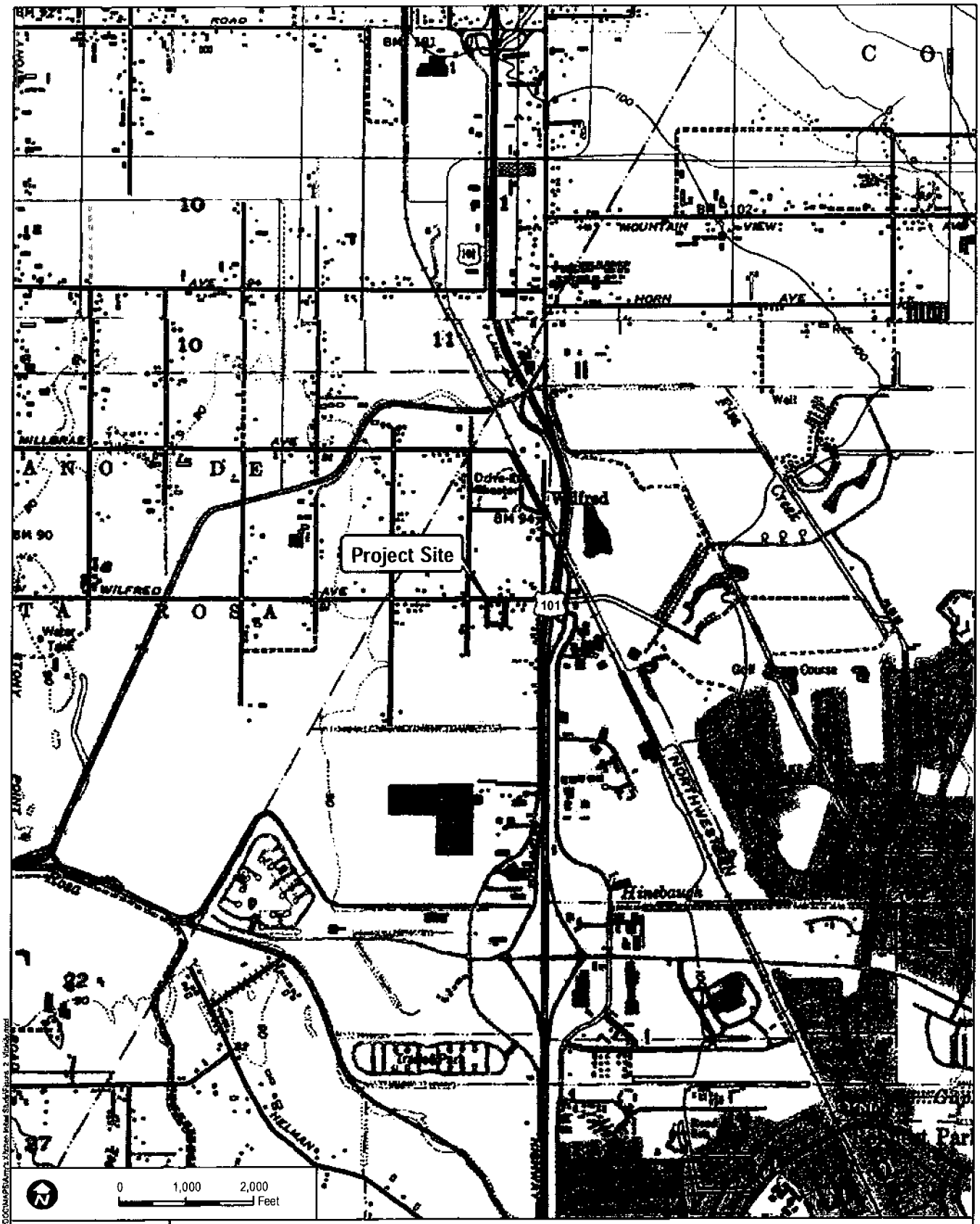
AMY'S KITCHEN RESTAURANT INITIAL STUDY



SOURCE: USGS 7 5 Minute Series Cotati Quadrangle

FIGURE 2
Vicinity Map

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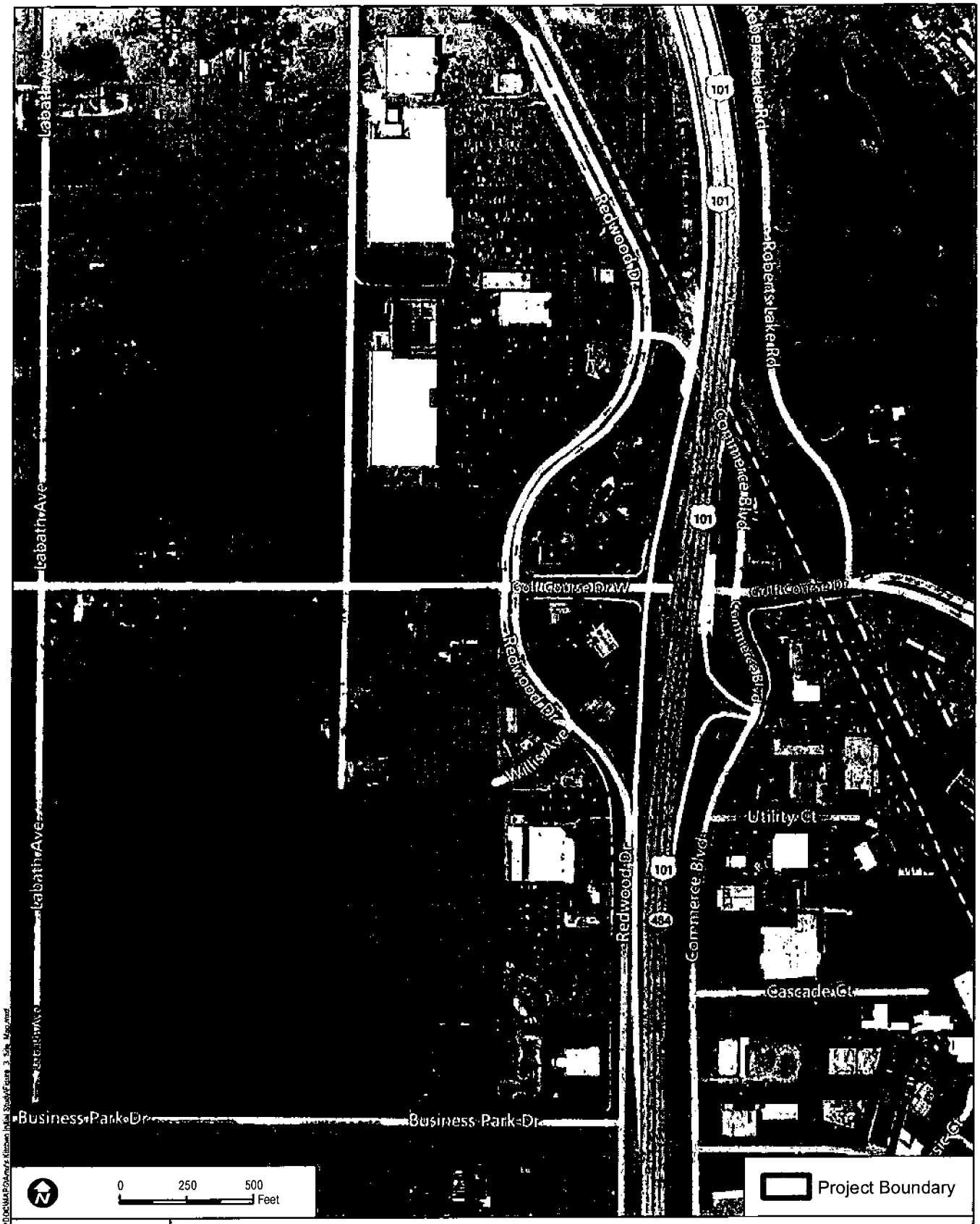
AMY'S KITCHEN RESTAURANT INITIAL STUDY

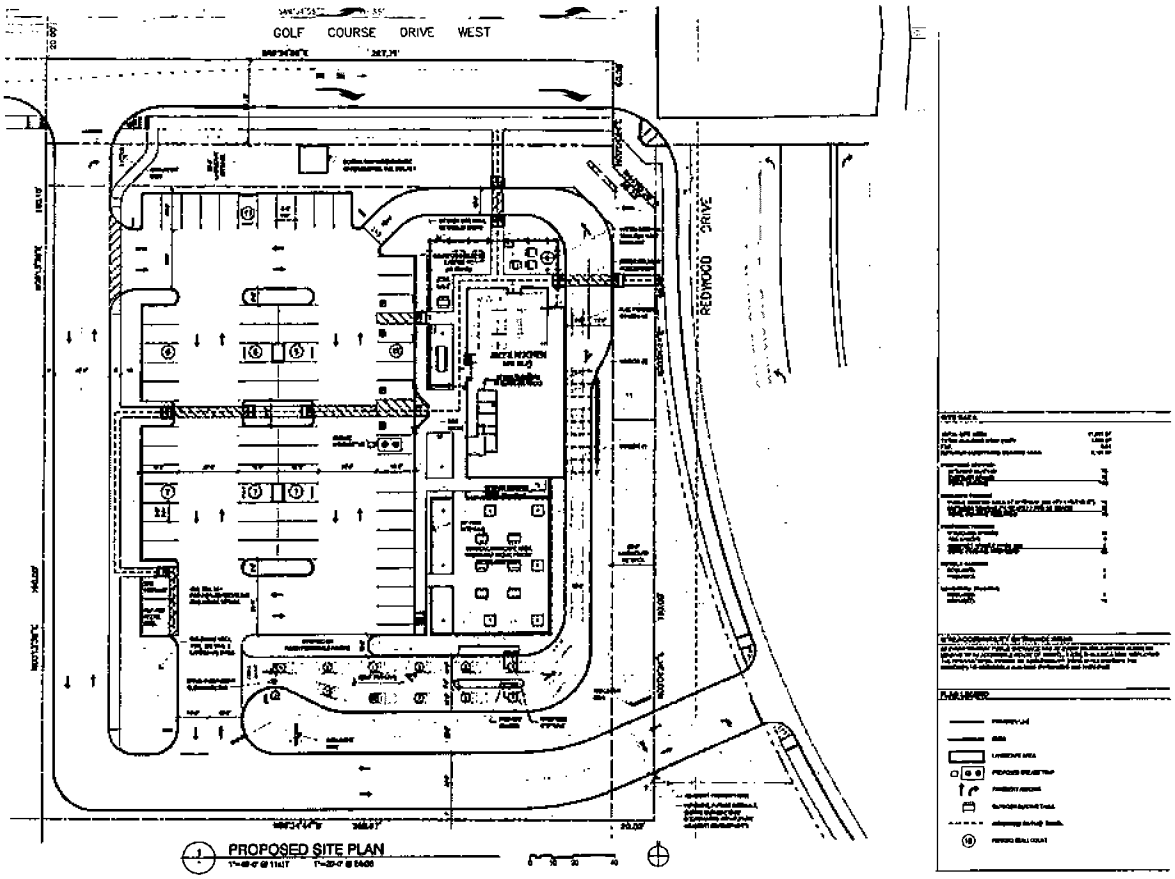


SOURCE: Bing 2014

FIGURE 3
Site Map

7390

AMY'S KITCHEN RESTAURANT INITIAL STUDY



SOURCE: TRACHTENBERG ARCHITECTS

FIGURE 4

Site Plan

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AMY'S KITCHEN RESTAURANT INITIAL STUDY

4 OVERALL PERSPECTIVE FROM SOUTH-EAST CORNER

2 PERSPECTIVE OF SOUTH-WEST CORNER

3 PERSPECTIVE OF NORTH-EAST CORNER

1 PERSPECTIVE OF NORTH-WEST CORNER

SOURCE: TRACHTENBERG ARCHITECTS

FIGURE 5

Renderings

7390

AMY'S KITCHEN RESTAURANT INITIAL STUDY

PROJECT LOCATION

The project site is located at the southwest corner of Redwood Drive and Golf Course Drive West in the Village South area of the Wilfred/Dowdell Specific Plan in the City of Rohnert Park, Sonoma County, California. Please refer to Figures 1, 2, and 3.

PROJECT SITE CHARACTERISTICS

The project site, located on Golf Course Drive West in the City of Rohnert Park, comprises approximately 2.35 acres. The entire site is currently vacant. Until summer of 2013, there were buildings on the southern parcel, including a single family residence and associated out buildings. These structures and foundations were removed in summer 2013 and the voids were filled with aggregate material. Topography onsite is generally flat. The site is characterized by fallow agricultural fields, former building sites, and several trees.

SURROUNDING LAND USES AND SETTING

The project site is located between existing commercial and business development along Redwood Drive to the east, and agricultural fields and rural residential uses to the west. Fallow, mowed agricultural fields are located to the south and west of the site, as well as north of the site across Business Park Drive. A large commercial development with Home Depot, Walmart, and several other businesses is located north of the site along Redwood Drive.

BACKGROUND DOCUMENTS AND PLANS

Wilfred/Dowdell Specific Plan

On September 23, 2008, the City Council adopted the Wilfred/Dowdell Specific Plan (WDSP). The Specific Plan covers a 24.77 acre site divided into Village North and Village South. Village South is 20.19 acre site southerly of Golf Course Drive West and westerly of Redwood Drive.

In accordance with the City of Rohnert Park Zoning Code 17.06. Article VIII, the purpose of a Specific Plan Zoning District is to ensure that large developing areas of the city are master planned and compatible with the surrounding community, as well as to provide the city with flexibility to regulate design phases and allow variations form the zoning ordinance standards as appropriate. The WDSP provides the specific development standards for the 2.35-acre project site.

The project site is included in Village South of the WDSP, which is envisioned as a commercial shopping center with a mix of compatible uses. Village South allows for a total of 246,253 square feet of building area The Specific Plan requires a Conditional Use Permit for a fast food restaurant with a drive-thru.

WDSP Environmental Impact Report

The WDSP Environmental Impact Report (EIR) (SCH # 1998072036) was certified by the City of Rohnert Park City Council on August 20, 2008.

The WDSP and EIR are available for review upon request from the City of Rohnert Park Planning Department. Additional sources consulted in preparing the Initial Study are listed in the *References* section of this document.

PROPOSED PROJECT CHARACTERISTICS

As previously stated, the project proposes to construct an Amy's Kitchen Restaurant with a drive-thru as follows (see Figures 4 and 5):

Square Footage – The restaurant building will be 3,998 square feet and the exterior courtyard seating area will be 2,104 square feet. The project will also include an approximately 369 square-foot refuse and dry storage building.

Floor Plan – The restaurant building will include customer seating area of 900 square feet with seating 72 guests. The remainder of the building will be kitchen area, storage and restrooms. There will be two outdoor eating areas for customers with a total area of 2,104 square feet. One will be at the northwest corner of the building and the other on the south side of the building. Outdoor seating will accommodate 76 diners. The small refuse and recycling building will be broken up into the refuse area and a small dry storage area. The FAR will be 0.05 and building coverage approximately 5%.

Architecture – As shown on Figure 5, the exterior of the building will be a combination of stucco, structural steel and glass for a very contemporary look. The sloped roof of the building will be corten steel planted with grass. There will also be a round metal water tower that will collect water from the roof and use it for irrigation. Building height to the peak of the sloped roof will be 22.5 feet. The water storage tank will be constructed of metal with a height of approximately 25.5 feet. A low plaster wall will surround the outdoor eating areas and a wood trellis will be provided on top of the wall on the northerly eating areas at the northwest side of the restaurant. The trash enclosure and storage building will have stucco walls, metal doors and a standing seam metal roof with solar panels covering the roof. A low screen wall will screen the water service equipment on the Golf Course Drive West street frontage. A steel trellis roof with solar panels will be placed over a portion of the customer drive-thru area on the east side of the building.

Signage – The Specific Plan requires that the applicant submit a Sign Program for the project (Section 5.6.1). The signage submittal for the project will be under a separate permit. The preliminary signage concept include wall signs, monument signs, and a painted water tower.

Circulation – As shown on Figure 4, street access to the project will be provided from Golf Course Drive West and Redwood Drive. Both driveways will permit a right turn into the project and a right turn out of the project. Circulation is designed to facilitate access into the remainder of Village South when that area develops. Pedestrian path-of-travel will be provided to Redwood Drive and Golf course Drive West and across the parking lot to the refuse and dry storage building.

Parking – There will be a total of 68 parking spaces including five (5) compact spaces and four (4) handicap stalls. All of the parking stalls will be 90° and the typical stall will be 9 feet wide

by 19 feet deep. For the safety of customers using the parking lot there will be no bumper stops. Six (6) bicycle parking racks will be located on the west side of the building.

Landscaping - Bio-swales will be located along Golf Course Drive West, Redwood Drive and interior landscape areas to conform to the requirement that site drainage flow through a vegetated swale. They will also provide storage for site drainage during heavy periods of rain. Native-like grasses and shrubs of varying heights, textures and colors will be used. All of the trees will be 24 inch box size for maximum impact. The parking lot and drive-thru will be screened by a two foot landscape berm. The outdoor eating areas will be paved with decomposed granite which will allow percolation of rain water. For shade in the summer months, trees will be planted in the outdoor eating areas and one tree will be provided for every four parking spaces as required by the Zoning Ordinance. Recycled water will be used for irrigation. The proposed water storage tank will collect rainwater from the roof of the building and store it for use during the warmer months. The project will conform with the standards for parking lot landscaping in Municipal Code Section 17.16.100. The requirement is one tree for every four (4) parking spaces and no more than six (6) consecutive parking spaces should be allowed in any row of parking without a tree well or tree well finger.

The WDSP requires setbacks for the street frontages and the rear yard of the site. The Redwood Drive yard requirement is thirty (30) feet, Golf Course Drive West is 20 feet, and there is no rear yard requirement since the project backs up to land in the WDSP area that will be developed in the future. The landscape setback along Golf Course Drive West exceeds twenty (20) feet to the back of the sidewalk on that street. Along Redwood Drive the setback varies from twenty (20) feet to thirty (30) feet.

Lighting - Parking lot lighting will consist of pole lights with low voltage LED lights. Sconce lights will be located on the building for security lighting around the building. The lighting will conform to Municipal Code Chapter 17.12.050 Lighting and Glare Standards.

Specific Plan Amendment

Section 3.1.1 "Develop the project site as a unified development." would be deleted to allow for the development of the proposed project on two (2) of the parcels in Village South, separate from the development of the remainder of Village South.

Section 3.3 Permitted Land Uses, 3.3.2 "One drive-through restaurant." Would be modified to allow for more than one drive-through restaurant.

ENTITLEMENTS AND REQUIRED APPROVALS

The project would require the following approvals:

U.S. Fish and Wildlife Service

- Section 7 consultation

City of Rohnert Park

- Grading Permit
- Development Area Plan

- Specific Plan Amendment
- Conditional Use Permit

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" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards& Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance
		☒ None with Mitigation

DETERMINATION: (To be completed by the Lead Agency)

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 proposed 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: Marilyn Ponton Date: February 28, 2014

Printed Name: Marilyn Ponton, AICP
Interim Development Services Director

For: City of Rohnert Park

EVALUATION OF ENVIRONMENTAL IMPACTS:

I. AESTHETICS	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

a., b. The project site is not visible from, or within the viewshed of, any designated or locally important scenic vista, and is not visible from any state scenic highway or locally designated scenic corridor, according to the City's General Plan (City of Rohnert Park, 2000). The site is currently vacant and there are no scenic resources or unique natural features on the site. The project site is located within Village South of the WDSP. As noted in the WDSP EIR, application of the Specific Plan Standards and Guidelines at the Architectural and Design Review stage will ensure impacts to scenic views are less than significant. Therefore, the proposed project would have no impacts to scenic vistas, nor would it result in damage to scenic resources.

c. The project site is located at the edge of an urban area that contains a mix of regional commercial and business park uses. Because the project is included in the WDSP, development of the project site would be required to be consistent with Mitigation Measure AES-1 (Mitigation Measure 3.9-4 in the WDSP EIR). This measure would ensure that impacts to the visual character of the area remain less than significant by applying the City's design standards to future development projects. Development of the proposed restaurant would change the visual character of the site, as shown on Figure 5, but because the site does not provide substantial scenic value and the future development would be consistent with the nature of the surrounding area, the project would have a less than significant effect on visual character.

d. The project includes parking lot lighting that would consist of pole lights with low voltage LED lights. Sconce lights would be located on the building for security lighting. Since the project is included in the WDSP, development of the project site would be required to be consistent with Mitigation Measure AES-2 (Mitigation Measure 3.9-3 in the WDSP EIR). This measure would require that all lighting conform to the Lighting and Glare Standards in Municipal Code Chapter 17.12.050. This mitigation measure would ensure that the addition of light or glare associated with the proposed project would be less than significant.

Mitigation Measures

Mitigation Measures AES-1 (WDSP EIR Mitigation Measure 3.9-4): Implementation of polices in the General Plan EIR will be required as part of the project design. The polices to mitigate visual impacts on the City's Westside including planting and setbacks that ensure the edge of the urban uses results in a "soft" view will reduce these impacts to a less than significant level.

Mitigation Measures AES-2 (WDSP EIR Mitigation Measure 3.9-3): The Project shall comply with municipal code section 17.12.050 that requires that exterior lighting be designed to avoid spillover lighting onto adjacent properties.

II. AGRICULTURE AND FORESTRY RESOURCES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) 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?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a. - e. The proposed project site is located at the edge of an existing urban area, adjacent to existing commercial uses to the east and rural residential uses to the west. The project site is designated Commercial in the City's General Plan and zoned Specific Plan (S-P). The site is not identified as prime farmland, unique farmland, or farmland of statewide importance; the project site is not under a Williamson Act contract; and the project site does not support any forestry resources. The site is not planned for or used for any agricultural or forestry purposes and the proposed project would not result in the conversion of any agricultural or forest land, conflict with any agricultural use, or conflict with a Williamson Act contract.

Mitigation Measures

No mitigation measures are necessary.

III. AIR QUALITY	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
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)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

The following discussion is based on the Air Quality and Greenhouse Gas Emissions Analysis prepared by Dudek for the proposed project (Dudek 2014). The analysis is included in Appendix A.

a. - d. The project site is located within the San Francisco Bay Area Air Basin, which is designated non-attainment for the federal 8-hour ozone standard. The area is in attainment or unclassified for all other federal standards. The area is designated non-attainment for state standards for 1-hour and 8-hour ozone, 24-hour small particulate matter (PM10), annual PM10, and annual respirable particulate matter (PM2.5).

To address the region's non-attainment status, the Bay Area Air Quality Management District (BAAQMD) adopted the Bay Area 2005 Ozone Strategy (BAAQMD 2006) and the Bay Area 2010 Clean Air Plan (BAAQMD 2010a). The 2010 Clean Air Plan provides "an integrated, multi-pollutant strategy to improve air quality, protect public health, and protect the climate." This strategy includes a number of control measures to be adopted or implemented to reduce emissions of ozone, PM, air toxics, and greenhouse gases.

The BAAQMD has adopted CEQA Guidelines (the 2010 BAAQMD Guidelines, BAAQMD 2010b) that establish air pollutant emission thresholds that identify whether a project would violate any applicable air quality standards or contribute substantially to an existing or projected air quality violation. The 2010 BAAQMD Guidelines also establish screening criteria based on the size of a project to determine whether detailed

modeling to estimate air pollutant emissions is necessary.

The proposed project, at 3,998 square feet, is well below the screening criteria for construction emissions (277,000 square feet) and operational criteria for pollutant emissions (6,000 square feet). In addition, the following Basic Construction Emission Control Measures would be included in the project design and implemented during construction, as required by BAAQMD. The inclusion of these measures is consistent with the WDSP and complies with Mitigation Measure 3.7-3 included in the WDSP EIR.

a. All active construction areas shall be watered at least two times per day.

b. All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or non-toxic soil stabilizers shall be applied to exposed non-paved surfaces.

c. All haul trucks transporting soil, sand, or other loose material offsite shall be covered and/or shall maintain at least two feet of freeboard.

d. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

e. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

f. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

g. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage regarding idling restrictions shall be provided for construction workers at all access points.

h. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

i. The prime construction contractor shall post a publicly visible sign with the telephone number and person to contact at the construction site and at the City of Rohnert Park or the regarding dust complaints. The prime construction contractor shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations

With implementation of the Basic Construction Emission Control Measures listed above, construction of the proposed project would have a less than significant impact related to air pollutant emissions, violations of air quality standards, and would not conflict with any applicable air quality plans.

As described previously, the proposed project size is below the screening criteria for

operational criteria air pollutant emissions. The air pollutant emissions during operation of the proposed project would have a less than significant impact to air quality and the potential for the region to experience violations of applicable air quality standards.

In addition, emissions of carbon monoxide (CO) from idling vehicles can create pockets of high CO concentrations, called "hot spots." These pockets can exceed the applicant state standards for CO. High CO concentrations can cause headaches, dizziness, and nausea and can contribute to chronic health conditions. At very high concentrations and/or with prolonged contact, CO exposure can be fatal. Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service and/or with extremely high traffic volumes. More specifically, CO hot-spots occur where there are many thousands of cars idling. Screening criteria included in the BAAQMD 2010 CEQA Guidelines are designed to identify potentially significant CO hot-spots. Those criteria indicate that project-related CO emissions would not cause a significant impact on air quality if the project does not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour (or 24,000 vehicles per hour in an area where air flow is limited, such as a tunnel or parking garage).

The Traffic Impact Study prepared by W-Trans for the proposed project found that three of the five signalized study intersections would operate at an acceptable LOS under future plus project conditions, while two intersections would operate at deficient LOS in the future with and without the project (W-Trans 2014). However, the project would only cause the delay at the two deficient intersections to increase by 0.5 seconds and 4.0 seconds, which is not considered significant. In addition, the traffic volumes at the study intersections would be far less than 44,000 vehicles per hour in the future with and without the project. Therefore, the project would not cause or contribute to a significant impact related to CO concentrations.

Further, as described in Section I.2 of the BAAQMD 2010 CEQA Guidelines, Thresholds of Significance, "by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards." Therefore, the thresholds of significance developed by the BAAQMD reflect the "emission levels for which a project's individual emissions would be cumulatively considerable." A project with emissions that are below the thresholds of significance would not make a considerable contribution to any cumulative impacts. As discussed above, the proposed project would have emissions that are below the applicable thresholds of significant; therefore, the project would make a less than significant contribution to cumulative air quality impacts.

e. As discussed in the WDSP EIR, there are no existing major sources of odors that would affect proposed residences in the project area and the proposed project would not be expected to create objectionable odors. Temporary odors could be generated by construction associated with the proposed project, but no odors would be generated by the project once completed. Odors are required by the BAAQMD to remain within the property boundary. Therefore, this impact is less than significant.

Mitigation Measures

No mitigation measures are necessary.

IV. BIOLOGICAL RESOURCES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

In August 2011, AECOM biologists prepared a Biological Resources Assessment (BRA) for the 24.77-acre Wilfred Dowdell Village Project, which included the 2.35-acre project site (AECOM 2011). In addition, AECOM prepared a Wetland Delineation and Preliminary Jurisdictional Determination for the Wilfred Dowdell Village Project, which the U.S. Army Corps of Engineers approved in December 2011 (USACE 2011). The northern portion of the project site is mapped as Non-Native Annual Grassland and includes an unvegetated swale along Golf Course Drive West (the northern boundary of the site). This unvegetated swale was removed as part of the widening of Golf Course Drive West and is no longer considered a part of the existing conditions of the project site. The southern portion of the project site, where the former residence and associated structures were located, is mapped as Developed/Disturbed and Landscaped Lands (AECOM 2011). These reports are included in Appendix B.

a., b. AECOM conducted a search of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) to create a list of special-status species and sensitive biological communities with potential to occur within the project area. AECOM staff also reviewed the special-status species lists created by the U.S. Fish and Wildlife Service (USFWS) and the California Native Plant Society (CNPS) inventory of special-status plants in the region. The resulting lists of special-status species and their habitat requirements were evaluated to determine the potential for these species to occur within the project site. A discussion of potential impacts to listed species is provided in the subsequent paragraphs.

Special-Status Plants

As discussed in the BRA prepared by AECOM and the WDSP EIR, most of the special-status plant species occurring in the region are not expected to occur on the project site due to lack of suitable habitat. However, since site-specific surveys of the project site were not conducted, the following special-status plant species identified in the WDSP EIR have potential to occur on the site: Sonoma sunshine, Dwarf downingia, Burke's goldfields, Legenere, and Sebastopol meadowfoam. Grading and construction activity on the project site could adversely impacts populations of these special-status plant species, resulting in a significant impact. However, implementation of Mitigation Measures BIO-1 through BIO-4 (WDSP EIR Mitigation Measures 3.4-3a though 3.4-3d), which require a pre-construction survey of the site and appropriate measures in the event a species is determined to occur on the site, would ensure that potential impacts to these plant species would remain less than significant.

Special-Status Wildlife

As discussed in the WDSP EIR and the BRA prepared by AECOM (2011), special-status wildlife species that could occur within the project area include the California tiger salamander (CTS) and various raptor species.

California Tiger Salamander

According to the WDSP EIR and BRA prepared by AECOM, the project site provides potential for occurrence as breeding habitat, but only marginal to no potential for occurrence as estivation and foraging habitat for CTS. The proposed project would result in the permanent loss of suitable upland habitat for CTS. As a result, the proposed project would be required to comply with the terms and conditions of incidental take permits issued by USFWS and CDFW. The project site occurs within an area subject to a 1 to 1 mitigation ratio for impacts to suitable CTS upland habitat; however, the final mitigation ratio is determined by USFWS through the Section 7 consultation process. In addition, the minimization measures from the Santa Rosa Plain Conservation Strategy (2005) would be implemented as part of the project. These measures include an on-site designated biologist, wildlife checks, and construction monitoring.

Conservation and minimization measures developed for the proposed project would reduce the effects of the project to levels that are not likely to jeopardize the continued existence of the listed CTS population. In addition, implementation of Mitigation Measures BIO-5 through BIO-7 (WDSP EIR Mitigation Measures BIO-3.4-4a through BIO-3.4-4c), which require formal consultation with USFWS, surveys, and compensation

for CTS habitat loss, would ensure that impacts to this species would remain less than significant.

Nesting Raptors

The trees within the project site could support nesting raptors and other migratory birds. Nesting birds are protected by the California Fish and Game Code and the federal Migratory Bird Treaty Act and disturbance of breeding or nesting would be a significant impact. Implementation of Mitigation Measures BIO-8 through BIO-10 (WDSP EIR Mitigation Measures BIO-3.4-6a through 3.4-6c), which require seasonal restrictions on tree removal and pre-construction surveys if trees are removed during the breeding season, would ensure that impacts to these species remain less than significant.

c. As described in the WDSP EIR and BRA prepared by AECOM in 2011, the greater Wilfred Dowdell Village Project area includes jurisdictional wetlands and waters; however, as shown on Exhibit 1-2 of the BRA (AECOM 2011), the only jurisdictional waters on the project site is the unvegetated swale along the northern edge of the site. As described previously, this swale was removed as part of the widening of Golf Course Drive West (formerly Wilfred Avenue) and is no longer part of the project site. Since no other potentially jurisdictional waters or wetlands exist on the site, no impact would occur as a result of the proposed project.

d. As described in response to a. and b. above, the proposed project would impact suitable upland habitat for CTS. As described in the WDSP EIR, excluding the loss of this habitat described above, the project site does not provide high quality habitat or resources to attract other wildlife species that might migrate onto or through the site, or use the site for wildlife nursery sites. As a result, the proposed project would have a less than significant impact on the movement of species or use of wildlife nursery sites.

e. There are several trees located on the project site; however none of the existing trees are regulated or protected by the City's Heritage Tree Preservation Ordinance. No other policies for the protection of biological resources apply to the project site. Therefore, no impacts would result from any conflict with policies, provisions or adopted plans protecting biological resources.

f. The project site is located within the area covered by the Santa Rosa Plain Conservation Strategy (USFWS 2005). The purpose of the Conservation Strategy is to create a long-term conservation program to mitigate potential adverse effects on listed species from future development on the Santa Rosa Plain. CTS is addressed by the Santa Rosa Plain Conservation Strategy. As terms and conditions of permits required from the Corps and CDFW, the project would be required to implement mitigation measures consistent with the Conservation Strategy and would therefore result in no conflict with the provisions of this adopted plan.

Mitigation Measures

Mitigation Measure BIO-1 (WDSP EIR Mitigation Measure 3.4-3a): A pre-construction survey of ruderal seasonal wetland habitat shall occur prior to, but no earlier than 30 days prior to the commencement of grading and/or construction activities. This survey shall be conducted within the blooming period of all five special-status plants identified as having the potential to

be present on the Project site. If one or more of these species is observed during the survey, then appropriate alternative measures should be executed.

Mitigation Measure BIO-2 (WDSP EIR Mitigation Measure 3.4-3b): If special-status plant species are determined to occur on the project site, they shall be avoided to the extent feasible. For those plants that cannot be avoided, the following mitigation measure shall be implemented.

1) All plants within the construction footprint (including staging areas) shall be transplanted to a mitigation site approved by CDFG and the USFWS.

2) Lost plant habitat shall be replaced at a ratio of two acres of replacement habitat for each acre of special- status plant habitat lost. The success of the transplantation program shall be evaluated to have been achieved if 80% or more of the transplanted plants have survived five years after transplantation.

3) Mitigation projects will be monitored annually for five years using success criteria developed in coordination with the CDFG and USFWS.

Mitigation Measure BIO-3 (WDSP EIR Mitigation Measure 3.4-3c): Where complete avoidance is not feasible, pre-construction surveys shall be conducted to flag the limits of areas where special-status plant species occur.

Mitigation Measure BIO-4 (WDSP EIR Mitigation Measure 3.4-3d): The City of Rohnert Park and the developer should establish an ongoing and aggressive weed abatement program to prevent the spread and establishment of exotic weeds along established habitat on the site or habitat subject to further invasion of seed stock resulting from grading and development activities.

Mitigation Measure BIO-5 (WDSP EIR Mitigation Measure 3.4-4a): A formal consultation should be initiated with the USFWS regarding the California Tiger Salamander (CTS). Based on the ensuing Biological Opinion provided by the USFWS as part of the consultation, further measures may be necessary by the USFWS before initiation of any grading and construction activities would be permitted to begin.

Mitigation Measure BIO-6 (WDSP EIR Mitigation Measure 3.4-4b): A CTS protocol survey could be one of the USFWS's recommendations, based on the consultation. CTS survey protocol guidelines appear in a publication produced by the USFWS (USFWS, 2004).

Mitigation Measure BIO-7 (WDSP EIR Mitigation Measure 3.4-3c): Any active CTS must not be disturbed. If CDFW determines that CTS habitat will be lost because of development, the developer/applicant shall provide compensation for habitat loss to be determined in consultation with the CDFW.

Mitigation Measure BIO-8 (WDSP EIR Mitigation Measure 3.4-6a): The applicant shall retain a qualified biologist , acceptable to the City to conduct nest surveys on the site and within 200 feet of its borders prior to construction or site preparation activities occurring during the nesting/breeding season raptor species (typically February through August). The surveys shall be conducted no earlier than 30 days prior to commencement of construction/restoration activities.

Mitigation Measure BIO-9 (WDSP EIR Mitigation Measure 3.4-6b): If active raptor nests are present in the construction zone or within 200 feet of these areas, a fence shall be erected at a minimum of 50 feet around the nest site and remain until the end of the nesting season or until the biologist deems necessary. This temporary buffer may be greater depending on the identification of the bird species and construction activity elements, as determined by the biologist.

Mitigation Measure BIO-10 (WDSP EIR Mitigation Measure 3.4-6c): If an active raptor nest is located on or adjacent to the project site, tree removal, grading, and other project-related disturbances shall be prohibited within 200 feet of the active raptor nest until the young have fledged. Prior to disturbance within 200 feet of an active raptor nest, the project developer shall retain a qualified biologist or ornithologist, acceptable to the City to confirm that the young have fledged. The biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure the safety of raptors at peril.

V. CULTURAL RESOURCES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

a. – d. As described in the WDSP EIR, no archaeological, historical, or Native American resources have been previously identified in the WDSP area, including the project site. It is unlikely that previously unknown cultural resources would be encountered during site grading for construction of the proposed project. However, to ensure that impacts to cultural resources remain less than significant, should any such resources be encountered during project grading and construction, Mitigation Measures CUL-1, CUL-2, and CUL-3 will be implemented. These mitigation measures are included in the WDSP EIR as Mitigation Measures 3.5-1, 3.5-2a, and 3.5-2b.

Mitigation Measures

Mitigation Measure CUL-1 (WDSP EIR Mitigation Measure 3.5-1): A cultural resources field survey of the Project site shall be performed prior to construction activities. All prehistoric and historic archaeological and historic architectural properties identified during the field survey

shall be recorded to State of California, Department of Parks and Recreation standards on 523 (DPR 523) series forms.

Mitigation Measure CUL-2 (WDSP EIR Mitigation Measure 3.5-2a): If any cultural resources are discovered during ground-disturbing activities, work in the immediate area shall stop and a qualified archaeologist brought in to evaluate the resource and to recommend further action, if necessary. Construction crews shall be directed by holder of the grading permit to be alert for cultural resources which could consist of, but not be limited to: artifact of stone, bone, wood, shell, or other materials; features, including hearths, structural remains, or dumps; areas of discolored soil indicating the location of fire pits, post molds, or living area surfaces.

Mitigation Measure CUL-3 (WDSP EIR Mitigation Measure 3.5-2b): In the event that human remains are discovered, all work in the area shall stop immediately, and the applicant shall contact the County Coroner. If the remains are determined to be of Native American origin, both the Native American Heritage Commission and any identified descendants shall be notified and recommendations for treatment solicited pursuant to CEQA Section 15064.59(e).

VI. GEOLOGY AND SOILS	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
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.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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 Table18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☒	☐	☐

VI. GEOLOGY AND SOILS	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

a. **Surface Fault Rupture**

As stated in the WDSP EIR, the project site could be subject to violent ground shaking from a major seismic event on the Healdsburg-Rodgers Creek fault. However, because the project site is not underlain by known traces of any potentially active fault, fault-line surface rupture would not be a hazard within the project site. Impacts related to fault rupture potential would be less than significant.

Groundshaking

As discussed in the WDSP EIR, it is apparent that the project site could be subjected to at least one major earthquake during the useful economic life of the proposed project. Resulting vibration from a major earthquake on the Healdsburg-Rodgers Creek fault could cause damage to buildings, roads, and infrastructure, and could cause ground failures such as liquefaction. The proposed project would be designed and constructed in accordance with all applicable buildings codes, which address seismic hazards and would reduce the potential for structure damage. However, since non-structural building elements could injure building occupants during an earthquake, this would be considered a significant impact. Because the project site is within the WDSP, the project would be required to implement Mitigation Measure GEO-1 (WDSP EIR Mitigation Measure 3.2-1), which requires building contents to be secured to the extent feasible. This would ensure impacts related to groundshaking are less than significant.

Liquefaction

According to the WDSP EIR, soils on the project site have a moderate to high potential for liquefaction. Therefore, impacts are significant. The proposed project would be required to comply with Mitigation Measure GEO-2 (WDSP EIR Mitigation Measure 3.2-2), which requires a detailed soils analysis for areas having a "high" liquefaction potential. This would ensure impacts due to liquefaction would be less than significant.

Landslides

No landslide deposits have been mapped within the WDSP area or in the immediate vicinity. The California Geological Survey slope stability map of southern Sonoma County categorizes the project area as an area of the greatest relative stability because there are no slopes steeper than 1 percent. Therefore, impacts would be less than significant.

b., c., d. As discussed in the WDSP EIR, the existence of expansive soils within the WDSP area makes it necessary to ensure the soils used for foundation support are sound. An acceptable degree of soil stability can be achieved by the required incorporation of soil treatment programs (e.g. grouting, compaction, drainage control, lime treatment) in the excavation and construction plans to address site-specific soil conditions. The site-specific analysis is necessary for areas where unsuitable conditions are suspected. To ensure that the future development at the project site is not adversely affected by unstable soil conditions, the project would be required to implement Mitigation Measure GEO-3 (WDSP EIR Mitigation Measure 3.2-3). Implementation of Mitigation Measure GEO-3 would ensure that impacts related to expansive soils would be less than significant.

e. No septic tanks or alternative wastewater disposal systems are proposed and the project would have no impact related to these types of wastewater disposal.

Mitigation Measures

Mitigation Measure GEO-1 (WDSP EIR Mitigation Measure 3.2-1): The contents of buildings in the proposed Project shall be secured to the extent feasible. All shelving shall be secured to structural elements of the floor, wall, or ceiling. Heavy display items and merchandise shall be placed on lower shelves and secured to building elements where possible. A certificate of occupancy shall not be issued until compliance with these requirements.

Mitigation Measure GEO-2 (WDSP EIR Mitigation Measure 3.2-2): A geotechnical study acceptable to the City shall be conducted by a California Certified Geologist prior to site development. This study shall evaluate liquefaction potential at the Project site prior to issuance of a grading permit. Recommendations shall be provided, as necessary, to prevent damage to Project facilities and compliance with these recommendations shall be required as a condition of development at the Project site. This impact will be less than significant because engineering techniques to mitigate for poor ground conditions are incorporated into building codes with which the Project will have to comply.

Mitigation Measure GEO-3 (WDSP EIR Mitigation Measure 3.2-3): A geotechnical study acceptable to the City shall be conducted to determine the location and extent of expansive soils at the Project site prior to issuance of a grading permit. The study will include recommendations regarding the treatment and/or remedy of onsite soils, and the structural design of foundations and underground utilities, and compliance with these recommendations shall be required as a condition of future development at the Project Site.

VII. GREENHOUSE GAS EMISSIONS	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The following discussion is based on the Air Quality and Greenhouse Gas Emissions Analysis prepared by Dudek for the proposed project (Dudek 2014). The analysis is included in Appendix A.

a., b. Greenhouse gas (GHG) emissions and climate change effects were not evaluated in the WDSP EIR. Climate change, which involves significant changes in global climate patterns, has been associated with an increase in the average temperature of the atmosphere near the Earth's surface, or global warming. This warming has been attributed to an accumulation of GHGs in the atmosphere. These GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. GHG emissions are typically measured in carbon dioxide equivalents (CO2e), which converts emissions of several types of GHGs into an equivalent amount of carbon dioxide based on the relative potential for each gas to contribute to climate change.

State and federal legislation has resulted in policies that define targets for reductions in GHG emissions. Climate change research and policy efforts are primarily concerned with GHG emissions related to human activity. In particular, California adopted the 2006 Global Warming Solutions Act (commonly referred to as AB 32), which established a statewide emission reduction target to ensure that GHG emissions in the year 2020 are equal to the statewide GHG emissions in 1990. The California Air Resources Board (ARB) 2008 Scoping Plan estimated that GHG emissions in the state would have to be reduced by approximately 29 percent from business-as-usual (BAU) levels in order to meet the GHG emissions reduction requirement.

The BAAQMD has adopted CEQA Guidelines (the 2010 BAAQMD Guidelines, BAAQMD 2010b) that identify the following GHG thresholds:

- For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy; or annual emissions less than 1,100 metric tons per year (MT/yr) of CO2e; or 4.6 MT CO2e/SP/yr (residents + employees). Land use development projects include residential, commercial, industrial, and public land uses and facilities.

The proposed project would construct a 3,998-square foot fast food restaurant. This is far less than the criteria for construction emissions, but larger than the BAAQMD screening criteria for operational GHG emissions. Therefore, operational GHG emissions were estimated using CalEEMod. The project includes the following

features that would reduce operational GHG emissions:

- The project would exceed Title 24 energy efficiency requirements by 15 percent, consistent with CALGreen Tier 1 requirements, as required by the City of Rohnert Park.
- The project would include onsite solar panels that would generate approximately 12,500 kWh of energy.
- The project would achieve a 20 percent reduction in indoor water use, consistent with CALGreen Tier 1 requirements.

The project's annual operational GHG emissions were estimated in CalEEMod to be 1,013.5 MTCO2e, which is below the BAAQMD threshold of 1,100 MTCO2e per year. Since the project's GHG emissions would remain below the applicable threshold of significance, the project would result in a less than significant contribution to climate change impacts and would not impede achievement of the state's GHG reduction goals.

Mitigation Measures

No mitigation measures are necessary.

VIII. HAZARDS AND HAZARDOUS MATERIALS	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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?	☐	☐	☐	☒
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 it create a significant hazard to the public or the environment?	☐	☐	☐	☒
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,	☐	☐	☐	☒

VIII. HAZARDS AND HAZARDOUS MATERIALS	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: would the project result in a safety hazard for people residing or working in the project area?				
g) Impair implementation of or 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?	☐	☐	☒	☐

a., b. The proposed project would construct a drive-thru restaurant within the WDSP in the City of Rohnert Park. In the operational condition, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. However, construction of the project could expose construction workers, the public, or the environment to hazardous materials through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used at the project site and transported to and from the site during construction. Accidental releases of small quantities of these substances could contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard. However, compliance federal, state, and City plans and requirements for hazardous materials would ensure impacts are less than significant.

c. The project would not create hazardous emissions or hazardous waste and would not handle hazardous materials or substances. There are no schools within 0.25 miles of the site. The project would have no impact related to exposure of the project site to hazards and hazardous materials.

d. As described in the WDSP EIR, a Phase I Environmental Site Assessment (ESA) of the project site was performed by MACTEC in August 2005. To prepare the ESA, a search of federal, state, and local regulatory databases was conducted for sites, within an approximately one-mile radius of the subject property, that are known to be chemical handlers, hazardous waste generators, or polluters. Results of the database search indicate that the proposed project site is not listed regulatory databases. Therefore, there would be no impacts related to the project being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5

e., f. The project would have no impact related to airport safety.

g. The project would not interfere with any adopted emergency or evacuation plans. Because the project site is located at the edge of current development, it would not hinder emergency services. The development of a new public safety facility is currently under consideration by the City. Construction of the public safety facility would reduce response times in the project area. Therefore, the project would have a less than significant impact related to implementation of emergency plans.

h. The City of Rohnert Park General Plan states that the potential for wildland fires varies within the City (City of Rohnert Park 2000). The project site and surrounding area is developed with small areas of vacant land. The project site is surrounded by vacant land and commercial and industrial development, and future development of the site is not expected to expose workers or the public to wildland fire. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures are necessary.

IX. HYDROLOGY AND WATER QUALITY	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
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 which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
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?	☐	☒	☐	☐
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 runoff in a manner which would result in flooding on- or off-site?	☐	☒	☐	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial	☐	☒	☐	☐

IX. HYDROLOGY AND WATER QUALITY	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: additional sources of polluted runoff?				
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

a. As previously discussed, the project would construct a drive-thru restaurant within Village South of the WDSP. The only expected discharge from the project site would be stormwater runoff generated by additional impervious surfaces. Effects of runoff are discussed below in subsection 'c' and 'e'. With the incorporation of stormwater detention features, stormwater runoff would not be expected to violate water quality standards. There are no waste discharge requirements established for the project site. Wastewater generated by the project site, once developed, would be treated by the Subregional System and the additional flows would not be expected to result in a violation of the system's waste discharge requirements.

Because development at the project site would be required to comply with regional or local regulations and policies prior to implementation, the effects on water quality would be less than significant.

b. The future construction of impervious surfaces on the project site would reduce infiltration to the water table. However, as discussed in the WDSP EIR, the project area is not considered a major or important recharge zone in the City because the surface soils consist of poorly drained Clear Lake clays that have low permeability. As described in the WDSP EIR, water for the proposed project would be supplied through the City's municipal water system, which is supplied by both municipal wells and the Sonoma County Water Agency (SCWA) as well as treated surface water from SCWA. The WDSP EIR determined that the project would have sufficient water supply from existing sources and would not deplete groundwater supply. Therefore, the proposed project would have a less than significant impact regarding groundwater supply or recharge.

c. Future development at the project site would replace the existing pattern of drainage with buildings, paved areas, landscaping, and storm drains. Development at the site could have adverse effects on downstream water quality through erosion, the transport of sediments and dissolved constituents entering the receiving waters, and increasing turbidity and contaminant load. Although the amount of surface alteration necessary to accommodate future development at the project site is not considered a significant change in itself, the alteration of topography raises issues of erosion potential and downstream deposition of soil particles. Even shallow cuts of less than a foot, or the process of placing fill for leveling or foundation support, have the potential to create erodible surfaces and slopes if the cuts and fills are not specifically designed to protect their surfaces from wind and water.

Erosion potential is low for almost all soils in the Rohnert Park area because of its flat terrain with a grade of less than 2 percent (City of Rohnert Park 2000). The formation of embankments or uneven topography, the effects of machinery, and the removal of vegetation can increase erosion rates. During the construction period, soils would be exposed to the erosive forces of wind and stormwater runoff. When denuded and excavated, soils would be subject to gullying under the influence of moderate to heavy rains if required preventive action is not taken. In addition, erosive conditions created during the grading period can persist into the operations period.

As discussed in the WDSP EIR, the risk of construction impacts regarding the potential to increase erosion of soil from the development of sites within the WDSP and subsequent deposition of particles in drainage ways, creeks, or wetlands would be significant. Because the project was included in the WDSP, it would also be required to implement Mitigation Measure HYDRO-1 (WDSP EIR Mitigation Measure 3.3-2a), which requires implementation of a site-specific storm water pollution prevention plan and compliance with state and local regulatory permit requirements regarding the non-point pollution source control of stormwater runoff through the application of BMPs. This would ensure that sedimentation impacts are reduced to a less than significant level.

d., e. As described above, site storm drainage patterns would be modified following development due to an increase in impermeable surface on the site. This would cause an increase in runoff from the site. As discussed in the WDSP EIR, since there is insufficient capacity in the existing Labath Creek channel under 10-year storm drainage conditions, additional flows could result in flooding along Labath Creek between Dowdell Avenue and the Hinebaugh Flood Control Channel.

Because the project was included in the WDSP, it would also be required to implement Mitigation Measure HYDRO-2 (WDSP EIR Mitigation Measure 3.3-1), which requires preparation of a site-specific hydrology and drainage study showing the increase in storm water runoff from the site and requires construction of a storm drain system in accordance with Sonoma County Water Agency Flood Control Design Criteria. This would ensure impacts related to on- or off-site flooding would be less than significant.

f. Increased runoff from the construction of impermeable surfaces on the project site could lower the quality of stormwater runoff and infiltrating groundwater. The major contributor of contaminants to runoff and infiltrating groundwater is the land surface

over which the water passes.

In developed areas, driveways, parking lots, sidewalks, streets and gutters are connected directly to storm drains that collect and guide stormwater runoff. Between rainstorms, materials accumulate on these surfaces from debris dropped or scattered by individuals, street sweepings, debris and other particulate matter washed into roadways from adjacent areas, wastes and dirt from construction and renovation or demolition, fecal droppings from animals, remnants of household refuse dropped during collection or scattered by animals or wind, oil and various residues contributed by automobiles, and fallout of air-borne particles.

If uncontrolled, the accumulation of urban pollutants could have a detrimental cumulative effect because overland flow from paved surfaces and landscaped areas carries many of the above-listed contaminants, thereby contributing to the deterioration of the quality of stormwater runoff and infiltrating groundwater. The eventual result would be the deterioration of water quality in downstream receiving waters.

The previous discussions of erosion and sedimentation control and storm-drainage system design provide documentation of the requirements to reduce turbidity and capacity effects. In addition, since the project is part of the WDSP, it would be required to implement Mitigation Measure HYDRO-3 (WDSP EIR Mitigation Measure 3.3-2b), which would ensure the construction of storm drainage improvements consistent with BMPs. This would ensure impacts to water quality are less than significant.

g. - j. Section 7.2, Drainage, Erosion, Stormwater, and Flooding of the city's General Plan and Panel Number 06097C0877E of FEMA's Flood Insurance Rate Maps for Sonoma County both place the WDSP and the project site outside the 500-year zone and the 100-year flood hazard area. There are no dams or levees in the vicinity of the project site. The project would not expose people or structures to significant loss related to flooding. The project site is physically removed from any large body of water and is not subject to inundation by seiche, tsunami, or mudflow. The project would have no impacts related to flooding or other water-related hazards.

Mitigation Measures

Mitigation Measure HYDRO-1: (WDSP EIR Mitigation Measure 3.3-2a): The Project developer shall develop and implement a site-specific storm water pollution prevention plan acceptable to the City that identifies best management practices for effectively reducing discharges of storm water containing sediment and construction wastes resulting from site construction activities. The applicant shall comply with all other requirements set forth in NPDES General Permit CAS000002.

Mitigation Measure HYDRO-2: (WDSP EIR Mitigation Measure 3.3-1): The Project developer shall prepare a site-specific hydrology and drainage study acceptable to the City showing the increase in storm water runoff that would result from development of the Project site. Based upon the results of this study, the developer shall design and construct a storm drain system in accordance with Sonoma County Water Agency Flood Control Design Criteria (latest revision), specific to the Project.

Mitigation Measure HYDRO-3: (WDSP EIR Mitigation Measure 3.3-2b): The developer shall design and construct storm drainage improvements to remove oil and grease from discharges from parking lots, including directing runoff to vegetated swales or areas, consistent with best management practices (BMPs).

X. LAND USE AND PLANNING	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a. The project site is located adjacent to urban uses to the east and rural residential uses to the west. Development of the proposed project would not physically divide an established community since access to all surrounding land uses would remain unchanged and the project would not otherwise divide a community. Therefore, the project would have no impact related to the physical division of an established community.

b. The project site General Plan Land Use Designation is Commercial R, which allows for restaurants. The project site is zoned Specific Plan (S-P). The project is consistent with the City's General Plan and Zoning Map; however, the project proposes to amend the WDSP to allow for incremental development and an additional drive-thru restaurant. With implementation of the proposed Specific Plan Amendment, impacts would be less than significant.

c. The project site is located within the area covered by the Santa Rosa Plain Conservation Strategy (USFWS, 2005). The purpose of the Conservation Strategy is to create a long-term conservation program to assist in the recovery of CTS and four listed plant species. Mitigation measures required as terms and conditions of permitting impacts to listed species and regulated habitats would be consistent with the Santa Rosa Plain Conservation Strategy, as discussed in *Section IV Biological Resources.* By complying with conditions of permitting and implementing mitigation measures contained in this document, the proposed project would be consistent with the Conservation Strategy and no impacts associated with inconsistency with the Conservation Strategy would occur.

Mitigation Measures

No mitigation measures are necessary.

XI. MINERAL RESOURCES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

a., b. There are no known mineral resources on the subject property and the site is not delineated on the General Plan as a mineral resource recovery site.

Mitigation Measures

No mitigation measures are necessary.

XII. NOISE	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a. Existing noise sources affecting the noise environment on the project site include traffic on nearby Highway 101 and Redwood Drive, local traffic on Golf Course Drive West, and noise generated by existing land uses in the area.

As discussed in the WDSP EIR, structures built within the WDSP area using typical construction methods would reduce the exterior noise levels from nearby roadways to an acceptable level for commercial land uses. The commercial uses on the site would therefore be compatible with the noise environment and impacts would be less than significant.

The WDSP EIR also evaluated impacts related to traffic generated noise associated with buildout of the WDSP. The EIR concluded that project generated traffic would not cause a substantial increase in noise. Although the proposed project would result in approximately 957 additional daily trips not considered in the WDSP EIR, this increase would not exceed the City's noise standards as established in the General Plan Noise Element (City of Rohnert Park 2000). Therefore, the proposed project would result in a less than significant noise impact.

b. Limited groundborne vibration may occur during project construction but would not occur during project operation. Groundborne vibration during construction would not create excessive disturbance to neighboring land uses and impacts from groundborne vibration would remain less than significant.

c. The proposed project site is located in an area primarily developed with commercial and business park uses, as well as rural residential uses. The potential for increases in vehicular traffic noise along the street network were analyzed in the WDSP EIR by comparing existing noise levels to future noise levels on street segments. The EIR concluded that traffic generated with buildout of the WDSP would not cause a substantial increase in noise. Although the proposed project would result in approximately 957 additional daily trips not considered in the WDSP EIR, this increase would not result in a substantial increase in noise levels since the project area is subject to a relatively high ambient noise level due to existing traffic in the area. Therefore, the project will have a less than significant impact on ambient noise levels.

d. As discussed in the WDSP EIR, construction within the WDSP would generate noise and would temporarily increase noise levels in the area. Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, timing, duration of each noise-generating activity, and the distance between construction noise sources and noise-sensitive receptors. The only sensitive receptors in the immediate area are two houses west of Dowdell Avenue.

Noise generated by construction would create a temporary noise level increase at the homes west of Dowdell Avenue. However, this significant impact would be reduced to a less than significant level provided that the standard noise control measures included in Mitigation Measure NOISE-1 (WDSP EIR Mitigation Measure 3.8-4) are implemented.

e., f. The project site is not located within an airport land use plan or in the vicinity of a private airstrip. The project will have no impact related to airport or airstrip traffic and associated noise.

Mitigation Measures

Mitigation Measure NOISE-1 (WDSP EIR Mitigation Measure 3.8-4): The Project shall comply with the City's Municipal Code, including hours of construction. All equipment shall be adequately muffled and properly maintained. Construction equipment noise levels shall be monitored to move, muffle and/or shield equipment to minimize noise impacts.

XIII. POPULATION AND HOUSING	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a. The project would involve construction of a 3,998 square-foot drive-thru restaurant on a site that is designated for commercial uses. The proposed project does not include a residential component and would not generate an increase to the population of the City. Therefore, the project would have no impact related to population growth.

b. - c. The site is currently vacant and the proposed project would not any housing units or people. Therefore, no impact would occur.

Mitigation Measures

No mitigation measures are necessary.

XIII. PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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				

XIII. PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
Fire protection?	☐	☒	☐	☐
Police protection?	☐	☒	☐	☐
Schools	☐	☐	☐	☒
Parks	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

a. *Fire and police protection*: The City of Rohnert Park Department of Public Safety provides police and fire protection services within the City. While the project itself would not result in increased population, the WDSP EIR concluded that development in the WDSP would contribute to the City's need for additional fire and police protection services, including a new fire station west of Highway 101. Funding for a new station would be funded by the Public Facilities Financing Plan (PFFP) fee, redevelopment funds, and development contributions. In addition, the WDSP concluded that an additional police officer would be needed as a result of the project and the project would be required to contribute to the purchase of equipment for the additional officer. Since the proposed project is within the WDSP, Mitigation Measures PUB-1 and PUB-2 (WDSP EIR Mitigation Measures 3.10-1 and 3.10-2) would be required for the proposed project. Implementation of these mitigation measures would reduce impacts to fire and police protection to less than significant.

Schools: The proposed project does not include a residential component and would not generate an increase to the student population of the City. Therefore, the project would result in no impacts to area schools.

Parks and other public facilities: Because the proposed project does not include any residential uses, it would not result in an increase in population. Therefore, demand on parks and other public facilities would be less than significant.

Mitigation Measures

Mitigation Measure PUB-1 (WDSP EIR Mitigation Measure 3.10-1): The Project will contribute to the need for additional public safety officers associated with growth of the City. As part of future development, a public safety station is identified in the stadium area specific plan and would also be funded by the Federated Indians of the Graton Rancheria as part of the proposed Casino as well as through capital improvements approved by the Redevelopment Agency and through the Public Facilities Financing Plan (PFFP). Development of the station would reduce the impact to less than significant.

Mitigation Measure PUB-2 (WDSP EIR Mitigation Measure 3.10-2): The Project applicant shall provide funds for the purchase of equipment needed to outfit the additional Public Safety Officer required as a result of Project development. The amount shall be determined and agreed upon by the Chief of Public Safety and the Finance Director of the City of Rohnert Park. In addition, as part of future development, a public safety station is identified in the stadium area specific plan area and would also be funded by the Graton Rancheria as part of the proposed Casino as well as through capital improvements approved by the Redevelopment Agency and through the PFFP. This funding would reduce the impact to less than significant.

XV. RECREATION	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
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?	☐	☐	☒	☐

a. – b. The proposed project would not result in an increase in population; therefore, demand on existing and planned recreational facilities would be less than significant.

Mitigation Measures

No mitigation measures are necessary.

XVI. TRANSPORTATION/TRAFFIC	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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	☐	☐	☒	☐

XVI. TRANSPORTATION/TRAFFIC	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: 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)?	☐	☐	☐	☒
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?	☐	☐	☐	☒

The following information is based on the Traffic Impact Study (TIS) prepared by W-Trans for the proposed project in February 2014 (W-Trans 2014). The TIS is included in Appendix C.

a., b. The TIS found that although the proposed project is within the WDSP, which was analyzed in the WDSP EIR, the proposed drive-thru restaurant would result in slightly higher trip generation than a retail use as was anticipated in the WDSP EIR. The proposed project is expected to generate an average of 1,091 trips per day, including 72 trips during the p.m. peak hour, based on the 3,998 square feet of restaurant use. The WDSP EIR assumed trip generation for the same square footage of retail would be 134 daily trips and 13 p.m. peak hours trips; therefore, the proposed project would generate 957 more daily trips and 59 more p.m. peak hour trips than was anticipated in the WDSP EIR.

As shown in Table 1 below, all of the study intersections would continue to operate at acceptable levels of service under existing plus project conditions.

Table 1
Existing and Existing Plus Project PM Peak Hour Intersection Level of Service

	Existing		Existing Plus Project	
Study Intersection	Delay	LOS	Delay	LOS
1. Golf Course Drive West/Dowdell Ave.	2.2	A	2.2	A
2. Golf Course Drive West/Redwood Drive	31.8	C	33.3	C
3. Golf Course Drive West/US 101 S Ramps	20.0	C	20.2	C
4. Golf Course Drive West/Commerce Blvd	28.8	C	28.9	C
5. Commerce Blvd./US 101 N Ramps	24.6	C	24.8	C

Note: Delay is measured in average seconds per vehicle; LOS = Level of Service

As shown in Table 2, under future without project conditions, the intersections of Golf Course Drive West/Dowdell Avenue and Golf Course Drive West/Redwood Drive would operate at level of service (LOS) E and F, respectively. The proposed project would increase the average vehicle delays at Golf Course Drive West/Dowdell Avenue by 0.5 seconds, and Golf Course Drive West/Redwood Drive by 4.0 seconds.

Table 2
Future and Future Plus Project PM Peak Hour Intersection Level of Service

Study Intersection	Future		Future Plus Project	
	Delay	LOS	Delay	LOS
1. Golf Course Drive West/Dowdell Ave.	65.9	E	66.4	E
2. Golf Course Drive West/Redwood Drive	67.8	E	71.8	E
3. Golf Course Drive West/US 101 S Ramps	37.5	D	38.0	D
4. Golf Course Drive West/Commerce Blvd	38.1	D	38.4	D
5. Commerce Blvd./US 101 N Ramps	35.9	D	36.5	D

Note: Delay is measured in average seconds per vehicle; LOS = Level of Service

The City of Rohnert Park does not have a specific threshold to determine the significance of an increase in delay; therefore the established County of Sonoma criteria were used. For intersections projected to operate at unacceptable levels in the future without a project, a project would be considered to create a significant impacts it increased the average vehicle delay at the affected intersection by 5.0 seconds of greater. Since the addition of project traffic would increase the average vehicle delay at the intersections of Golf Course Drive West/Dowdell Avenue and Golf Course Drive West/Redwood Drive by less than 5 seconds, impacts would be less than significant.

c. The project site is not within an airport land use plan. Due to the type of project it is, the project would not have the ability to change or affect air traffic patterns resulting in any potential safety risks. Therefore, there would be no impact on air traffic patterns.

d. The two proposed project driveways would be restricted to right turns in and out because raised medians exist on Golf Course Drive West and Redwood Drive. In addition, the two driveways would be located as far as possible from the signalized intersection at Golf Course Drive West/Redwood Drive, which would minimize the potential for conflicts or adverse operational impacts to occur. Therefore, the project does not include any dangerous design features or incompatible uses that could result in hazardous conditions and there would be no impact.

e. As discussed in the WDSP EIR, impacts related to emergency access to the WDSP would be significant unless future development is designed to meet the requirements set forth by the City of Rohnert Park Public Safety Departments. Since the proposed project is within the WDSP, Mitigation Measure TRAF-1 (WDSP EIR Mitigation Measures 3.6.7) would be required to ensure site design includes adequate emergency access. With implementation of this mitigation measure, impacts would be less than significant.

f. The proposed project would include sidewalks on both Redwood Drive and Golf Course Drive West along the frontage of the project site. Additional sidewalks would be provided internally to allow for pedestrian circulation between the parking lot and the building. Bike lanes are currently provided on Redwood Drive and Golf Course Drive West and the project would include bicycle parking racks for 6 bicycles. The inclusion of sidewalks and bicycle racks is consistent with the WDSP and complies with mitigation included in the WDSP EIR (Mitigation Measures 3.6-6a and 3.6-6c). Therefore, the project would have no impact related to conflicting with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, and the project would not otherwise decrease the performance or safety of such facilities.

Mitigation Measures

Mitigation Measures TRAF-1 (WDSP EIR Mitigation Measure 3.6-7): Site design should include adequate fire lanes and other emergency facilities as deemed appropriate.

XVII. UTILITIES AND SERVICE SYSTEMS	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable 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?	☐	☐	☒	☐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
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?	☐	☐	☐	☒

a., b., d., e. As discussed in the WDSP EIR, wastewater from the WDSP, including the proposed project would be accommodated in the City of Rohnert Park's wastewater treatment allocation with the Subregional Reclamation System. Therefore, no expansion of the existing wastewater system would be required for the proposed project, and impacts would be less than significant.

In addition, as described in the WDSP EIR, the City of Rohnert Park has sufficient water supply and water delivery infrastructure to serve the WDSP area, including the proposed project. Therefore, impacts related to water supply and infrastructure would be less than significant.

c. As described in *Section IX Hydrology and Water Quality*, site storm drainage patterns would be modified following development due to an increase in impermeable surface on the site. This would cause an increase in runoff from the site. However, implementation of Mitigation Measure HYDRO-2 (WDSP EIR Mitigation Measure 3.3-1) would require the construction of a storm drainage system in accordance with the Sonoma County Water Agency *Flood Control Design Criteria*. Construction of new storm drain systems would be required to comply with the Stormwater Phase II regulations administered by the North Coast Regional Water Quality Control Board through permits to the City. Therefore, the project would have a less than significant impact related to construction of new stormwater drainage facilities.

f. The WDSP EIR concluded that the County of Sonoma would be capable of providing the solid waste disposal services necessary to serve the entire WDSP area, including the proposed project. In addition, the city must comply with Assembly Bill 939, passed in 1989, to reduce the volume of material sent to landfills by implementation of a recycling plan for both construction and operation phases of projects. Therefore, the proposed project would result in a less than significant impact related to solid waste facilities.

g. The project would comply with federal, state and local statutes and regulations related to solid waste and would have no impact related to solid waste regulations.

Mitigation Measures

No mitigation measures are necessary.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 to drop 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	☐	☒	☐	☐

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐

a. The analysis provided throughout this Initial Study identifies project impacts that may be potentially significant and identifies mitigation measures that would reduce each impact to a less than significant level. Mitigation measures are consistent with the Conservation Strategy for the Santa Rosa Plain and would be implemented as a condition of permitting impacts to special-status species and sensitive habitats. Impacts associated with impacts associated with degradation of the environment or impacts to important habitat or wildlife populations would be less than significant with implementation of the mitigation measures contained in this Initial Study.

b. The analysis provided throughout this Initial Study demonstrates that the project's contribution to cumulative impacts would be reduced to less than significant levels through mitigation.

c. The analysis provided throughout this Initial Study identifies project impacts that may be potentially significant and identifies mitigation measures that would reduce each impact to a less than significant level.

REFERENCES

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APPENDIX A

Air Quality and
Greenhouse Gas Emissions Analyses

DUDEK

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MEMORANDUM

To:	Norm Weisbrod, City of Rohnert Park
From:	Katherine Waugh, AICP
Subject:	Amy's Kitchen Restaurant Air Quality and Greenhouse Gas Analysis
Date:	February 18, 2014
cc:	Marilyn Ponton, City of Rohnert Park
Attachment(s):	CalEEMod Outputs

Dudek has prepared the following analysis of the potential for the proposed Amy's Kitchen Restaurant project to generate significant levels of air pollutant and greenhouse gas (GHG) emissions. The analysis is consistent with recommendations of the Bay Area Air Quality Management District (BAAQMD). To evaluate the project's potential GHG emissions, Dudek prepared modeling of the operation of the proposed project using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2. The CalEEMod output files are provided as Attachment A.

SUMMARY

Screening criteria identified by the BAAQMD indicate that emissions of criteria air pollutants associated with construction and operation of the proposed project would be less than significant. Because the construction and operation emissions would be below the BAAQMD significance thresholds, the project would not result in emissions that violate any applicable air quality standards or contribute substantially to an existing or projected air quality violation. The BAAQMD's Basic Construction Emission Control Measures must be included in the project design and implemented during construction.

The project exceeds the BAAQMD screening criteria for GHG emissions. Therefore the project's operational GHG emissions were estimated using CalEEMod. The CalEEMod results indicate that GHG emissions from operation of the proposed project would remain below the thresholds identified by the BAAQMD. The applicable screening criteria and thresholds of significance are identified in the Regulatory Guidance section below.

REGULATORY GUIDANCE

Criteria Air Pollutant Regulations

The federal and state Clean Air Acts define allowable concentrations of six air pollutants – these pollutants are referred to as "criteria air pollutants." When monitoring indicates that a region regularly experiences air pollutant concentrations that exceed those limits, the region is designated as non-attainment and is required to develop an air quality plan that describes air pollution control strategies to be implemented to reduce air pollutant emissions and concentrations.

The project site is located within the San Francisco Bay Area, which is designated non-attainment for the federal 8-hour ozone standard. The area is in attainment or unclassified for all other federal standards. The area is designated non-attainment for state standards for 1-hour and 8-hour ozone, 24-hour small particulate matter (PM10), annual PM10, and annual respirable particulate matter (PM2.5). To address the region's non-attainment status, the Bay Area Air Quality Management District (BAAQMD) adopted the Bay Area 2005 Ozone Strategy (BAAQMD 2006) and the Bay Area 2010 Clean Air Plan (BAAQMD 2010a), which is an update to the 2005 document and provides "an integrated, multi-pollutant strategy to improve air quality, protect public health, and protect the climate." The 2010 plan addresses ozone, PM, air toxics, and greenhouse gases. The 2010 plan identifies a number of control measures to be adopted or implemented in the 2010 to 2012 timeframe to reduce emissions of these pollutants.

State GHG Regulations

In 2006, the State of California enacted Assembly Bill (AB) 32, the Global Warming Solutions Act. AB 32 requires reducing statewide greenhouse gas (GHG) emissions to 1990 levels by 2020. Meeting the AB 32 reduction targets will require an approximately 30 percent reduction compared with a "business as usual" scenario. The state's plan for meeting these reduction targets is outlined in the California Air Resource Board's (CARB) Climate Change Scoping Plan.

CARB's Scoping Plan fact sheet states "This plan calls for an ambitious but achievable reduction in California's carbon footprint – toward a clean energy future. Reducing greenhouse gas emissions to 1990 levels means cutting approximately 30% from business-as-usual emissions levels projected for 2020, or about 15% from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020." CARB's Emissions Inventory Report

found the total statewide GHG emissions in 2009 were equivalent to 457 million tons of CO2. Compared with the emissions in 1990, this is a 5.5% increase.

BAAQMD CEQA Guidelines

The BAAQMD has adopted CEQA Guidelines (the 2010 BAAQMD Guidelines, BAAQMD 2010b) that establish air pollutant emission thresholds that identify whether a project would violate any applicable air quality standards or contribute substantially to an existing or projected air quality violation. Compared with the previous set of guidelines adopted in 1999, the 2010 BAAQMD Guidelines lower the level of pollutant emissions and health risk impacts that are considered a significant environmental impact. The BAAQMD's adoption of the thresholds has been challenged in court. However, the litigation is procedural in nature and does not assert that the BAAQMD failed to provide substantial evidence to support its adoption of these thresholds. Because the 2010 thresholds are more conservative than the BAAQMD's prior thresholds, this impact analysis is based on the 2010 BAAQMD Guidelines.

The 2010 BAAQMD Guidelines also establish screening criteria based on the size of a project to determine whether detailed modeling to estimate air pollutant emissions is necessary. The screening criteria applicable to the proposed project are shown in Table 1.

Table 1
Screening Criteria for Fast Food Restaurant with Drive Through

Emission Type	Construction Emissions	Operational Criteria Air Pollutant Emissions	Operational GHG Emissions
Project Size	277 ksf	6 ksf	1 ksf

ksf = thousand square feet
Source: BAAQMD 2010, Table 3-1

As discussed below, the project size is less than the screening criteria for construction emissions and operational criteria air pollutant emissions. Because the project exceeds the operational GHG emissions screening criteria, the operational GHG emissions were estimated and compared to the GHG emissions threshold established by the 2010 BAAQMD Guidelines.

Note that GHG emissions are typically measured in carbon dioxide equivalents (CO2e), which converts emissions of several types of GHGs into an equivalent amount of carbon dioxide based on the relative potential for each gas to contribute to climate change. Section 2.2 of the 2010 BAAQMD Guidelines identifies the following GHG thresholds:

- For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy; or annual emissions less than 1,100 metric tons per year (MT/yr) of

CO2e; or 4.6 MT CO2e/SP/yr (residents + employees). Land use development projects include residential, commercial, industrial, and public land uses and facilities.

Climate change, which involves significant changes in global climate patterns, has been associated with an increase in the average temperature of the atmosphere near the Earth's surface, or global warming. This warming has been attributed to an accumulation of GHGs in the atmosphere. These GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. While the greenhouse effect is a naturally occurring process that aids in maintaining the Earth's climate, human activities, such as burning fossil fuels and clearing forests, generate additional GHG emissions which contribute to the greenhouse effect and result in increased average global temperatures.

PROJECT IMPACTS

Construction Emissions

The BAAQMD screening criteria described in Section 3.5 of the May 2010 Guidelines indicate that construction projects meeting the following characteristics have a less than significant amount of construction-related air pollutant emissions because they would not result in generation of construction-related criteria air pollutants and/or precursors that exceed the thresholds of significance:

1. The project is below the applicable construction screening level size (277,000 square feet);
2. The following Basic Construction Emission Control Measures would be included in the project design and implemented during construction
    a. All active construction areas shall be watered at least two times per day.
    b. All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or non-toxic soil stabilizers shall be applied to exposed non-paved surfaces.
    c. All haul trucks transporting soil, sand, or other loose material offsite shall be covered and/or shall maintain at least two feet of freeboard.
    d. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
    e. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
    f. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

g. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage regarding idling restrictions shall be provided for construction workers at all access points.

h. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

i. The prime construction contractor shall post a publicly visible sign with the telephone number and person to contact at the construction site and at the City of Rohnert Park or the regarding dust complaints. The prime construction contractor shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations

3. Construction-related activities would not include any of the following:

   a. Demolition;

   b. Simultaneous occurrence of more than two construction phases;

   c. Simultaneous construction of more than one land use type;

   d. Extensive site preparation; or

   e. Extensive material transport.

The proposed project is below the applicable screening levels, would include all Basic Construction Mitigation Measures, and the proposed construction meets the listed conditions. Therefore, the project meets all screening criteria and project-specific modeling of construction emission is not required. With implementation of the Basic Construction Emission Control Measures listed above, construction of the proposed project would have less than significant impacts related to air pollutant emissions, violations of air quality standards, GHG emissions, and climate change.

Operational Criteria Air Pollutant Emissions

The proposed project would construct a 3,998-square foot fast food restaurant. Based on the criteria shown in Table 1, the proposed project size is approximately 37 percent below the screening criteria for operational criteria air pollutant emissions. The air pollutant emissions during operation of the proposed project would have a less than significant impact to air quality and the potential for the region to experience violations of applicable air quality standards.

In addition, emissions of carbon monoxide (CO) from idling vehicles can create pockets of high CO concentrations, called "hot spots." These pockets can exceed the applicant state standards for CO. High CO concentrations can cause headaches, dizziness, and nausea and can contribute

to chronic health conditions. At very high concentrations and/or with prolonged contact, CO exposure can be fatal.

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service and/or with extremely high traffic volumes. More specifically, CO hot-spots occur where there are many thousands of cars idling. Screening criteria included in the BAAQMD 2010 CEQA Guidelines are designed to identify potentially significant CO hot-spots. Those criteria indicate that project-related CO emissions would not cause a significant impact on air quality if the project does not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour (or 24,000 vehicles per hour in an area where air flow is limited, such as a tunnel or parking garage).

The Traffic Impact Study prepared by W-Trans for the proposed project found that three of the five signalized study intersections would operate at an acceptable LOS under future plus project conditions, while two intersections would operate at deficient LOS in the future with and without the project. However, the project would only cause the delay at the two deficient intersections to increase by 0.5 seconds and 4.0 seconds, which is not considered significant. In addition, the traffic volumes at the study intersections would be far less than 44,000 vehicles per hour in the future with and without the project. Therefore, the project would not cause or contribute to a significant impact related to CO concentrations.

Operational GHG Emissions

The proposed project would construct a 3,998-square foot fast food restaurant. This is larger than the screening criteria for operational GHG emissions shown in Table 1. Therefore, operational GHG emissions were estimated using CalEEMod.

Modeling Inputs

The following inputs and changes to default assumptions were used in the CalEEMod modeling:

- **Land Use:** Fast Food Restaurant with Drive Through, 4,000 square feet (note that this slightly overstates the project size, to ensure a conservative analysis)
- **Trip Generation:** No changes to the default trip generation rates were made, reflecting 496.12 weekday trips per thousand square feet.
- **Wastewater:** Changes to the default assumptions were made to reflect that all wastewater treated at City's Wastewater Treatment Plant, no septic tanks would be used.

The following project design features were reflected as mitigation measures in the CalEEMod modeling:

- **Energy:** The project would exceed Title 24 energy efficiency requirements (those in effect in 2014) by 15 percent, consistent with CalGreen Tier 1 requirements, as required by the City of Rohnert Park.
- **Energy:** The onsite solar panels included in the project would generate 12,500 kWh of energy.
- **Water:** The project would achieve a 20% reduction in indoor water use, consistent with CalGreen Tier 1 requirements.

Table 2 presents the project's estimated annual GHG emissions (in MTCO2e) based on the above inputs, assumptions, and project design features.

Table 2
Operational Annual GHG Emissions

Source	Metric Tons of Carbon Dioxide Equivalent Emissions	
	Unmitigated	Mitigated
Area Sources	0.00008	0.00008
Energy	85.4	74.2
Mobile Sources	916.3	916.3
Waste	21.0	21.0
Water	2.7	2.1
TOTAL	1,025.4	1,013.5
Threshold of Significance	1,100 MTCO2e/yr	

As the project's GHG emissions would remain below the applicable threshold of significance, the project would result in a less than significant contribution to climate change impacts and would not impede achievement of the state's GHG reduction goals.

Cumulative Impacts

As described in Section I.2 of the BAAQMD 2010 CEQA Guidelines, Thresholds of Significance, "by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards." Therefore, the thresholds of significance developed by the BAAQMD reflect the "emission levels for which a project's individual emissions would be cumulatively considerable." A project with emissions that are below the thresholds of significance would not make a

considerable contribution to any cumulative impacts. Because the proposed project would have emissions that are below the applicable thresholds of significance, the project would make a less than significant contribution to cumulative air quality and climate change impacts.

REFERENCES

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Amy's Restaurant

San Francisco Bay Area Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Fast Food Restaurant with Drive Thru	4.00	1000sqft	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2015
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - modeling for operational emissions only

Water And Wastewater - all wastewater treated at City's WWTP, no septic tanks

Mobile Land Use Mitigation -

Energy Mitigation - 2008 to 2014 Title 24 = 25% improvement in energy efficiency; additional 15% from CalGreen Tier 1.
1-[(1-0.25)*(1-0.15)] * 100 = 36.25

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

2014	1.5400e-003	0.0126	9.5200e-003	1.0000e-005	9.0000e-005	9.3000e-004	1.0200e-003	2.0000e-005	8.9000e-004	9.2000e-004	0.0000	1.1833	1.1833	2.3000e-004	0.0000	1.1882
Total	**1.5400e-003**	**0.0126**	**9.5200e-003**	**1.0000e-005**	**9.0000e-005**	**9.3000e-004**	**1.0200e-003**	**2.0000e-005**	**8.9000e-004**	**9.2000e-004**	**0.0000**	**1.1833**	**1.1833**	**2.3000e-004**	**0.0000**	**1.1882**

Mitigated Construction

2014	1.5400e-003	0.0126	9.5200e-003	1.0000e-005	9.0000e-005	9.3000e-004	1.0200e-003	2.0000e-005	8.9000e-004	9.2000e-004	0.0000	1.1833	1.1833	2.3000e-004	0.0000	1.1882
Total	**1.5400e-003**	**0.0126**	**9.5200e-003**	**1.0000e-005**	**9.0000e-005**	**9.3000e-004**	**1.0200e-003**	**2.0000e-005**	**8.9000e-004**	**9.2000e-004**	**0.0000**	**1.1833**	**1.1833**	**2.3000e-004**	**0.0000**	**1.1882**

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

Area	0.0203	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Energy	4.5500e-003	0.0414	0.0348	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	84.9490	84.9490	2.6700e-003	1.2000e-003	85.3768
Mobile	1.2638	1.8299	9.6427	0.0112	0.7437	0.0217	0.7654	0.1996	0.0199	0.2194	0.0000	915.2529	915.2529	0.0489	0.0000	916.2797
Waste						0.0000	0.0000		0.0000	0.0000	9.3538	0.0000	9.3538	0.5528	0.0000	20.9625
Water						0.0000	0.0000		0.0000	0.0000	0.4296	1.9901	2.4197	1.5700e-003	9.5000e-004	2.7480
Total	**1.2887**	**1.8713**	**9.6775**	**0.0115**	**0.7437**	**0.0248**	**0.7685**	**0.1996**	**0.0230**	**0.2226**	**9.7834**	**1,002.1921**	**1,011.9755**	**0.6059**	**2.1500e-003**	**1,025.3671**

2.2 Overall Operational

Mitigated Operational

Category																
Area	0.0203	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Energy	4.0500e-003	0.0369	0.0310	2.2000e-004		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	73.7827	73.7827	2.2900e-003	1.0500e-003	74.1564
Mobile	1.2638	1.8299	9.6427	0.0112	0.7437	0.0217	0.7654	0.1996	0.0199	0.2194	0.0000	915.2529	915.2529	0.0489	0.0000	916.2797
Waste						0.0000	0.0000		0.0000	0.0000	9.3538	0.0000	9.3538	0.5528	0.0000	20.9625
Water						0.0000	0.0000		0.0000	0.0000	0.3437	1.4655	1.8091	1.2500e-003	7.6000e-004	2.0713
Total	**1.2882**	**1.8668**	**9.6737**	**0.0115**	**0.7437**	**0.0245**	**0.7682**	**0.1996**	**0.0227**	**0.2222**	**9.6975**	**990.5011**	**1,000.1986**	**0.6052**	**1.8100e-003**	**1,013.4700**

Percent Reduction	**0.04**	**0.24**	**0.04**	**0.26**	**0.00**	**1.37**	**0.04**	**0.00**	**1.48**	**0.15**	**0.88**	**1.17**	**1.16**	**0.12**	**15.81**	**1.16**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2014	7/2/2014	5	2	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2014

Unmitigated Construction On-Site

Off-Road	1.4900e-003	0.0125	8.8500e-003	1.0000e-005		9.3000e-004	9.3000e-004		8.9000e-004	8.9000e-004	0.0000	1.0952	1.0952	2.3000e-004	0.0000	1.1000
Total	**1.4900e-003**	**0.0125**	**8.8500e-003**	**1.0000e-005**		**9.3000e-004**	**9.3000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**1.0952**	**1.0952**	**2.3000e-004**	**0.0000**	**1.1000**

Unmitigated Construction Off-Site

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	6.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0881	0.0881	1.0000e-005	0.0000	0.0882
Total	**5.0000e-005**	**7.0000e-005**	**6.7000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0881**	**0.0881**	**1.0000e-005**	**0.0000**	**0.0882**

3.2 Demolition - 2014

Mitigated Construction On-Site

Off-Road	1.4900e-003	0.0125	8.8500e-003	1.0000e-005		9.3000e-004	9.3000e-004		8.9000e-004	8.9000e-004	0.0000	1.0952	1.0952	2.3000e-004	0.0000	1.1000
Total	**1.4900e-003**	**0.0125**	**8.8500e-003**	**1.0000e-005**		**9.3000e-004**	**9.3000e-004**		**8.9000e-004**	**8.9000e-004**	**0.0000**	**1.0952**	**1.0952**	**2.3000e-004**	**0.0000**	**1.1000**

Mitigated Construction Off-Site

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	7.0000e-005	6.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0881	0.0881	1.0000e-005	0.0000	0.0882
Total	**5.0000e-005**	**7.0000e-005**	**6.7000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0881**	**0.0881**	**1.0000e-005**	**0.0000**	**0.0882**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Mitigated	1.2638	1.8299	9.6427	0.0112	0.7437	0.0217	0.7654	0.1996	0.0199	0.2194	0.0000	915.2529	915.2529	0.0489	0.0000	916.2797
Unmitigated	1.2638	1.8299	9.6427	0.0112	0.7437	0.0217	0.7654	0.1996	0.0199	0.2194	0.0000	915.2529	915.2529	0.0489	0.0000	916.2797

4.2 Trip Summary Information

Fast Food Restaurant with Drive Thru	1,984.48	2,888.12	2170.88	1,999,642	1,999,642
Total	1,984.48	2,888.12	2,170.88	1,999,642	1,999,642

4.3 Trip Type Information

Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50

0.546619	0.062800	0.174631	0.124220	0.034286	0.004915	0.015254	0.022958	0.002060	0.003298	0.006596	0.000695	0.001668

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Kilowatt Hours of Renewable Electricity Generated

Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	33.6540	33.6540	1.5200e-003	3.1000e-004	33.7835
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	39.9014	39.9014	1.8000e-003	3.7000e-004	40.0550
NaturalGas Mitigated	4.0500e-003	0.0369	0.0310	2.2000e-004		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	40.1287	40.1287	7.7000e-004	7.4000e-004	40.3729
NaturalGas Unmitigated	4.5500e-003	0.0414	0.0348	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	45.0476	45.0476	8.6000e-004	8.3000e-004	45.3217

5.2 Energy by Land Use - NaturalGas

Unmitigated

Fast Food Restaurant with Drive Thru	844160	4.5500e-003	0.0414	0.0348	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	45.0476	45.0476	8.6000e-004	8.3000e-004	45.3217
Total		**4.5500e-003**	**0.0414**	**0.0348**	**2.5000e-004**		**3.1400e-003**	**3.1400e-003**		**3.1400e-003**	**3.1400e-003**	**0.0000**	**45.0476**	**45.0476**	**8.6000e-004**	**8.3000e-004**	**45.3217**

Mitigated

Fast Food Restaurant with Drive Thru	751984	4.0500e-003	0.0369	0.0310	2.2000e-004		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	40.1287	40.1287	7.7000e-004	7.4000e-004	40.3729
Total		**4.0500e-003**	**0.0369**	**0.0310**	**2.2000e-004**		**2.8000e-003**	**2.8000e-003**		**2.8000e-003**	**2.8000e-003**	**0.0000**	**40.1287**	**40.1287**	**7.7000e-004**	**7.4000e-004**	**40.3729**

5.3 Energy by Land Use - Electricity

Unmitigated

Fast Food Restaurant with	137160	39.9014	1.8000e-003	3.7000e-004	40.0550
Total		**39.9014**	**1.8000e-003**	**3.7000e-004**	**40.0550**

Mitigated

Fast Food Restaurant with	115684	33.6540	1.5200e-003	3.1000e-004	33.7835
Total		**33.6540**	**1.5200e-003**	**3.1000e-004**	**33.7835**

6.0 Area Detail

6.1 Mitigation Measures Area

Mitigated	0.0203	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Unmitigated	0.0203	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005

6.2 Area by SubCategory

Unmitigated

Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0156					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Total	**0.0203**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

6.2 Area by SubCategory

Mitigated

Consumer Products	0.0156					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0203**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Mitigated	1.8091	1.2500e-003	7.6000e-004	2.0713
Unmitigated	2.4197	1.5700e-003	9.5000e-004	2.7480

7.2 Water by Land Use

Unmitigated

Fast Food Restaurant with Drive Thru	1.21413 / 0.077498	2.4197	1.5700e-003	9.5000e-004	2.7480
Total		**2.4197**	**1.5700e-003**	**9.5000e-004**	**2.7480**

Mitigated

Fast Food Restaurant with Drive Thru	0.971308 / 0.077498	1.8091	1.2500e-003	7.6000e-004	2.0713
Total		**1.8091**	**1.2500e-003**	**7.6000e-004**	**2.0713**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

Unmitigated	9.3538	0.5528	0.0000	20.9625
Mitigated	9.3538	0.5528	0.0000	20.9625

8.2 Waste by Land Use

Unmitigated

Fast Food Restaurant with Drive Thru	46.08	9.3538	0.5528	0.0000	20.9625
Total		**9.3538**	**0.5528**	**0.0000**	**20.9625**

8.2 Waste by Land Use

Mitigated

Fast Food Restaurant with	46.08	9.3538	0.5528	0.0000	20.9625
Total		**9.3538**	**0.5528**	**0.0000**	**20.9625**

9.0 Operational Offroad

10.0 Vegetation

APPENDIX B

Traffic Impact Study for Amy's Kitchen

Prepared for the

City of Rohnert Park

Submitted by

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February 20, 2014

Balancing Functionality and Livability
Traffic Engineering • Transportation Planning

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Executive Summary

The proposed Amy's Kitchen restaurant will be located on the southwest corner of Golf Course Drive/Redwood Drive. The site is currently vacant. After accounting for traffic generated by pass-by vehicles, the project is expected to add 1,091 new trips to the surrounding roadway network on a daily basis, including 72 new trips during the evening peak hour.

Vehicle operations were studied for five signalized intersections in the vicinity of the project site and nearby US 101 freeway interchange. It was determined that under existing conditions the study intersections all operate acceptably and will continue to do so with the addition of project-generated traffic. Under Baseline conditions, which includes traffic associated with impending projects in the next two to three years that are not yet generating traffic, all intersections would be expected to continue operating acceptably upon the addition of project traffic.

The future buildout land use projections assume buildout of the project site with 3,998 square feet of shopping center type uses. Amy's Kitchen would be expected to generate 957 more daily trips and 59 more p.m. peak hour trips than would have been generated by shopping center uses. Upon adding these incremental trips to the buildout traffic volumes, it was determined that three of the five study intersections would continue to operate acceptably at the same Levels of Service as under future conditions without the project. With improvements identified in the City's PFFP, the remaining two study intersections on Golf Course Drive West are projected to operate at unacceptable levels (the intersections at Dowdell Avenue and Redwood Drive) without the Amy's Kitchen project. The Amy's project is projected to increase average vehicle delays at these two intersections by 0.5 to 4.0 seconds, which would be imperceptible to drivers and not constitute significant traffic impacts.

The project includes pedestrian facilities that would effectively tie into the regional pedestrian network and transit services. The project also fronts two streets with bicycle lanes that connect to the regional bicycle network, facilitating bicycle travel. The onsite vehicular and pedestrian circulation networks, including drive-through operations, are projected to operate effectively. Adequate sight distances would exist at the project's two driveways.

Both project driveways exist on segments of City streets with raised medians, and would therefore be restricted to right turns in and out. This type of access minimizes conflict points and adverse influences to through traffic on the fronting roadways, though some drivers traveling to or from the project will need to make u-turns at Golf Course Drive West/Redwood Drive to reach their destination. Sufficient roadway width exists at the intersection to accommodate passenger car u-turns, and the traffic analysis shows no adverse operational conditions to result from the modest levels of u-turn traffic.

Introduction

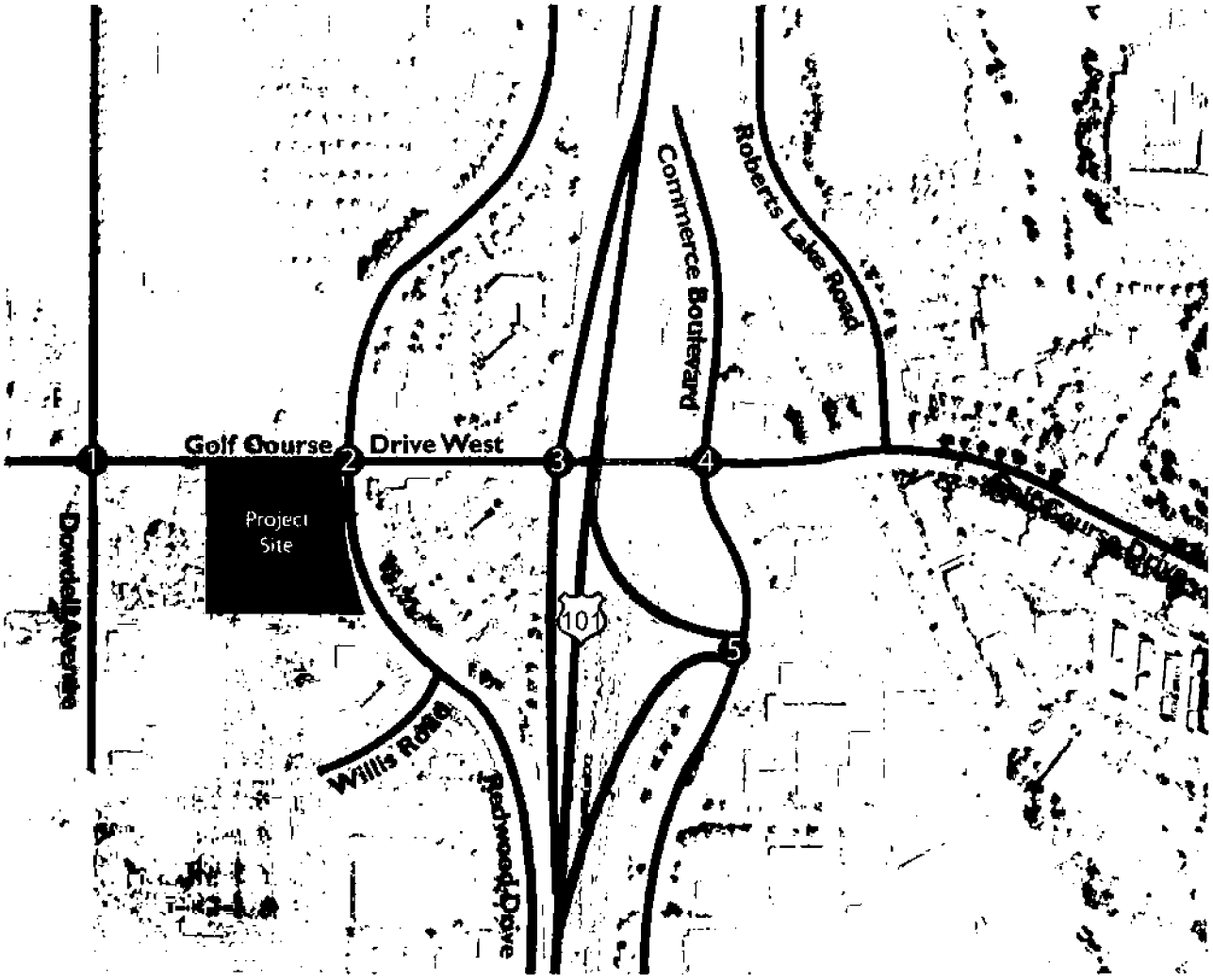
This report presents an analysis of the potential traffic impacts that would be associated with development of a proposed fast food restaurant with a drive-through to be located at the southwest corner of Redwood Drive/Golf Course Drive West in the City of Rohnert Park. The traffic study was completed in accordance with the criteria established by the City of Rohnert Park, and is consistent with standard traffic engineering techniques.

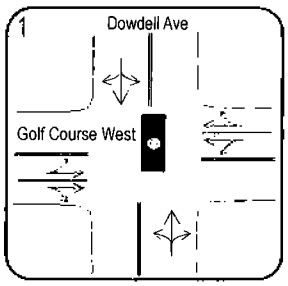
Purpose

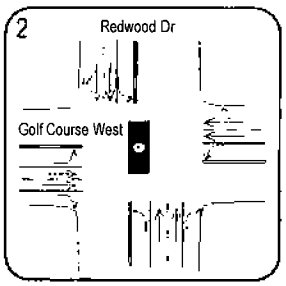
The purpose of a traffic impact study is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required in order to mitigate these impacts to a level of insignificance as defined by the City's General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

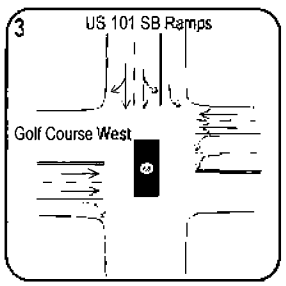
Project Profile

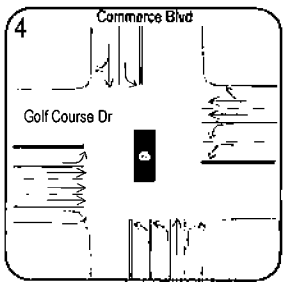
The proposed project is a 3,998 square foot restaurant with a drive through window. Access to the site would take place via one driveway on Golf Course Drive West, and one driveway on Redwood Drive. Both driveways are located on segments of roadway with raised medians and would be restricted to right turns in and out. The project site is located at the southwest corner of Golf Course Drive West and Redwood Drive, as shown in Figure 1.

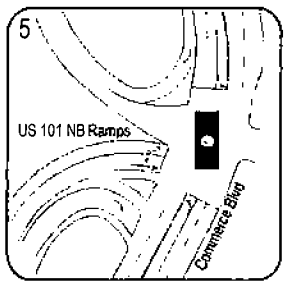












North

Not to Scale

LEGEND
● Study Intersection

907-39rpa ai 2/14

Traffic Impact Study for Amy's Kitchen

Figure 1 – Study Area and Lane Configurations

w-trans

Operational Analysis

Study Area and Periods

The study area consists of the following intersections:

1. Golf Course Drive West/Dowdell Avenue
2. Golf Course Drive West/Redwood Drive
3. Golf Course Drive West/US 101 South Ramps
4. Golf Course Drive/Commerce Boulevard
5. Commerce Boulevard/US 101 North Ramps

Operating conditions during the p.m. peak period were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network, consistent with the approach taken in the adopted *Wilfred Dowdell Specific Plan EIR*. The p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute, as well as a peak activity period for restaurants.

Study Intersections

Golf Course Drive West/Dowdell Avenue is a signalized intersection with two-phase signal operations. Golf Course Drive West includes two lanes in each direction while Dowdell Avenue currently includes single-lane approaches. Crosswalks with pedestrian phasing are located on the south and east legs of the intersection.

Golf Course Drive West/Redwood Drive is a signalized intersection with protected left-turn phasing and left-turn pockets on all approaches. Both streets include two through lanes in each direction. Crosswalks with pedestrian phasing are located on the south, east, and west legs of the intersection.

Golf Course Drive West/US 101 South Ramps is a signalized intersection with protected left-turn phasing on the westbound approach. The southbound approach is a collector-distributor road that serves traffic from the US 101 southbound off-ramp as well that originating from the Santa Rosa Avenue southbound on-ramp to US 101. Crosswalks with pedestrian phasing are located on the north, south, and east legs of the intersection.

Golf Course Drive/Commerce Boulevard is a signalized intersection with protected left-turn phasing on Golf Course Drive, and split-phasing on Commerce Boulevard. The northbound and eastbound approaches also include right-turn overlap signal phasing. Crosswalks with pedestrian phasing are located on the north, south, and west legs of the intersection.

Commerce Boulevard/US 101 North Ramps is a signalized intersection with protected left-turn phasing on Commerce Boulevard and split phasing on the eastbound off-ramp and westbound driveway approaches. The off-ramp includes a right-turn overlap signal phase and the southbound approach includes a "free" right-turn lane for drivers destined to the US 101 North on-ramp. A crosswalk with pedestrian phasing exists on the west side of the intersection.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the vicinity of the proposed project site. Many improvements have been recently completed as part of the Golf Course Drive West widening between Redwood Drive and Stony Point Road. Sidewalk gaps currently exist on the west side of Redwood Drive along the project site frontage, on Redwood Drive between Golf Course Drive West and Home Depot, and along the north side of Golf Course Drive West. The gaps on the north side of Golf Course Drive West and west side of Redwood Drive will be filled by completion of the planned Oxford Suites/McDonald's project on the northwest corner of Golf Course Drive West/Redwood Drive. The gap along the south side of Golf Course Drive West would be completed by future development of the Amy's Kitchen project site.

Bicycle Facilities

The *Highway Design Manual*, California Department of Transportation (Caltrans), 2012, classifies bikeways into three categories:

- *Class I Multi-Use Path*: a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- *Class II Bike Lane*: a striped and signed lane for one-way bike travel on a street or highway.
- *Class III Bike Route*: signing only for shared use with motor vehicles within the same travel lane on a street or highway.

In the project area, Class II bike lanes exist on both sides of Golf Course Drive-Golf Course Drive West and Redwood Drive. As indicated in the 2008 *Rohnert Park Bicycle and Pedestrian Master Plan*, Class II bicycle lanes are also planned to be developed in the future along Dowdell Avenue and Business Park Drive. A future Class I multi-use path is also planned to be constructed along the SMART commuter rail corridor, and would be accessible from the project site via bicycle lanes on Golf Course Drive.

Transit Facilities

Sonoma County Transit (SCT) is the principal transit service within Rohnert Park, providing daily local and intercity service. In the project vicinity, SCT local Routes 10, 12, and 14 operate together to provide transit access to destinations on both the east and west sides of US 101. In addition, SCT Routes 44 and 48, with service between Petaluma and Santa Rosa, provide intercity service to Rohnert Park.

Golden Gate Transit (GGT) provides daily interregional service along the US 101 corridor between Santa Rosa and San Francisco. Route 72 provides weekday commuter service between Santa Rosa and San Francisco, with a southbound stop at Golf Course Drive West/Redwood Drive and both northbound and southbound stops at Golf Course Drive/Roberts Lake Road. Transit stops serving these bus routes are all located within one-quarter mile walking distance of the project site via existing sidewalks.

Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2000. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle. All five study intersections are controlled by traffic signals and were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether or not the signals are coordinated, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology.

The ranges of delay associated with the various levels of service are indicated in Table 1.

Table 1
Signalized Intersection Level of Service Criteria

LOS A	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
LOS B	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
LOS C	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
LOS D	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
LOS E	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
LOS F	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2000

Traffic Operation Standards

The applied thresholds of significance for intersection impacts are based on those included in Policy TR-1 of the *Rohnert Park 2020 General Plan*. The Project would create a significant circulation impact if it would fail to maintain LOS C as the minimum standard for the signalized intersection at Golf Course Drive West, and LOS D as the minimum standard for the remaining signalized intersections (the General Plan allows LOS D at select intersections near freeway interchanges, including Golf Course Drive West/Redwood Drive, Golf Course Drive West/US 101 Southbound Ramps, Golf Course Drive/ Commerce Boulevard, and Commerce Boulevard/US 101 Northbound Ramps).

For intersections that are projected to operate at unacceptable levels in the future, the City's General Plan does not specify what level of traffic impact an individual project would need to cause in order for such impacts to be considered significant, so criteria established by the County of Sonoma were instead

used. The County of Sonoma indicates that for intersections projected to operate at unacceptable levels in the future without a project, the project would be considered to create a significant impact if it increases the average vehicle delay at the affected intersection by 5.0 seconds or greater.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the p.m. peak period. This condition does not include project-generated traffic volumes. Traffic volume data was obtained in 2012 after the Golf Course Drive freeway interchange reconfiguration project was complete. In order to assess traffic volumes that reflect the opening of the nearby Graton Rancheria Casino, the 2012 field-collected data was adjusted to include the casino's projected traffic generation. All data was obtained while local schools were in session.

Intersection Levels of Service

Under existing conditions, all five study intersections are operating acceptably at LOS C or better. The existing traffic volumes are shown in Figure 2. A summary of the intersection level of service calculations is contained in Table 2, and copies of the Level of Service calculations are provided in Appendix A.

Table 2
Existing PM Peak Hour Intersection Levels of Service

Study Intersection	Existing Conditions	
	Delay	LOS
1. Golf Course Dr W/Dowdell Ave	2.2	A
2. Golf Course Dr W/Redwood Dr	31.8	C
3. Golf Course Dr W/US 101 S Ramps	20.0	C
4. Golf Course Dr/Commerce Blvd	28.8	C
5. Commerce Blvd/US 101 N Ramps	24.6	C

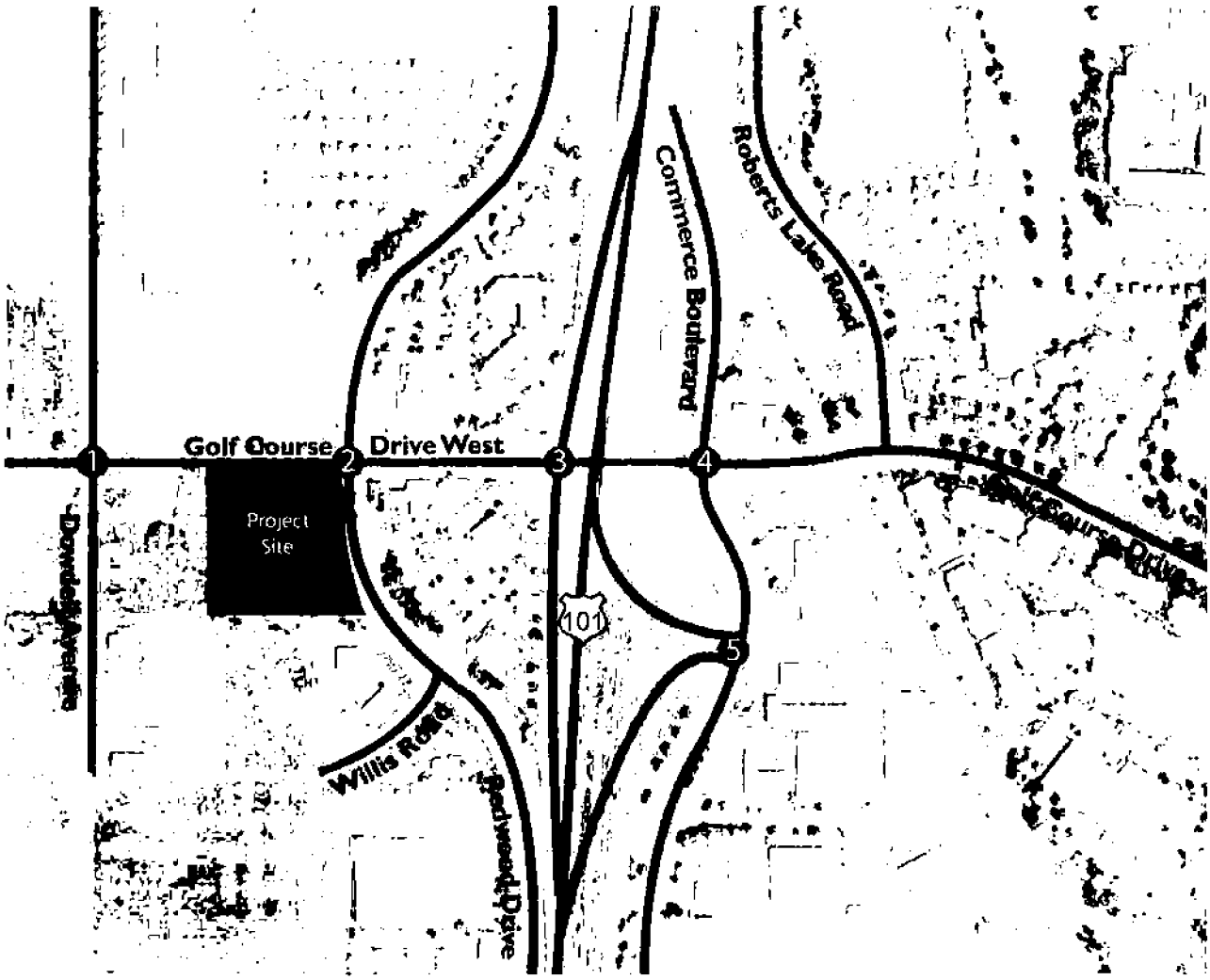
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

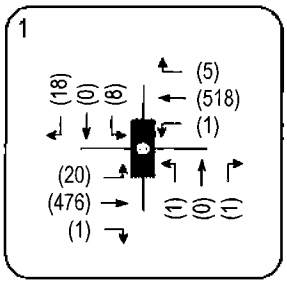
Baseline Conditions

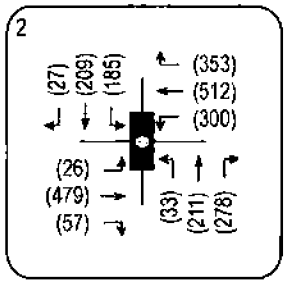
Baseline operating conditions were assessed to reflect the addition of traffic associated with known projects that may be constructed and/or become operational in the study area in the next two to three years. City Staff identified the following three projects.

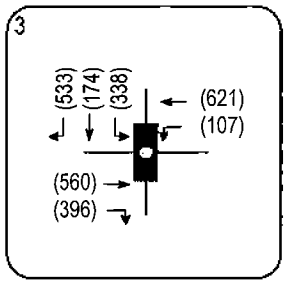
- Oxford Suites/McDonald's – hotel and fast-food restaurant to be located on the northwest corner of Golf Course Drive West/Redwood Drive
- Walmart expansion – expansion of the existing Walmart store to include grocery, located near the intersection of Redwood Drive/Commerce Boulevard
- Fiori Estates – 244-unit multi-family development located within the Stadium Area Specific Plan, to the north of Martin Avenue and west of Redwood Drive (north of Costco)

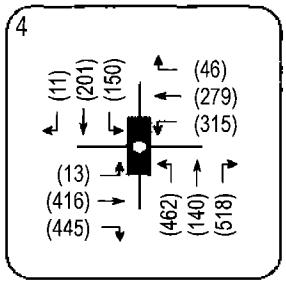
The projected traffic associated with these three projects was added to the volumes analyzed in the "Existing Conditions" scenario in order to determine Baseline volumes. Under these conditions, all five study intersections are projected to continue operating at LOS C or better. Baseline volumes are shown in Figure 3, and the resulting operating conditions are summarized in Table 3.

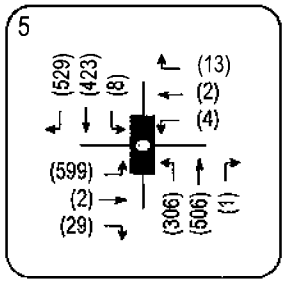












North

Not to Scale

LEGEND
● Study Intersection
(xx) P.M. Peak Hour Volume

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Traffic Impact Study for Amy's Kitchen

Figure 2 – Existing Traffic Volumes

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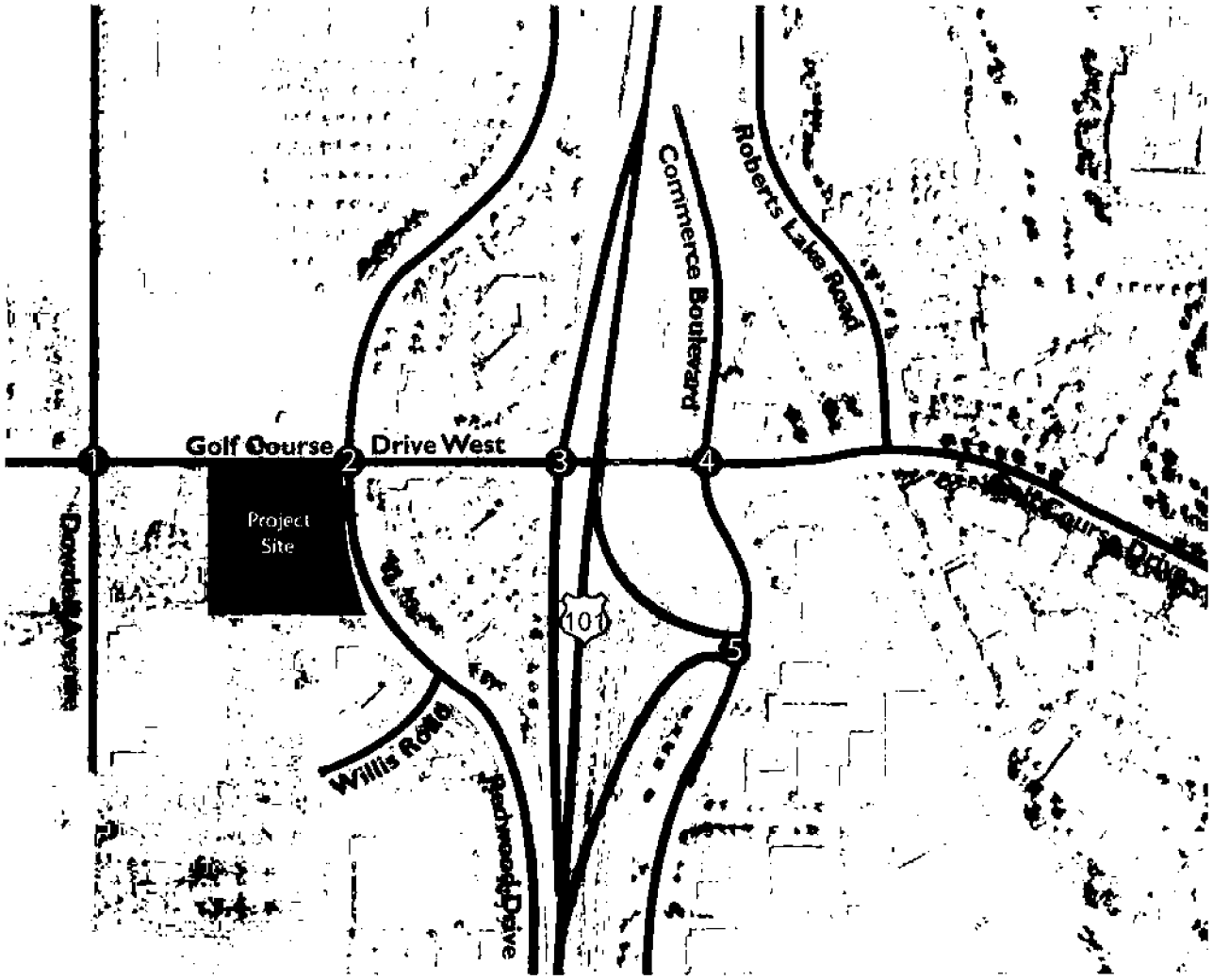

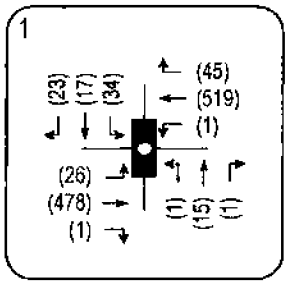

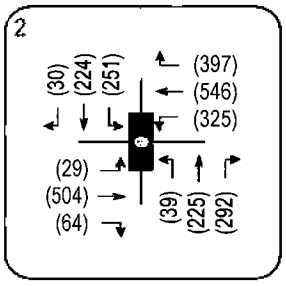

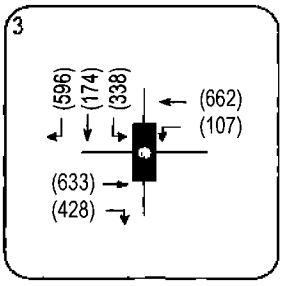

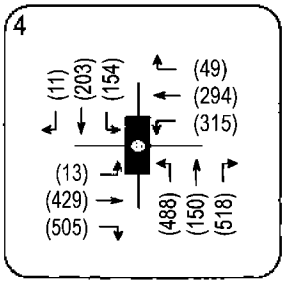

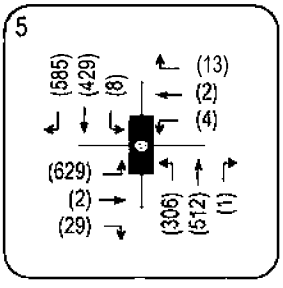

North

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LEGEND
● Study Intersection
(xx) P.M. Peak Hour Volume

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Traffic Impact Study for Amy's Kitchen

Figure 3 – Baseline Traffic Volumes

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Table 3
Baseline PM Peak Hour Intersection Levels of Service

Study Intersection	Baseline Conditions	
	Delay	LOS
1. Golf Course Dr W/Dowdell Ave	5.2	A
2. Golf Course Dr W/Redwood Dr	34.0	C
3. Golf Course Dr W/US 101 S Ramps	20.3	C
4. Golf Course Dr/Commerce Blvd	28.4	C
5. Commerce Blvd/US 101 N Ramps	24.5	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

Future Conditions

Future Traffic Volumes

Future traffic volume projections were obtained from the traffic analysis conducted by W-Trans for the Northwest Specific Plan EIR. The future volumes assume buildout of the Northwest Specific Plan area, completion of Phase II of the Graton Rancheria Casino and Hotel, buildout of the Rohnert Park General Plan, including Specific Plan areas, and regional buildout to the year 2040 as obtained from the Sonoma County Travel Model (SCTM/10), maintained by the Sonoma County Transportation Authority (SCTA). The future traffic projections also include buildout of the south Wilfred-Dowdell Specific Plan area, in which the proposed project is located, with shopping center type uses.

The SCTA model assumes a financially-constrained set of infrastructure improvements to be in place by the year 2040. In other words, the model only includes roadway and alternative transportation improvements that SCTA has deemed to be financially-feasible by the year 2040, including the widening of US 101 through the Marin-Sonoma narrows and implementation of Sonoma-Marin Area Rail Transit (SMART) commuter rail service.

Future Roadway Improvements

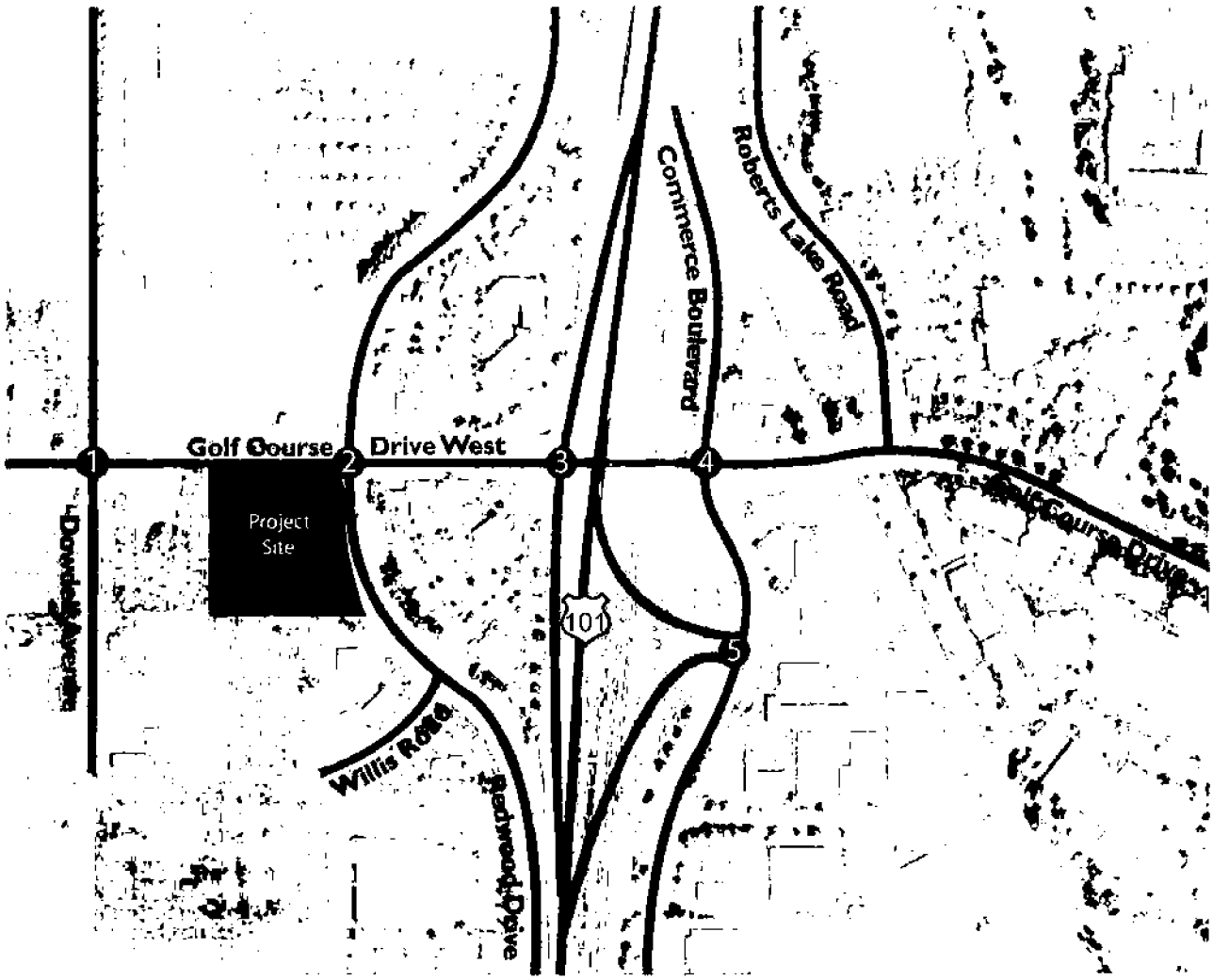
Several roadway and intersection improvements in the project vicinity are included in the City of Rohnert Park's *2011 Update to the Public Facilities Finance Plan* (PFFP), and will be funded through identified sources including payment of area wide traffic impact fees by developers. Roadway improvements identified in the PFFP, which are described below, are assumed to be in place under the Future and Future plus Project traffic analysis scenarios. The future lane configurations are shown in Figure 4.

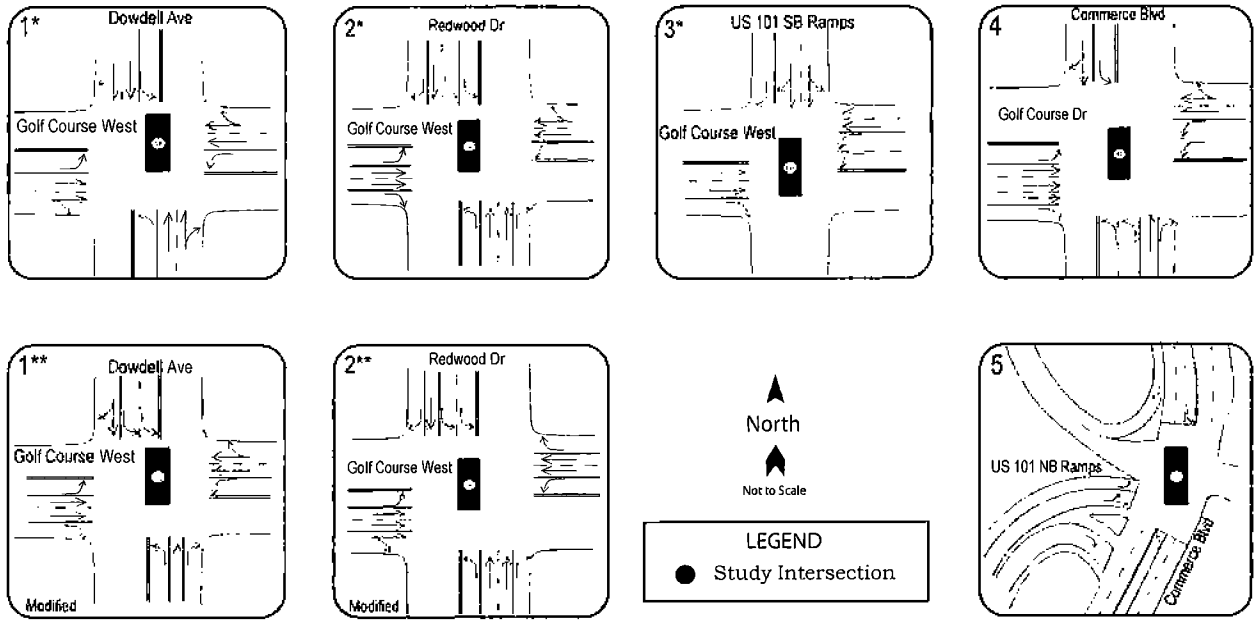
Golf Course Drive West Improvements

The corridor was recently widened between Redwood Drive and Stony Point Road. Additional improvements to be completed in the future and funded through the PFFP include widening Golf Course Drive West to include two westbound through lanes and sidewalks on the north side of the street between Redwood Drive and Langner Avenue.

Golf Course Drive West/Dowdell Avenue Intersection

The PFFP includes adding left-turn pockets on Golf Course Drive West, and widening Dowdell Avenue to include two travel lanes and left-turn pockets in each direction.





*Includes improvements identified in 2011 Public Facilities Finance Plan

**Future modification to achieve acceptable operation

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Traffic Impact Study for Amy's Kitchen

Figure 4 – Future Lane Configurations

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Redwood Drive/Golf Course Drive West Intersection

The PFFP includes construction of a southbound right-turn lane. This improvement, in addition to full frontage improvements including sidewalks, will be constructed by the approved Oxford Suites-McDonald's project. The PFFP also includes restriping of the southbound approach to include a single through lane and dual left-turn lanes.

Golf Course Drive West/US 101 South Ramps Intersection

The PFFP includes modification of the southbound off-ramp striping to include a through/left-turn lane, through/right-turn lane, and right-turn lane.

Future Traffic Operation

Under the anticipated Future volumes, and with the addition of the future roadway improvements included in the PFFP, three of the five study intersections are expected to operate acceptably at LOS D or better. The intersections at Golf Course Drive West/Dowdell Avenue and Golf Course Drive West/Redwood Drive are projected to operate unacceptably at LOS E, though operation at each intersection is anticipated to improve to acceptable levels with implementation of improvements included in other future projects in the area. Future operating conditions are summarized in Table 4, and Future volumes are shown in Figure 5.

Table 4
Future PM Peak Hour Intersection Levels of Service

Study Intersection	Future Conditions	
	Delay	LOS
1. Golf Course Dr W/Dowdell Ave	65.9	E
2. Golf Course Dr W/Redwood Dr	67.8	E
3. Golf Course Dr W/US 101 S Ramps	37.5	D
4. Golf Course Dr/Commerce Blvd	38.1	D
5. Commerce Blvd/US 101 N Ramps	35.9	D

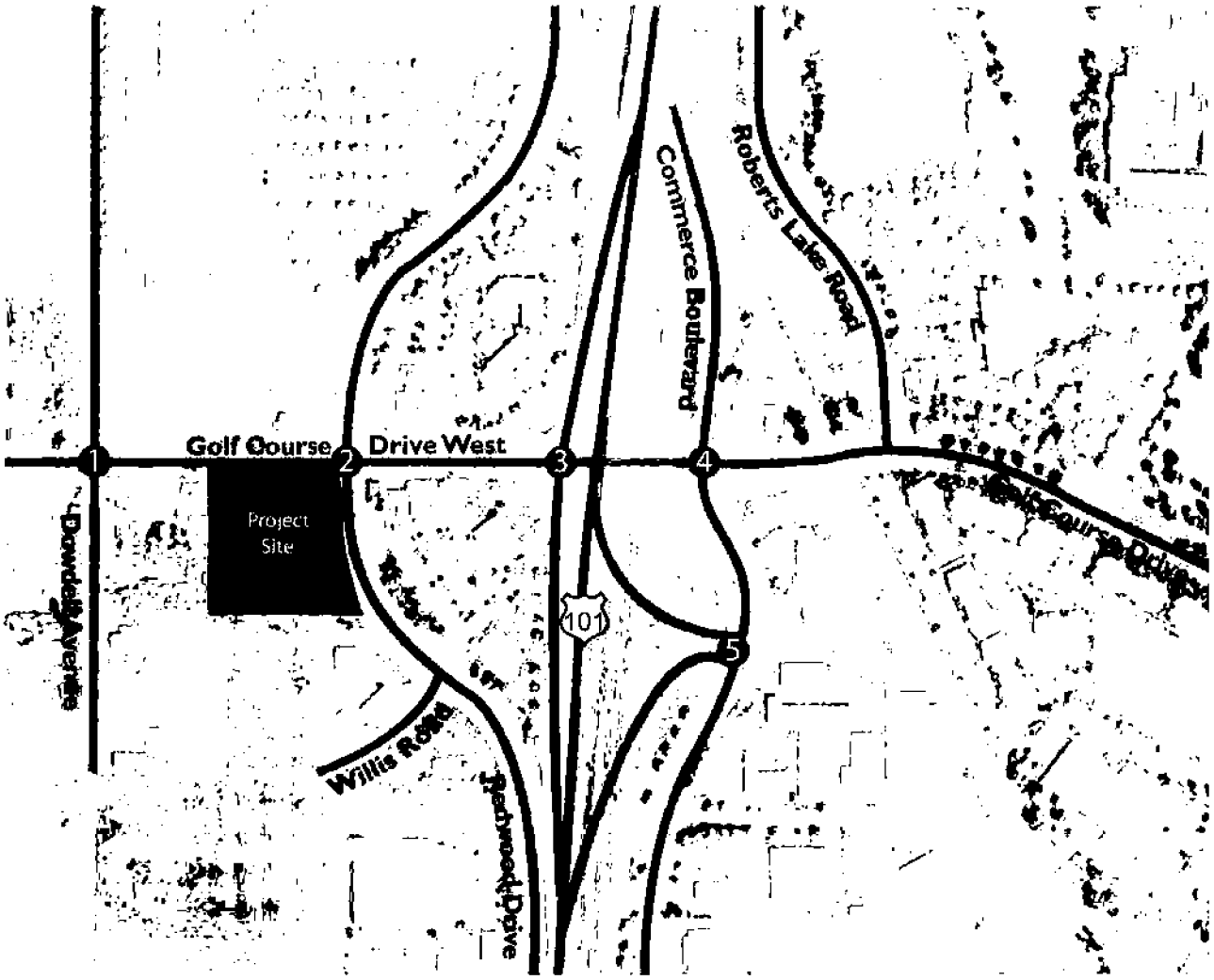
Notes Delay is measured in average seconds per vehicle; LOS = Level of Service

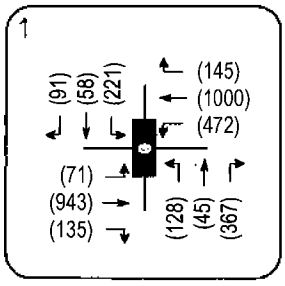
Project Description

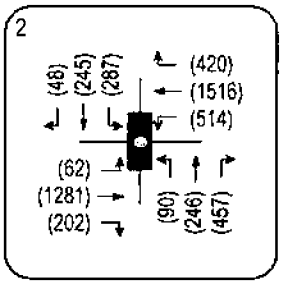
The project consists of a 3,998 square foot fast-food restaurant. The proposed project site plan is shown in Figure 6.

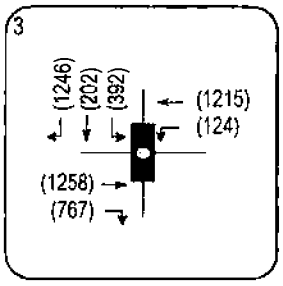
Trip Generation

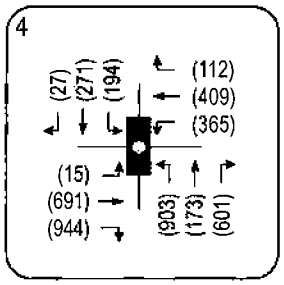
The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 9th Edition, 2012 for "Fast Food with Drive Thru" (ITE LU #934). While the project as proposed is consistent with the fast food land use description by ITE, it is recognized that this restaurant will be the first prototype for Amy's Kitchen, and that some aspects of the project may also reflect a "High Turnover (Sit-Down) Restaurant" type of land use as described by ITE. Because fast food trip generation rates are substantially higher than those for high-turnover restaurants, and because the proposed project does contain a drive-through component, the fast food trip rates were conservatively applied for the purposes of this analysis.

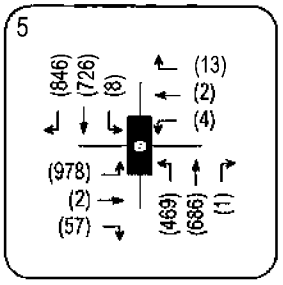












North

Not to Scale

LEGEND
● Study Intersection
(xx) P.M. Peak Hour Volume

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Traffic Impact Study for Amy's Kitchen

Figure 5 – Future (No Project) Traffic Volumes

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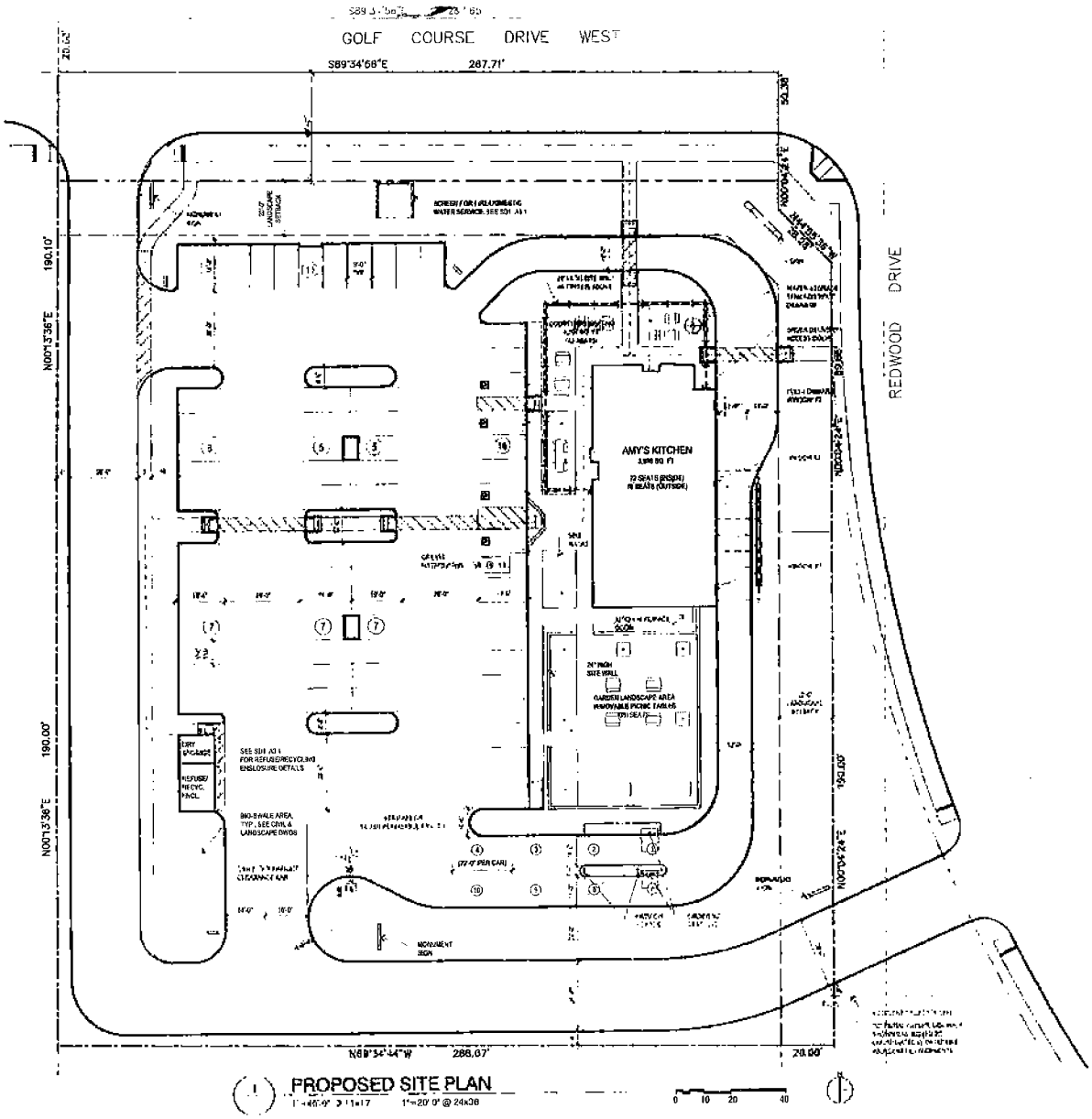

Source: Trachtenberg Architects 12/13

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Traffic Impact Study for Amy's Kitchen

Figure 6 – Site Plan

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Pass-by Trips

Some portion of traffic associated with fast food restaurant uses is drawn from existing traffic on nearby streets. These vehicle trips are not considered "new," but are instead comprised of drivers who are already driving on the adjacent street system and choose to make an interim stop, and are referred to as "pass-by." The percentage of these pass-by trips was developed based on information provided in the *Trip Generation Manual*. This reference includes pass-by data collected at numerous locations for many land uses including fast food restaurants, where an average pass-by rate of 47.6 percent has been observed. For the purposes of the proposed project, a 45 percent pass-by rate was applied as a deduction to the overall trips generated, "capturing" pass-by trips from Golf Course Drive West and Redwood Drive. This pass-by percentage appears reasonable given the existing and anticipated traffic volumes on these streets.

It should be noted that the presence of raised medians on Golf Course Drive West and Redwood Drive will require some of the anticipated pass-by traffic to alter travel patterns through the Golf Course Drive West/Redwood Drive intersection, rather than only at the project driveways themselves. For example, a westbound driver on Golf Course Drive West wishing to enter the project would turn left at Golf Course Drive West/Redwood Drive, and enter the project's Redwood Drive driveway. When that same driver departs to continue west on Golf Course Drive West, they would turn right from the restaurant's Golf Course Drive West driveway and then make a u-turn at the Golf Course Drive West/ Redwood Drive intersection. Such pass-by trips that result in changes to local travel patterns have been incorporated into the traffic analysis.

Total Project Trip Generation

The expected trip generation potential for the proposed project is indicated in Table 5, with deductions taken for pass-by trips. The proposed project is expected to generate an average of 1,984 trips per day, including 131 trips during p.m. peak hour. After pass-by deductions are taken into account, the project would be expected to add 1,091 new trips to the surrounding roadway network on a daily basis, including 72 new trips during the evening peak hour; these new trips represent the increase in traffic associated with the project compared to existing volumes.

Table 5
Trip Generation Summary

Land Use	Units	Daily		PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out
Fast Food with Drive Through	4.00 ksf	496.12	1,984	32.65	131	68	63
Pass-by	*-45%*		*-893*		*-59*	*-31*	*-28*
Total			**1,091**		**72**	**37**	**35**

Note: ksf = 1,000 square feet

Trip Generation Adjustments for the Future plus Project Scenario

The future traffic projections included in the SCTM\10 regional travel demand model and those applied in recent analyses including the *Northwest Specific Plan EIR* assume buildout of the Wilfred-Dowdell Specific Plan area, in which the proposed Amy's project is located. The Wilfred-Dowdell Specific Plan and its associated EIR assumed buildout of the project site with retail uses. Because the proposed restaurant would have a trip generation rate that is higher than the 3,998 square feet of retail uses it would be displacing from the Wilfred Dowdell Specific Plan area buildout potential, it is necessary to adjust the future traffic volumes accordingly.

Buildout of 3,998 square feet of shopping center uses as assumed in the *Wilfred/Dowdell Village Specific Plan EIR* would be expected to generate 134 daily trips and 13 p.m. peak hour trips, after accounting for a pass-by rate of 27 percent. As indicated in Table 6, the proposed project would be expected to generate 957 more daily trips and 59 more p.m. peak hour trips than the equivalent amount of shopping center. The Future plus Project scenario analyzed in this traffic impact study includes this increase in cumulative buildout trips.

Table 6
Project's Incremental Trip Generation Increase at Buildout

Land Use	Units	Daily		PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out
Original Buildout Assumption							
Shopping Center (ITE #820)*	4.00 ksf	46.12	184	4.30	17	8	9
Pass-by	*-27%*		*-50*		*-4*	*-2*	*-2*
Total			134		13	6	7
Proposed Project Trips							
Fast Food with Drive Through	4.00 ksf	496.12	1,984	32.65	131	68	63
Pass-by	*-45%*		*-893*		*-59*	*-31*	*-28*
Total			1,091		72	37	35
Incremental Increase in Buildout Trips			**957**		**59**	**31**	**28**

Note: ksf = 1,000 square feet
* Trip generation rates match those applied in *Wilfred-Dowdell Specific Plan EIR*

Trip Distribution

The pattern used to allocate new project trips to the street network was based on information from other recent traffic analyses in the area, projections from the SCTA travel demand model, existing and future traffic volume patterns, and the locations of major residential areas and sources of potential restaurant customers. The applied distribution assumptions and resulting trips are shown in Table 7.

Table 7
Trip Distribution Assumptions

Route	Percent	Daily Trips	PM Trips
US 101 N	24%	262	17
US 101 S	20%	218	15
Redwood Dr S	20%	218	14
Golf Course Dr W – west of Dowdell Ave	16%	175	12
Golf Course Dr – east of Commerce Blvd	8%	87	6
Redwood Dr – north of Golf Course Dr W	6%	66	4
Commerce Blvd – south of US 101 N Ramps	6%	65	4
TOTAL	**100%**	**1091**	**72**

Intersection Operation

Existing plus Project Conditions

Upon the addition of project-related traffic to the Existing volumes, the study intersections are expected to operate acceptably. These results are summarized in Table 8. Project traffic volumes are shown in Figure 7.

Table 8
Existing and Existing plus Project PM Peak Hour Intersection Levels of Service

Study Intersection	Existing		Existing plus Project	
	Delay	LOS	Delay	LOS
1. Golf Course Dr W/Dowdell Ave	2.2	A	2.2	A
2. Golf Course Dr W/Redwood Dr	31.8	C	33.3	C
3. Golf Course Dr W/US 101 S Ramps	20.0	C	20.2	C
4. Golf Course Dr/Commerce Blvd	28.8	C	28.9	C
5. Commerce Blvd/US 101 N Ramps	24.6	C	24.8	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

Finding: The study intersections are expected to continue operating acceptably at the same levels of service upon the addition of project-generated traffic.

Baseline plus Project Conditions

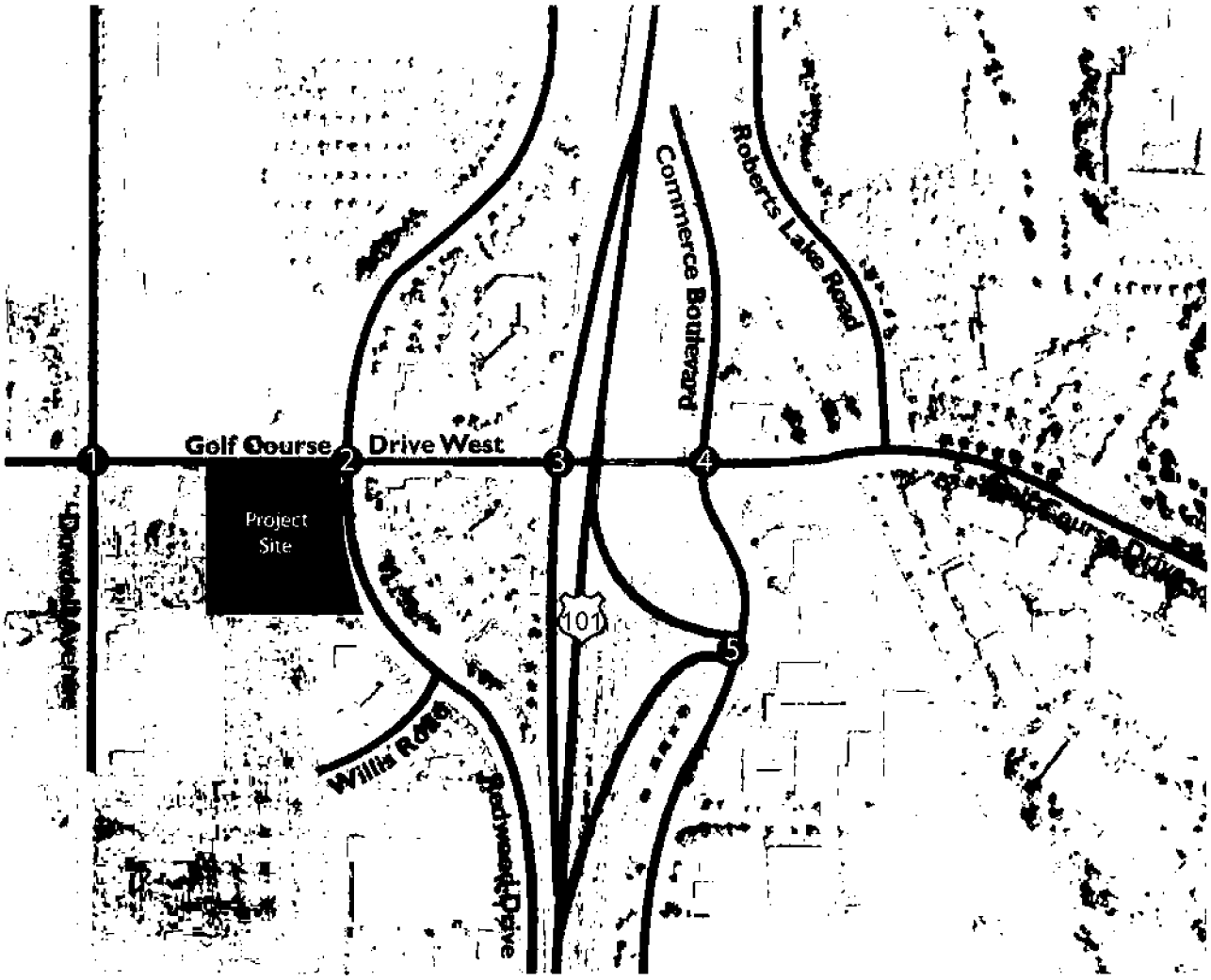
With project-related traffic added to Baseline volumes, the study intersections are expected to operate acceptably. Average vehicle delay at the intersection at Golf Course Drive West/Redwood Drive would increase by approximately 1.3 seconds, causing the level of service to change from LOS C to LOS D, though this is still considered to be an acceptable operating condition. These results are summarized in Table 9.

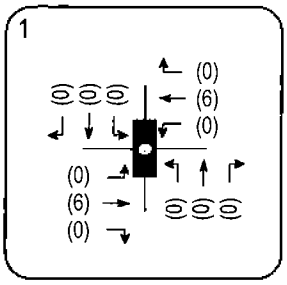
Table 9
Baseline and Baseline plus Project PM Peak Hour Intersection Levels of Service

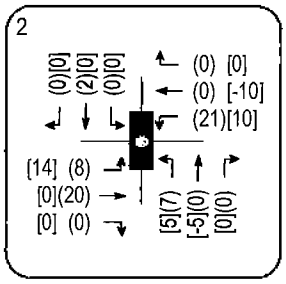
Study Intersection	Baseline		Baseline plus Project	
	Delay	LOS	Delay	LOS
1. Golf Course Dr W/Dowdell Ave	5.2	A	5.2	A
2. Golf Course Dr W/Redwood Dr	34.0	C	35.3	D
3. Golf Course Dr W/US 101 S Ramps	20.3	C	20.4	C
4. Golf Course Dr/Commerce Blvd	28.4	C	28.5	C
5. Commerce Blvd/US 101 N Ramps	24.5	C	24.6	C

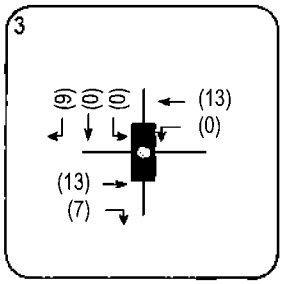
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

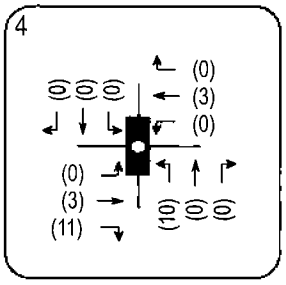
Finding: The study intersections are expected to continue operating acceptably upon the addition of project-generated traffic to Baseline volumes.

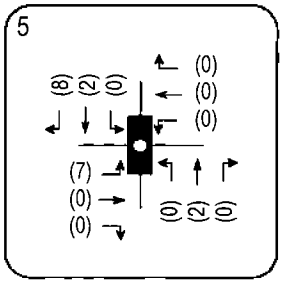


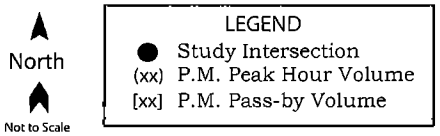












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Traffic Impact Study for Amy's Kitchen

Figure 7 – Project Traffic Volumes

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Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Future volumes, and with improvements identified in the City's PFFP, two of the study intersections are expected to operate at unacceptable levels. The intersections at Golf Course Drive West/Dowdell Avenue and Golf Course Drive West/Redwood Drive are projected to operate at LOS E, though upon completion of roadway improvements anticipated with other future projects in the area, the intersections would be expected to operate at acceptable levels. Specifically, acceptable operation could be achieved at Golf Course Drive West/Dowdell Avenue by modifying the northbound approach to include a left-turn lane, through lane, and right-turn lane, and modifying the southbound approach to include dual left-turn lanes and a shared through/right-turn lane. Acceptable operation could be achieved at the Golf Course Drive West/Redwood Drive intersection by adding a new right-turn lane on the westbound approach and changing the eastbound right-turn lane to a through/right-turn lane.

The Future plus Project operating conditions are summarized in Table 10, and Future plus Project traffic volumes are shown in Figure 8.

Table 10
Future and Future plus Project PM Peak Hour Intersection Levels of Service

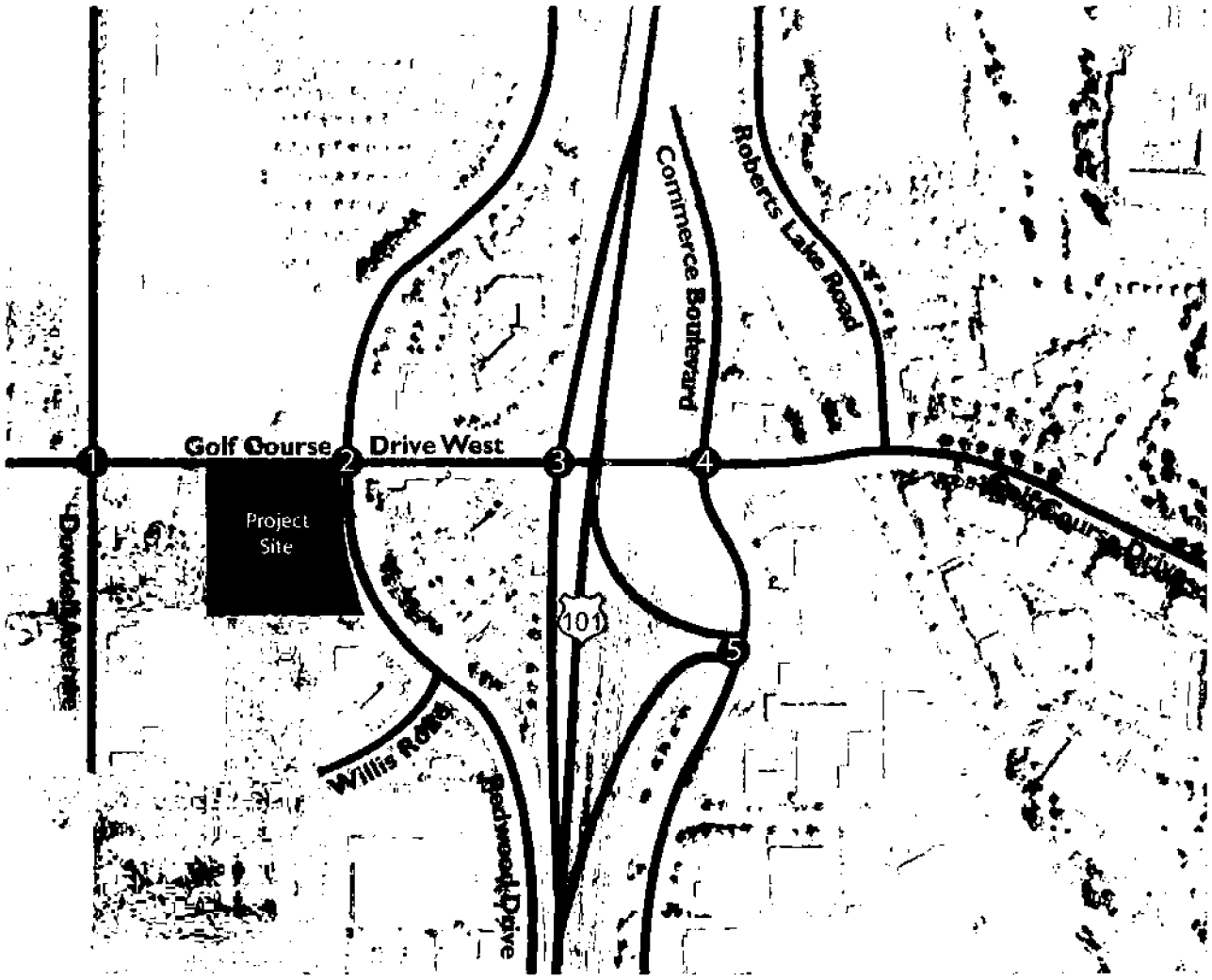
Study Intersection	Future		Future plus Project	
	Delay	LOS	Delay	LOS
1. Golf Course Dr W/Dowdell Ave	65.9	E	66.4	E
With modified lane configurations on north-bound and southbound approaches	*26.3*	*C*	*26.4*	*C*
2. Golf Course Dr W/Redwood Dr	67.8	E	71.8	E
With added westbound right turn lane and modified lanes on eastbound approach	*41.8*	*D*	*43.6*	*D*
3. Golf Course Dr W/US 101 S Ramps	37.5	D	38.0	D
4. Golf Course Dr/Commerce Blvd	38.1	D	38.4	D
5. Commerce Blvd/US 101 N Ramps	35.9	D	36.5	D

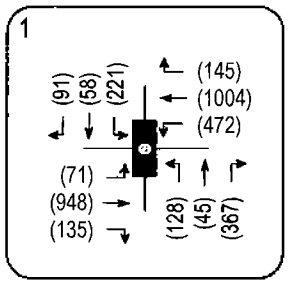
Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

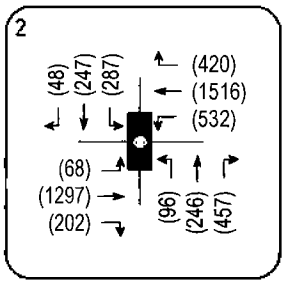
The Amy's Kitchen project would increase the average vehicle delay at Golf Course Drive West/Dowdell Avenue by 0.5 seconds, and would increase the average vehicle delay by 4.0 seconds at Golf Course Drive West/Redwood Drive. Such increases in delay would be imperceptible to drivers, and are less than the five-second incremental increase in delay that would be considered to cause a significant traffic impact.

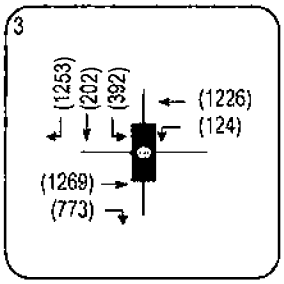
Finding: Three of the five study intersections are projected to continue operating acceptably in the future upon the addition of project-generated traffic.

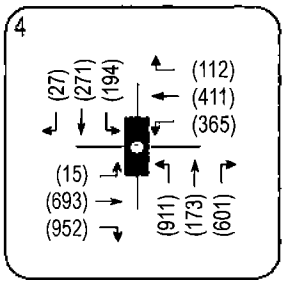
Finding: The project would add traffic to the intersections of Golf Course Drive West/Dowdell Avenue and Golf Course Drive West/Redwood Drive, both of which are already projected to be operating unacceptably in the future, though the project's incremental increases in average vehicle delay at these intersections would be less than five seconds and not constitute a significant impact.

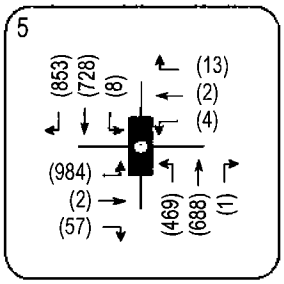












North

Not to Scale

LEGEND
● Study Intersection
(xx) P.M. Peak Hour Volume

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Traffic Impact Study for Amy's Kitchen

Figure 8 – Future plus Project Traffic Volumes

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Alternative Modes

Pedestrian Facilities

Given the proximity of existing and future commercial development surrounding the project, it is reasonable to assume that some project patrons and employees will want to walk, bicycle, and/or utilize transit to reach the project site.

Sidewalks do not exist along the project's Redwood Drive frontage, but would be constructed as part of the project's improvements. Continuous sidewalks currently exist along the project's Golf Course Drive West frontage. Upon completion of the project and the Oxford Suites/McDonald's project on the northwest corner of Golf Course Drive West/Redwood Drive, continuous sidewalks will exist along Redwood Drive, connecting to nearby commercial developments. Continuous sidewalks already exist along Golf Course Drive West between the Graton Rancheria casino and to the east of US 101, and portions of the corridor to the west of Redwood Drive with no sidewalks on the north side of the street will be improved with sidewalks as future development occurs.

Finding: Pedestrian facilities serving the project site are expected to be adequate.

Bicycle Facilities

Existing bicycle facilities, including bike lanes on Golf Course Drive West and Redwood Drive, create effective linkages to the regional bicycle system and adequate bicycle access to the project.

Bicycle Storage

The project site plan identifies six bicycle parking spaces, exceeding the City's requirement of five.

Finding: Bicycle facilities serving the project site are expected to be adequate.

Transit

Existing transit stops are within an acceptable walking distance of the site, and upon completion of the project's frontage improvements, will be accessible by a continuous network of sidewalks.

Finding: Transit facilities serving the project site are expected to be adequate.

Site Access

Access to the project would be provided by one driveway on Golf Course Drive West and one driveway on Redwood Drive.

Access Analysis

Both project driveways would be restricted to right turns in and out since raised medians exist on both of the City streets. The site's two driveways would be located as far as possible from the signalized intersection at Golf Course Drive West/Redwood Drive, minimizing the potential for conflicts or adverse operational impacts to occur. The restriction of driveway movements to right turns also minimizes conflict points and "friction" to through traffic on the fronting roadways.

As indicated in the discussion of pass-by trips above, some drivers would need to make a u-turn at Golf Course Drive West/Redwood Drive when traveling between certain origin and destination pairs. One such route includes drivers on northbound Redwood Drive wishing to enter the site, who would need to make a northbound u-turn at the signal and then turn right into the project driveway. The other affected movement includes drivers exiting the site and wishing to head westbound on Golf Course Drive West, who would first need to turn right onto Golf Course Drive West and then make a u-turn at the Redwood Drive signal. These u-turn movements have been included in the intersection capacity analysis and are expected to result in no operational concerns. Sufficient roadway width also exists on both corridors to allow passenger vehicles to negotiate the u-turn movements.

Finding: Site access is anticipated to operate acceptably.

Sight Distance

At unsignalized intersections, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. At the project's two driveways, which are restricted to right turns, adequate time must be provided for the waiting vehicle to turn without requiring the through traffic to radically alter their speed.

Sight distance along Redwood Drive and Golf Course Drive West at the project driveways was evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance at driveways is based on stopping sight distance. For an approach speed of 40 miles per hour (mph), the required stopping sight distance is 300 feet. The available sight distance from the two driveways is well in excess of 300 feet so is considered to be adequate. The site plans indicate that project monument signs will be set well back from the driveways, resulting in no impacts to sight distance.

Finding: Sufficient sight distance would exist at the project's two public street driveways.

On-Site Circulation

Onsite drive aisles and parking areas have been designed in a manner that is consistent with standard practice for similar types of restaurants and commercial centers. The restaurant's drive-through circulation pattern includes space for 11 queued vehicles at the ordering stations (a dual-lane ordering station is shown), a two-window pay and pick-up configuration, and pull-out area beyond the pick-up window to allow vehicles to pass by one another in circumstances where one customer needs to wait

for an order. This drive-through configuration should significantly reduce the potential for stacking to overflow into parking areas and/or driveways on the rest of the site and is considered to be adequate.

Pedestrians would be able to access the site directly from Redwood Drive and Golf Course Drive West via sidewalks. Where the sidewalks would cross the drive-through lanes, the site plan indicates that crosswalks and accessible curb ramps would be provided. The site plan also indicates an east-west pedestrian route passing through the center of the site, connecting the restaurant to the western drive aisle and property boundary. This route would also be designated by crosswalks where it passes through the parking area.

Finding: Onsite circulation for both vehicles and pedestrians is expected to be adequate.

Parking

The project site plan indicates that 68 vehicle parking spaces would be provided. The City of Rohnert Park's requirements for off-street parking are indicated in Section 17.16.030 of the City's zoning code. For fast-food restaurants, parking shall be provided at a ratio of one space per 50 square feet of indoor seating area plus one space per 2.5 outdoor seats. The project includes 900 square feet of indoor seating area and 76 outdoor seats, resulting in a total parking requirement of 48 spaces. The project therefore exceeds the City's parking requirements by 20 spaces. Bicycle parking requirements are indicated in Section 17.16.140 of the zoning code, and specify that fast food restaurants are to provide five bicycle parking spaces. The proposed project designates six bicycle parking spaces so meets this requirement.

Finding: The project's parking supply exceeds City standards and is expected to be adequate.

Conclusions

- Under existing and baseline conditions without the project, all five study intersections are projected to operate acceptably at LOS C or better.

- Under the anticipated Future volumes and with improvements identified in the City's PFFP, three of the five study intersections are expected to operate acceptably at LOS D or better. The intersections at Golf Course Drive West/Dowdell Avenue and Golf Course Drive West/Redwood Drive are projected to operate at unacceptable levels.

- After accounting for traffic generated by pass-by vehicles, the proposed project is expected to add 1,091 new trips to the surrounding roadway network on a daily basis, including 72 new trips during the evening peak hour.

- Upon the addition of project-related traffic to existing and baseline volumes, including diversions necessary due to the right-turn only access, the study intersections are expected to continue operating acceptably.

- The proposed project would be expected to generate 957 more daily trips and 59 more p.m. peak hour trips than would have been generated by the equivalent 3,998 square feet of shopping center type uses assumed in the applied future traffic projections.

- Upon the addition of project-generated traffic to future volumes, reflecting the change in assumed land use from shopping center to fast-food restaurant, the study intersections are expected to operate at the same Levels of Service as under future conditions without the project.

- The project would add traffic to the intersections of Golf Course Drive West/Dowdell Avenue and Golf Course Drive West/Redwood Drive, both of which are already projected to be operating unacceptably in the future.

- The project's incremental increases in average vehicle delay at Golf Course Drive West/Dowdell Avenue and Golf Course Drive West/Redwood Drive would be less than five seconds, and would therefore not constitute a significant impact.

- Upon completion of the project's frontage improvements and those associated with the nearby Oxford Suites/McDonald's project, continuous sidewalks will exist along Redwood Drive and Golf Course Drive West, connecting to nearby commercial developments and transit stops. Pedestrian facilities serving the project site are expected to be adequate.

- Existing bicycle facilities, including bike lanes on Golf Course Drive West and Redwood Drive, create effective linkages to the regional bicycle system and adequate bicycle access to the project.

- Existing transit stops are within an acceptable walking distance of the site, and upon completion of the project's frontage improvements, will be accessible by a continuous network of sidewalks.

- The restriction of vehicular movements at both project driveways to right turns minimizes conflict points and adverse influences to through traffic on the fronting roadways.

- Sufficient roadway width exists at the Golf Course Drive West/Redwood Drive intersection to accommodate potential u-turn movements associated with the project.

- Sufficient sight distance would exist at the project's two public street driveways.

- The project's onsite vehicular circulation is expected to operate acceptably, including the restaurant's drive-through component.
- Onsite pedestrian circulation and pedestrian connectivity to adjacent public streets and transit stops are expected to be adequate.
- The project exceeds the City's parking requirements by 20 spaces, and is therefore expected to provide an adequate supply.

Study Participants

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RPA907-39

Intersection Level of Service Calculations

HCM Signalized Intersection Capacity Analysis
1: Dowdell Ave & Golf Course Dr 2/6/2014

Lane Configurations												
Volume (vph)	20	476	1	1	518	5	1	0	1	8	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			0.93			0.90	
Flt Protected		1.00			1.00			0.98			0.99	
Satd. Flow (prot)		3531			3534			1695			1656	
Flt Permitted		0.92			0.95			0.97			0.91	
Satd. Flow (perm)		3259			3374			1679			1525	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	517	1	1	563	5	1	0	1	9	0	25
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	24	0
Lane Group Flow (vph)	0	540	0	0	569	0	0	0	0	0	10	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		98.7			98.7			3.3			3.3	
Effective Green, g (s)		98.7			98.7			3.3			3.3	
Actuated g/C Ratio		0.90			0.90			0.03			0.03	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		1.5			1.5			1.0			1.0	
Lane Grp Cap (vph)		2924			3027			50			45	
v/s Ratio Prot												
v/s Ratio Perm		0.17			c0.17			0.00			c0.01	
v/c Ratio		0.18			0.19			0.00			0.22	
Uniform Delay, d1		0.7			0.7			51.8			52.1	
Progression Factor		1.00			0.17			1.00			1.00	
Incremental Delay, d2		0.1			0.1			0.0			0.9	
Delay (s)		0.8			0.2			51.8			53.0	
Level of Service		A			A			D			D	
Approach Delay (s)		0.8			0.2			51.8			53.0	
Approach LOS		A			A			D			D	

HCM 2000 Control Delay	2.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Redwood Dr & Golf Course Dr 2/6/2014

Lane Configurations												
Volume (vph)	26	479	57	300	512	353	33	211	278	185	269	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	13	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1535	1770	3402		1770	3539	1514	1770	3462	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1535	1770	3402		1770	3539	1514	1770	3462	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	504	60	316	539	372	35	222	293	195	220	28
RTOR Reduction (vph)	0	0	38	0	89	0	0	0	257	0	11	0
Lane Group Flow (vph)	27	504	22	316	822	0	35	222	36	195	237	0
Confl. Peds (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	9.1	41.0	41.0	23.8	55.7		3.5	13.6	13.6	15.6	25.7	
Effective Green, g (s)	9.1	41.0	41.0	23.8	55.7		3.5	13.6	13.6	15.6	25.7	
Actuated g/C Ratio	0.08	0.37	0.37	0.22	0.51		0.03	0.12	0.12	0.14	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.5	1.5		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	146	1319	572	382	1722		56	437	187	251	808	
v/s Ratio Prot	0.02	c0.14		c0.18	c0.24		0.02	c0.06		c0.11	0.07	
v/s Ratio Perm			0.01						0.02			
v/c Ratio	0.18	0.38	0.04	0.83	0.48		0.62	0.51	0.19	0.78	0.29	
Uniform Delay, d1	47.0	25.2	22.0	41.1	17.7		52.6	45.1	43.3	45.5	34.7	
Progression Factor	0.99	0.98	1.00	0.91	0.77		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.8	0.1	12.2	0.9		14.6	0.3	0.2	12.8	0.1	
Delay (s)	46.8	25.5	22.1	49.7	14.5		67.2	45.4	43.5	58.4	34.8	
Level of Service	D	C	C	D	B		E	D	D	E	C	
Approach Delay (s)		26.1			23.6			45.8			45.1	
Approach LOS		C			C			D			D	

HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: US 101 South Ramps & Golf Course Dr

2/6/2014

Lane Configurations												
Volume (vph)	0	560	396	107	621	0	0	0	0	338	174	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5					4.5	4.5	
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	
Frpb, ped/bikes		1.00	0.96	1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1527	3433	3539					1610	2950	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1527	3433	3539					1610	2950	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	589	417	113	654	0	0	0	0	356	183	561
RTOR Reduction (vph)	0	0	221	0	0	0	0	0	0	0	110	0
Lane Group Flow (vph)	0	589	196	113	654	0	0	0	0	320	670	0
Confl. Peds. (#/hr)			10									10
Confl. Bikes (#/hr)			10									10
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases			6									
Actuated Green, G (s)		51.6	51.6	7.0	63.1					37.9	37.9	
Effective Green, g (s)		51.6	51.6	7.0	63.1					37.9	37.9	
Actuated g/C Ratio		0.47	0.47	0.06	0.57					0.34	0.34	
Clearance Time (s)		4.5	4.5	4.5	4.5					4.5	4.5	
Vehicle Extension (s)		1.5	1.5	1.0	1.5					1.5	1.5	
Lane Grp Cap (vph)		1660	716	218	2030					554	1016	
v/s Ratio Prot		c0.17		c0.03	0.18					0.20	c0.23	
v/s Ratio Perm			0.13									
v/c Ratio		0.35	0.27	0.52	0.32					0.58	0.91dr	
Uniform Delay, d1		18.6	17.8	49.9	12.3					29.5	30.6	
Progression Factor		0.63	0.96	0.66	0.53					1.00	1.00	
Incremental Delay, d2		0.5	0.9	0.8	0.4					0.9	1.2	
Delay (s)		12.3	17.9	33.7	6.9					30.4	31.8	
Level of Service		B	B	C	A					C	C	
Approach Delay (s)		14.6			10.8			0.0			31.4	
Approach LOS		B			B			A			C	

HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Commerce Blvd & Golf Course Dr

2/6/2014

Lane Configurations												
Volume (vph)	13	416	445	315	279	46	452	140	518	150	201	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	13	12	12	12
Total Lost time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1572	3433	3434		3433	1863	1616	1770	1845	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1572	3433	3434		3433	1863	1616	1770	1845	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	13	424	454	321	285	47	471	143	529	153	205	11
RTOR Reduction (vph)	0	0	100	0	16	0	0	0	97	0	2	0
Lane Group Flow (vph)	13	424	354	321	316	0	471	143	432	153	214	0
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6	4	5	2		4	4	5	3	3	
Permitted Phases			6						4			
Actuated Green, G (s)	2.8	15.9	62.2	15.1	28.2		46.3	46.3	61.4	16.3	16.3	
Effective Green, g (s)	2.8	15.9	62.2	15.1	28.2		46.3	46.3	61.4	16.3	16.3	
Actuated g/C Ratio	0.03	0.14	0.57	0.14	0.26		0.42	0.42	0.56	0.15	0.15	
Clearance Time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Vehicle Extension (s)	1.0	1.5	1.5	1.0	1.5		1.5	1.5	1.0	1.5	1.5	
Lane Grp Cap (vph)	45	735	947	471	880		1444	784	902	262	273	
v/s Ratio Prot	0.01	c0.08	0.16	c0.09	0.09		0.14	0.08	c0.07	0.09	c0.12	
v/s Ratio Perm			0.07						0.20			
v/c Ratio	0.29	0.58	0.37	0.68	0.36		0.33	0.18	0.48	0.58	0.78	
Uniform Delay, d1	52.6	43.9	13.2	45.2	33.5		21.4	20.0	14.7	43.7	45.2	
Progression Factor	1.18	0.79	1.34	0.87	0.83		1.02	0.99	1.04	1.00	1.00	
Incremental Delay, d2	1.2	0.6	0.1	3.2	0.1		0.6	0.5	0.1	2.1	12.8	
Delay (s)	63.3	35.3	17.7	42.5	28.0		22.4	20.3	15.4	45.8	57.9	
Level of Service	E	D	B	D	C		C	C	B	D	E	
Approach Delay (s)		26.7			35.2			18.9			52.9	
Approach LOS		C			D			B			D	

HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Commerce Blvd & US 101 North Ramps 2/6/2014

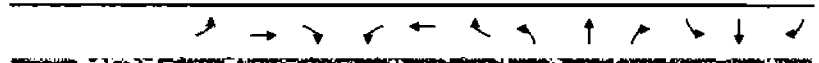
Lane Configurations												
Volume (vph)	592	2	29	4	2	13	306	506	1	8	423	529
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	16	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		0.89		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1686	1794		1484		1770	3538		1770	3539	1561
Flt Permitted	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1793	1686	1794		1484		1770	3538		1770	3539	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	631	2	31	4	2	14	322	533	1	8	445	557
RTOR Reduction (vph)	0	0	11	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	315	318	20	0	6	0	322	534	0	8	445	557
Confl. Peds (#/hr)						10			10			
Confl. Bikes (#/hr)									10			10
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Free
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									Free
Actuated Green, G (s)	47.4	47.4	71.6		2.2		24.2	44.5		0.9	21.2	110.0
Effective Green, g (s)	47.4	47.4	71.6		2.2		24.2	44.5		0.9	21.2	110.0
Actuated g/C Ratio	0.43	0.43	0.65		0.02		0.22	0.40		0.01	0.19	1.00
Clearance Time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	
Vehicle Extension (s)	1.5	1.5	1.0		1.0		1.0	1.5		1.0	1.5	
Lane Grp Cap (vph)	772	726	1167		29		389	1431		14	682	1561
v/s Ratio Prot	0.18	c0.19	0.00		0.00		c0.18	0.15		0.00	c0.13	
v/s Ratio Perm			0.01									c0.36
v/c Ratio	0.41	0.44	0.02		0.22		0.83	0.37		0.57	0.65	0.36
Uniform Delay, d1	21.6	22.0	6.8		53.1		40.9	23.0		54.4	41.0	0.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.20	0.84	1.00
Incremental Delay, d2	1.6	1.9	0.0		1.4		12.9	0.1		28.1	1.6	0.6
Delay (s)	23.2	23.9	6.8		54.4		53.8	23.0		93.3	35.9	0.6
Level of Service	C	C	A		D		D	C		F	D	A
Approach Delay (s)		22.8			54.4			34.6			16.9	
Approach LOS		C			D			C			B	

HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Dowdell Ave & Golf Course Dr

2/6/2014



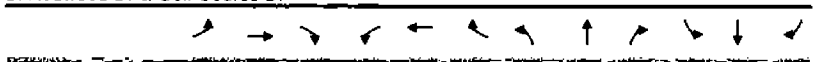
Lane Configurations												
Volume (vph)	20	482	1	1	524	5	1	0	1	8	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			0.93			0.90	
Flt Protected		1.00			1.00			0.98			0.99	
Satd. Flow (prot)		3531			3534			1695			1656	
Flt Permitted		0.92			0.95			0.97			0.91	
Satd. Flow (perm)		3259			3375			1679			1525	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	524	1	1	570	5	1	0	1	9	0	25
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	24	0
Lane Group Flow (vph)	0	547	0	0	576	0	0	0	0	0	10	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		98.7			98.7			3.3			3.3	
Effective Green, g (s)		98.7			98.7			3.3			3.3	
Actuated g/C Ratio		0.90			0.90			0.03			0.03	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		1.5			1.5			1.0			1.0	
Lane Grp Cap (vph)		2924			3028			50			45	
v/s Ratio Prot												
v/s Ratio Perm		0.17			c0.17			0.00			c0.01	
v/c Ratio		0.19			0.19			0.00			0.22	
Uniform Delay, d1		0.7			0.7			51.8			52.1	
Progression Factor		1.00			0.17			1.00			1.00	
Incremental Delay, d2		0.1			0.1			0.0			0.9	
Delay (s)		0.8			0.2			51.8			53.0	
Level of Service		A			A			D			D	
Approach Delay (s)		0.8			0.2			51.8			53.0	
Approach LOS		A			A			D			D	

HCM 2000 Control Delay	2.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Redwood Dr & Golf Course Dr

2/6/2014



Lane Configurations												
Volume (vph)	48	499	57	331	502	353	45	206	278	185	211	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	13	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.96	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1534	1770	3398		1770	3539	1512	1770	3463	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1534	1770	3398		1770	3539	1512	1770	3463	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	525	60	348	528	372	47	217	293	195	222	28
RTOR Reduction (vph)	0	0	38	0	98	0	0	0	259	0	11	0
Lane Group Flow (vph)	51	525	22	348	802	0	47	217	34	195	239	0
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	14.1	40.0	40.0	25.7	51.6		4.6	12.7	12.7	15.6	23.7	
Effective Green, g (s)	14.1	40.0	40.0	25.7	51.6		4.6	12.7	12.7	15.6	23.7	
Actuated g/C Ratio	0.13	0.36	0.36	0.23	0.47		0.04	0.12	0.12	0.14	0.22	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.5	1.5		1.0	1.5	1.5	1.0	1.5	
Lane Grp Cap (vph)	226	1286	557	413	1593		74	408	174	251	746	
v/s Ratio Prot	0.03	c0.15		c0.20	c0.24		0.03	c0.06		c0.11	0.07	
v/s Ratio Perm			0.01						0.02			
v/c Ratio	0.23	0.41	0.04	0.84	0.50		0.64	0.53	0.19	0.78	0.32	
Uniform Delay, d1	43.0	26.2	22.6	40.2	20.3		51.9	45.8	44.0	45.5	36.4	
Progression Factor	0.99	0.98	1.00	0.93	0.74		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.0	0.1	12.9	1.1		12.4	0.7	0.2	12.8	0.1	
Delay (s)	42.7	26.6	22.7	50.5	16.0		64.2	46.5	44.2	58.4	36.5	
Level of Service	D	C	C	D	B		E	D	D	E	D	
Approach Delay (s)		27.5			25.6			46.8			46.1	
Approach LOS		C			C			D			D	

HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: US 101 South Ramps & Golf Course Dr

2/6/2014

Lane Configurations													
Volume (vph)	0	573	403	187	634	0	0	0	0	338	174	542	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.5	4.5	4.5	4.5					4.5	4.5		
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91		
Frpb, ped/bikes		1.00	0.96	1.00	1.00					1.00	0.98		
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00		
Frt		1.00	0.85	1.00	1.00					1.00	0.89		
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00		
Satd. Flow (prot)		3539	1527	3433	3539					1610	2948		
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00		
Satd. Flow (perm)		3539	1527	3433	3539					1610	2948		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	0	603	424	113	667	0	0	0	0	356	183	571	
RTOR Reduction (vph)	0	0	229	0	0	0	0	0	0	0	104	0	
Lane Group Flow (vph)	0	603	195	113	667	0	0	0	0	320	586	0	
Confl. Peds. (#/hr)			10									10	
Confl. Bikes (#/hr)			10									10	
Turn Type		NA	Perm	Prot	NA					Split	NA		
Protected Phases		6		5	2					8	8		
Permitted Phases			6										
Actuated Green, G (s)		50.7	50.7	7.1	62.3					38.7	38.7		
Effective Green, g (s)		50.7	50.7	7.1	62.3					38.7	38.7		
Actuated g/C Ratio		0.46	0.46	0.06	0.57					0.35	0.35		
Clearance Time (s)		4.5	4.5	4.5	4.5					4.5	4.5		
Vehicle Extension (s)		1.5	1.5	1.0	1.5					1.5	1.5		
Lane Grp Cap (vph)		1631	703	221	2004					566	1037		
v/s Ratio Prot		c0.17		c0.03	0.19					0.20	c0.23		
v/s Ratio Perm			0.13										
v/c Ratio		0.37	0.28	0.51	0.33					0.57	0.92dr		
Uniform Delay, d1		19.3	18.3	49.8	12.7					28.8	30.1		
Progression Factor		0.58	1.15	0.65	0.48					1.00	1.00		
Incremental Delay, d2		0.6	0.9	0.8	0.4					0.8	1.2		
Delay (s)		11.8	22.0	33.0	6.6					29.6	31.3		
Level of Service		B	C	C	A					C	C		
Approach Delay (s)		16.0			10.4			0.0			30.9		
Approach LOS		B			B			A			C		

HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

dr Defacto Right Lane Recode with 1 though lane as a right lane
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Commerce Blvd & Golf Course Dr

2/6/2014

Lane Configurations													
Volume (vph)	13	419	456	315	282	46	472	140	518	150	201	11	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	12	12	12	12	13	12	12	12	
Total Lost time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		0.97	1.00	1.00	1.00	1.00		
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	1.00	1.00		
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.99		
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1770	5085	1572	3433	3435		3433	1863	1616	1770	1845		
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1770	5085	1572	3433	3435		3433	1863	1616	1770	1845		
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	13	428	465	321	288	47	482	143	529	153	205	11	
RTOR Reduction (vph)	0	0	100	0	16	0	0	0	97	0	2	0	
Lane Group Flow (vph)	13	428	365	321	319	0	482	143	432	153	214	0	
Confl. Peds. (#/hr)			10			10						10	
Confl. Bikes (#/hr)			10			10			10			10	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA		
Protected Phases	1	6	4	5	2		4	4	5	3	3		
Permitted Phases			6						4				
Actuated Green, G (s)	2.8	16.0	62.2	15.1	28.3		46.2	46.2	61.3	16.3	16.3		
Effective Green, g (s)	2.8	16.0	62.2	15.1	28.3		46.2	46.2	61.3	16.3	16.3		
Actuated g/C Ratio	0.03	0.15	0.57	0.14	0.26		0.42	0.42	0.56	0.15	0.15		
Clearance Time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1		
Vehicle Extension (s)	1.0	1.5	1.5	1.0	1.5		1.5	1.5	1.0	1.5	1.5		
Lane Grp Cap (vph)	45	739	947	471	883		1441	782	900	262	273		
v/s Ratio Prot	0.01	c0.08	0.16	c0.09	0.09		0.14	0.08	c0.07	0.09	c0.12		
v/s Ratio Perm			0.07						0.20				
v/c Ratio	0.29	0.58	0.39	0.68	0.36		0.33	0.18	0.48	0.58	0.78		
Uniform Delay, d1	52.6	43.9	13.3	45.2	33.5		21.5	20.0	14.7	43.7	45.2		
Progression Factor	1.16	0.81	1.25	0.87	0.83		1.02	0.99	1.09	1.00	1.00		
Incremental Delay, d2	1.2	0.6	0.1	3.2	0.1		0.6	0.5	0.1	2.1	12.8		
Delay (s)	62.2	36.3	16.7	42.6	28.0		22.6	20.2	16.3	45.8	57.9		
Level of Service	E	D	B	D	C		C	C	B	D	E		
Approach Delay (s)		26.6			35.1			19.4			52.9		
Approach LOS		C			D			B			D		

HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.4
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Commerce Blvd & US 101 North Ramps 2/6/2014

Lane Configurations												
Volume (vph)	606	2	29	4	2	13	306	508	1	8	425	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	16	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		0.89		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1686	1794		1484		1770	3538		1770	3539	1561
Flt Permitted	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1793	1686	1794		1484		1770	3538		1770	3539	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	638	2	31	4	2	14	322	535	1	8	447	565
RTOR Reduction (vph)	0	0	11	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	319	321	20	0	6	0	322	536	0	8	447	565
Confl. Peds. (#/hr)						10			10			
Confl. Bikes (#/hr)									10			10
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Free
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									Free
Actuated Green, G (s)	47.3	47.3	71.5		2.2		24.2	44.6		0.9	21.3	110.0
Effective Green, g (s)	47.3	47.3	71.5		2.2		24.2	44.6		0.9	21.3	110.0
Actuated g/C Ratio	0.43	0.43	0.65		0.02		0.22	0.41		0.01	0.19	1.00
Clearance Time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	
Vehicle Extension (s)	1.5	1.5	1.0		1.0		1.0	1.5		1.0	1.5	
Lane Grp Cap (vph)	770	724	1166		29		389	1434		14	685	1561
v/s Ratio Prot	0.18	c0.19	0.00		0.00		c0.18	0.15		0.00	c0.13	
v/s Ratio Perm			0.01									c0.36
v/c Ratio	0.41	0.44	0.02		0.22		0.83	0.37		0.57	0.65	0.36
Uniform Delay, d1	21.7	22.1	6.8		53.1		40.9	22.9		54.4	40.9	0.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.17	0.87	1.00
Incremental Delay, d2	1.6	2.0	0.0		1.4		12.9	0.1		28.0	1.6	0.6
Delay (s)	23.4	24.0	6.8		54.4		53.8	23.0		91.4	37.0	0.6
Level of Service	C	C	A		D		D	C		F	D	A
Approach Delay (s)		22.9			54.4			34.5			17.3	
Approach LOS		C			D			C			B	

HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Dowdell Ave & Golf Course Dr

2/6/2014

Lane Configurations												
Volume (vph)	26	478	1	1	519	45	1	15	1	34	17	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.99			0.99			0.96	
Flt Protected		1.00			1.00			1.00			0.98	
Satd. Flow (prot)		3529			3497			1844			1744	
Flt Permitted		0.90			0.95			0.99			0.84	
Satd. Flow (perm)		3199			3339			1831			1504	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	520	1	1	564	49	1	16	1	37	18	25
RTOR Reduction (vph)	0	0	0	0	6	0	0	1	0	0	15	0
Lane Group Flow (vph)	0	549	0	0	608	0	0	17	0	0	65	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		94.3			94.3			7.7			7.7	
Effective Green, g (s)		94.3			94.3			7.7			7.7	
Actuated g/C Ratio		0.86			0.86			0.07			0.07	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		1.5			1.5			1.0			1.0	
Lane Grp Cap (vph)		2742			2862			128			105	
v/s Ratio Prot												
v/s Ratio Perm		0.17			c0.18			0.01			c0.04	
v/c Ratio		0.20			0.21			0.13			0.62	
Uniform Delay, d1		1.4			1.4			48.0			49.7	
Progression Factor		1.00			0.14			1.00			1.00	
Incremental Delay, d2		0.2			0.1			0.2			7.9	
Delay (s)		1.5			0.3			48.2			57.6	
Level of Service		A			A			D			E	
Approach Delay (s)		1.5			0.3			48.2			57.6	
Approach LOS		A			A			D			E	

HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.24			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	50.1%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
2: Redwood Dr & Golf Course Dr

2/6/2014

Lane Configurations												
Volume (vph)	29	504	64	325	546	397	39	725	292	251	224	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	13	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1533	1770	3394		1770	3539	1516	1770	3539	1518
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1533	1770	3394		1770	3539	1516	1770	3539	1518
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	531	67	342	575	418	41	237	307	264	236	32
RTOR Reduction (vph)	0	0	46	0	96	0	0	0	267	0	0	23
Lane Group Flow (vph)	31	531	21	342	897	0	41	237	40	264	236	9
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Actuated Green, G (s)	6.4	35.2	35.2	25.4	54.2		3.6	14.3	14.3	19.1	29.8	29.8
Effective Green, g (s)	6.4	35.2	35.2	25.4	54.2		3.6	14.3	14.3	19.1	29.8	29.8
Actuated g/C Ratio	0.06	0.32	0.32	0.23	0.49		0.03	0.13	0.13	0.17	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0	1.5	1.5		1.0	1.5	1.5	1.0	1.5	1.5
Lane Grp Cap (vph)	102	1132	490	408	1672		57	460	197	307	958	411
v/s Ratio Prot	0.02	c0.15		c0.19	c0.26		0.02	c0.07		c0.15	0.07	
v/s Ratio Perm			0.01						0.03			0.01
v/c Ratio	0.30	0.47	0.04	0.84	0.54		0.72	0.52	0.20	0.86	0.25	0.02
Uniform Delay, d1	49.7	29.9	25.8	40.3	19.2		52.7	44.6	42.8	44.2	31.3	29.4
Progression Factor	0.97	0.95	1.00	0.92	0.79		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.4	0.2	12.2	1.1		30.1	0.4	0.2	20.0	0.0	0.0
Delay (s)	48.7	29.9	26.0	49.4	16.3		82.8	45.0	42.9	64.1	31.4	29.4
Level of Service	D	C	C	D	B		F	D	D	E	C	C
Approach Delay (s)		30.4			24.8			46.6			47.5	
Approach LOS		C			C			D			D	

HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	76.0%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
3: US 101 South Ramps & Golf Course Dr

2/6/2014

Lane Configurations		↑↑	↱	↰↰	↑↑					↰	↓↳	
Volume (vph)	0	633	428	107	662	0	0	0	0	338	174	596
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5					4.5	4.5	
Lane Util. Factor		0.95	1.00	0.97	0.95					0.91	0.91	
Frpb, ped/bikes		1.00	0.96	1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	
Frt		1.00	0.85	1.00	1.00					1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1526	3433	3539					1610	2939	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1526	3433	3539					1610	2939	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	666	451	113	697	0	0	0	0	356	183	627
RTOR Reduction (vph)	0	0	255	0	0	0	0	0	0	0	92	0
Lane Group Flow (vph)	0	666	196	113	697	0	0	0	0	320	754	0
Confl. Peds. (#/hr)			10									10
Confl. Bikes (#/hr)			10									10
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases			6									
Actuated Green, G (s)		47.9	47.9	7.0	59.4					41.6	41.6	
Effective Green, g (s)		47.9	47.9	7.0	59.4					41.6	41.6	
Actuated g/C Ratio		0.44	0.44	0.06	0.54					0.38	0.38	
Clearance Time (s)		4.5	4.5	4.5	4.5					4.5	4.5	
Vehicle Extension (s)		1.5	1.5	1.0	1.5					1.5	1.5	
Lane Grp Cap (vph)		1541	664	218	1911					608	1111	
v/s Ratio Prot		c0.19		c0.03	0.20					0.20	c0.26	
v/s Ratio Perm			0.13									
v/c Ratio		0.43	0.30	0.52	0.36					0.53	0.97dr	
Uniform Delay, d1		21.6	20.1	49.9	14.5					26.6	28.6	
Progression Factor		0.61	1.03	0.70	0.53					1.00	1.00	
Incremental Delay, d2		0.8	1.0	0.8	0.5					0.4	1.3	
Delay (s)		13.9	21.6	35.6	8.3					26.9	29.9	
Level of Service		B	C	D	A					C	C	
Approach Delay (s)		17.0			12.1			0.0			29.1	
Approach LOS		B			B			A			C	

HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	65.2%	ICU Level of Service	C	
Analysis Period (min)	15			

dr Defacto Right Lane Recode with 1 though lane as a right lane.
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Commerce Blvd & Golf Course Dr

2/6/2014

Lane Configurations	↰	↑↑↑	↱	↰↰	↑↳		↰↰	↑	↱	↰	↓	
Volume (vph)	13	429	505	315	294	49	488	150	518	154	203	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	13	12	12	12
Total Lost time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1571	3433	3433		3433	1863	1616	1770	1845	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1571	3433	3433		3433	1863	1616	1770	1845	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	13	438	515	321	300	50	498	153	529	157	207	11
RTOR Reduction (vph)	0	0	99	0	15	0	0	0	95	0	2	0
Lane Group Flow (vph)	13	438	416	321	335	0	498	153	434	157	216	0
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6	4	5	2		4	4	5	3	3	
Permitted Phases			6						4			
Actuated Green, G (s)	2.8	16.6	62.0	15.2	29.0		45.4	45.4	60.6	16.4	16.4	
Effective Green, g (s)	2.8	16.6	62.0	15.2	29.0		45.4	45.4	60.6	16.4	16.4	
Actuated g/C Ratio	0.03	0.15	0.56	0.14	0.26		0.41	0.41	0.55	0.15	0.15	
Clearance Time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Vehicle Extension (s)	1.0	1.5	1.5	1.0	1.5		1.5	1.5	1.0	1.5	1.5	
Lane Grp Cap (vph)	45	767	944	474	905		1416	768	890	263	275	
v/s Ratio Prot	0.01	c0.09	0.18	c0.09	0.10		0.15	0.08	c0.07	0.09	c0.12	
v/s Ratio Perm			0.08						0.20			
v/c Ratio	0.29	0.57	0.44	0.68	0.37		0.35	0.20	0.49	0.60	0.79	
Uniform Delay, d1	52.6	43.4	13.9	45.1	33.0		22.2	20.7	15.2	43.7	45.1	
Progression Factor	1.13	0.84	1.06	0.87	0.83		1.01	0.99	0.99	1.00	1.00	
Incremental Delay, d2	1.2	0.6	0.1	3.0	0.1		0.7	0.6	0.1	2.4	12.8	
Delay (s)	60.7	37.1	14.9	42.2	27.6		23.2	20.9	15.2	46.1	57.9	
Level of Service	E	D	B	D	C		C	C	B	D	E	
Approach Delay (s)		25.6			34.6			19.3			53.0	
Approach LOS		C			C			B			D	

HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.4	
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Commerce Blvd & US 101 North Ramps 2/6/2014

Lane Configurations												
Volume (vph)	629	2	29	4	2	13	306	512	1	8	429	585
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	16	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		0.89		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1686	1794		1484		1770	3538		1770	3539	1561
Flt Permitted	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1793	1686	1794		1484		1770	3538		1770	3539	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	662	2	31	4	2	14	322	539	1	8	452	616
RTOR Reduction (vph)	0	0	11	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	331	333	20	0	6	0	322	540	0	8	452	616
Confl. Peds (#/hr)						10			10			
Confl. Bikes (#/hr)									10			10
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Free
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									Free
Actuated Green, G (s)	47.2	47.2	71.4		2.2		24.2	44.7		0.9	21.4	110.0
Effective Green, g (s)	47.2	47.2	71.4		2.2		24.2	44.7		0.9	21.4	110.0
Actuated g/C Ratio	0.43	0.43	0.65		0.02		0.22	0.41		0.01	0.19	1.00
Clearance Time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	
Vehicle Extension (s)	1.5	1.5	1.0		1.0		1.0	1.5		1.0	1.5	
Lane Grp Cap (vph)	769	723	1164		29		389	1437		14	688	1561
v/s Ratio Prot	0.18	c0.20	0.00		0.00		c0.18	0.15		0.00	c0.13	
v/s Ratio Perm			0.01									c0.39
v/c Ratio	0.43	0.46	0.02		0.22		0.83	0.38		0.57	0.66	0.39
Uniform Delay, d1	22.0	22.3	6.8		53.1		40.9	22.9		54.4	40.9	0.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.14	0.88	1.00
Incremental Delay, d2	1.8	2.1	0.0		1.4		12.9	0.1		27.6	1.6	0.7
Delay (s)	23.7	24.4	6.9		54.4		53.8	22.9		89.9	37.4	0.7
Level of Service	C	C	A		D		D	C		F	D	A
Approach Delay (s)		23.3			54.4			34.5			16.8	
Approach LOS		C			D			C			B	

HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Dowdell Ave & Golf Course Dr 2/6/2014

Lane Configurations												
Volume (vph)	26	484	1	1	525	45	1	15	1	34	17	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4 0			4.0			4.0			4.0	
Lane Util. Factor		0.95			0 95			1.00			1.00	
Frt		1.00			0 99			0.99			0.96	
Flt Protected		1.00			1 00			1.00			0.98	
Satd. Flow (prot)		3529			3497			1844			1744	
Flt Permitted		0.90			0 95			0.99			0.84	
Satd. Flow (perm)		3199			3339			1831			1504	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0 92	0.92	0.92	0.92	0 92
Adj. Flow (vph)	28	526	1	1	571	49	1	16	1	37	18	25
RTOR Reduction (vph)	0	0	0	0	6	0	0	1	0	0	15	0
Lane Group Flow (vph)	0	555	0	0	615	0	0	17	0	0	65	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		94.3			94.3			7.7			7.7	
Effective Green, g (s)		94.3			94.3			7.7			7.7	
Actuated g/C Ratio		0 86			0 86			0.07			0.07	
Clearance Time (s)		4.0			4 0			4.0			4.0	
Vehicle Extension (s)		1.5			1.5			1.0			1.0	
Lane Grp Cap (vph)		2742			2862			128			105	
v/s Ratio Prot												
v/s Ratio Perm		0.17			c0.18			0.01			c0.04	
v/c Ratio		0 20			0.21			0.13			0.62	
Uniform Delay, d1		1.4			1 4			48.0			49.7	
Progression Factor		1.00			0.22			1.00			1.00	
Incremental Delay, d2		0.2			0 1			0.2			7.9	
Delay (s)		1 5			0.4			48.2			57.6	
Level of Service		A			A			D			E	
Approach Delay (s)		1.5			0.4			48.2			57.6	
Approach LOS		A			A			D			E	

HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.25			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8 0	
Intersection Capacity Utilization	50 3%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Redwood Dr & Golf Course Dr 2/6/2014

Lane Configurations												
Volume (vph)	51	524	64	356	536	397	51	220	292	251	226	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	13	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1533	1770	3390		1770	3539	1514	1770	3539	1517
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1533	1770	3390		1770	3539	1514	1770	3539	1517
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0 95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	552	67	375	564	418	54	232	307	264	238	32
RTOR Reduction (vph)	0	0	46	0	105	0	0	0	270	0	0	24
Lane Group Flow (vph)	54	552	21	375	877	0	54	232	37	264	238	8
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Actuated Green, G (s)	10.8	34.2	34.2	27.3	50.7		4.7	13.4	13 4	19 1	27.8	27.8
Effective Green, g (s)	10.8	34.2	34.2	27 3	50.7		4.7	13.4	13 4	19 1	27.8	27.8
Actuated g/C Ratio	0.10	0.31	0.31	0.25	0.46		0.04	0.12	0.12	0.17	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0	1.5	1.5		1.0	1.5	1.5	1 0	1.5	1.5
Lane Grp Cap (vph)	173	1100	476	439	1562		75	431	184	307	894	383
v/s Ratio Prot	0.03	c0.16		c0.21	c0.26		0.03	c0.07		c0 15	0.07	
v/s Ratio Perm			0.01						0.02			0.01
v/c Ratio	0.31	0.50	0.04	0.85	0.56		0.72	0.54	0.20	0.86	0.27	0.02
Uniform Delay, d1	46.1	30.9	26.5	39.5	21.6		52.0	45.4	43.5	44.2	32.9	30.9
Progression Factor	0.96	0.96	1.00	0.90	0.78		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.6	0.2	13.1	1.3		23.9	0.7	0.2	20.0	0.1	0.0
Delay (s)	44.8	31.2	26.6	48.7	18.1		75.9	46.0	43.7	64.1	33.0	30.9
Level of Service	D	C	C	D	B		E	D	D	E	C	C
Approach Delay (s)		31.9			26.6			47.5			48.2	
Approach LOS		C			C			D			D	

HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: US 101 South Ramps & Golf Course Dr

2/6/2014

Lane Configurations		↑↑	↱	↰↑	↑↑					↰	↓↑	
Volume (vph)	0	646	435	107	675	0	0	0	0	338	174	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4 5	4 5	4.5	4.5					4.5	4.5	
Lane Util. Factor		0.95	1 00	0.97	0.95					0.91	0.91	
Frpb, ped/bikes		1.00	0.96	1 00	1.00					1.00	0.98	
Flpb, ped/bikes		1 00	1.00	1.00	1.00					1.00	1.00	
Frt		1 00	0.85	1.00	1.00					1.00	0.89	
Flt Protected		1 00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (prot)		3539	1526	3433	3539					1610	2937	
Flt Permitted		1.00	1.00	0.95	1.00					0.95	1.00	
Satd. Flow (perm)		3539	1526	3433	3539					1610	2937	
Peak-hour factor, PHF	0 95	0.95	0.95	0.95	0 95	0 95	0 95	0.95	0 95	0.95	0.95	0.95
Adj. Flow (vph)	0	680	458	113	711	0	0	0	0	356	183	637
RTOR Reduction (vph)	0	0	261	0	0	0	0	0	0	0	88	0
Lane Group Flow (vph)	0	680	197	113	711	0	0	0	0	320	768	0
Confl. Peds. (#/hr)			10									10
Confl. Bikes (#/hr)			10									10
Turn Type		NA	Perm	Prot	NA					Split	NA	
Protected Phases		6		5	2					8	8	
Permitted Phases			6									
Actuated Green, G (s)		47.3	47.3	7 1	58.9					42 1	42 1	
Effective Green, g (s)		47.3	47.3	7 1	58.9					42.1	42 1	
Actuated g/C Ratio		0 43	0.43	0.06	0.54					0.38	0 38	
Clearance Time (s)		4 5	4.5	4 5	4 5					4.5	4.5	
Vehicle Extension (s)		1.5	1.5	1.0	1.5					1.5	1 5	
Lane Grp Cap (vph)		1521	656	221	1894					616	1124	
v/s Ratio Prot		c0.19		c0.03	0.20					0.20	c0.26	
v/s Ratio Perm			0.13									
v/c Ratio		0.45	0.30	0.51	0.38					0.52	0.98dr	
Uniform Delay, d1		22.1	20.5	49.8	14.9					26.2	28.4	
Progression Factor		0.58	1.04	0.72	0.58					1 00	1 00	
Incremental Delay, d2		0.8	1.0	0.8	0.6					0.3	1.4	
Delay (s)		13.6	22.3	36.4	9.2					26.5	29.8	
Level of Service		B	C	D	A					C	C	
Approach Delay (s)		17.1			12.9			0.0			28.9	
Approach LOS		B			B			A			C	

HCM 2000 Control Delay	20.4	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio	0 55			
Actuated Cycle Length (s)	110 0	Sum of lost time (s)		13 5
Intersection Capacity Utilization	65.9%	ICU Level of Service		C
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Commerce Blvd & Golf Course Dr

2/6/2014

Lane Configurations	↰	↑↑↑	↱	↰↑	↑↑		↰↑	↑	↱	↱	↓↑	
Volume (vph)	13	432	516	315	297	49	498	150	518	154	203	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	13	12	12	12
Total Lost time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	0.99		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1571	3433	3434		3433	1863	1616	1770	1845	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1571	3433	3434		3433	1863	1616	1770	1845	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0 98	0.98	0.98	0.98	0.98	0.98	0 98
Adj. Flow (vph)	13	441	527	321	303	50	508	153	529	157	207	11
RTOR Reduction (vph)	0	0	99	0	15	0	0	0	95	0	2	0
Lane Group Flow (vph)	13	441	428	321	338	0	508	153	434	157	216	0
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6	4	5	2		4	4	5	3	3	
Permitted Phases			6						4			
Actuated Green, G (s)	2.8	16.7	62.0	15.2	29.1		45.3	45.3	60.5	16.4	16.4	
Effective Green, g (s)	2.8	16.7	62.0	15.2	29.1		45.3	45.3	60.5	16.4	16.4	
Actuated g/C Ratio	0.03	0.15	0.56	0.14	0.26		0.41	0.41	0.55	0.15	0.15	
Clearance Time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Vehicle Extension (s)	1.0	1.5	1.5	1.0	1.5		1.5	1.5	1.0	1.5	1.5	
Lane Grp Cap (vph)	45	771	944	474	908		1413	767	888	263	275	
v/s Ratio Prot	0.01	c0.09	0.19	c0.09	0.10		0.15	0.08	c0.07	0.09	c0.12	
v/s Ratio Perm			0.09						0.20			
v/c Ratio	0.29	0.57	0.45	0.68	0.37		0.36	0.20	0.49	0.60	0.79	
Uniform Delay, d1	52.6	43.3	14.1	45.1	33.0		22.3	20.7	15.2	43.7	45.1	
Progression Factor	1.17	0.84	1.08	0.87	0.84		1.01	0.97	1.03	1.00	1.00	
Incremental Delay, d2	1.2	0.6	0.1	3.0	0.1		0.7	0.6	0.1	2.4	12.8	
Delay (s)	62.6	36.8	15.3	42.3	27.7		23.2	20.7	15.9	46.1	57.9	
Level of Service	E	D	B	D	C		C	C	B	D	E	
Approach Delay (s)		25.6			34.6			19.6			53.0	
Approach LOS		C			C			B			D	

HCM 2000 Control Delay	28.5	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		16.4
Intersection Capacity Utilization	67.5%	ICU Level of Service		C
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Commerce Blvd & US 101 North Ramps 2/6/2014

Lane Configurations												
Volume (vph)	636	2	29	4	2	13	306	514	1	8	431	593
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	16	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		0.89		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1686	1794		1484		1770	3538		1770	3539	1561
Flt Permitted	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1793	1686	1794		1484		1770	3538		1770	3539	1561
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	669	2	31	4	2	14	322	541	1	8	454	624
RTOR Reduction (vph)	0	0	11	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	334	337	20	0	6	0	322	542	0	8	454	624
Confl. Peds. (#/hr)						10			10			
Confl. Bikes (#/hr)									10			10
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Free
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									Free
Actuated Green, G (s)	47.1	47.1	71.3		2.2		24.2	44.8		0.9	21.5	110.0
Effective Green, g (s)	47.1	47.1	71.3		2.2		24.2	44.8		0.9	21.5	110.0
Actuated g/C Ratio	0.43	0.43	0.65		0.02		0.22	0.41		0.01	0.20	1.00
Clearance Time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	
Vehicle Extension (s)	1.5	1.5	1.0		1.0		1.0	1.5		1.0	1.5	
Lane Grp Cap (vph)	767	721	1162		29		389	1440		14	691	1561
v/s Ratio Prot	0.19	c0.20	0.00		0.00		c0.18	0.15		0.00	c0.13	
v/s Ratio Perm			0.01									c0.40
v/c Ratio	0.44	0.47	0.02		0.22		0.83	0.38		0.57	0.66	0.40
Uniform Delay, d1	22.1	22.5	6.9		53.1		40.9	22.8		54.4	40.8	0.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.10	0.89	1.00
Incremental Delay, d2	1.8	2.2	0.0		1.4		12.9	0.1		27.5	1.5	0.7
Delay (s)	23.9	24.7	6.9		54.4		53.8	22.9		87.5	37.8	0.7
Level of Service	C	C	A		D		D	C		F	D	A
Approach Delay (s)		23.5			54.4			34.4			16.8	
Approach LOS		C			D			C			B	

HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Dowdell Ave & Golf Course Dr

2/18/2014

Lane Configurations												
Volume (vph)	71	943	135	472	1000	145	126	45	367	221	58	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	12	12	11	12	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	3340		1711	3339		1770	2856		1770	3030	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	3340		1711	3339		1770	2856		1770	3030	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	993	142	497	1053	153	135	47	386	233	61	96
RTOR Reduction (vph)	0	9	0	0	9	0	0	333	0	0	77	0
Lane Group Flow (vph)	75	1126	0	497	1197	0	135	100	0	233	80	0
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	7.2	39.5		29.8	62.1		12.3	16.6		20.1	24.4	
Effective Green, g (s)	7.2	39.5		29.8	62.1		12.3	16.6		20.1	24.4	
Actuated g/C Ratio	0.06	0.32		0.24	0.51		0.10	0.14		0.16	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	1.5		3.0	1.5		3.0	1.0		3.0	1.0	
Lane Grp Cap (vph)	100	1081		417	1699		178	388		291	606	
v/s Ratio Prot	0.04	c0.34		c0.29	0.36		c0.08	c0.03		c0.13	0.03	
v/s Ratio Perm												
v/c Ratio	0.75	1.04		1.19	0.70		0.76	0.26		0.80	0.13	
Uniform Delay, d1	56.5	41.2		46.1	22.9		53.4	47.2		49.0	40.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.6	38.7		107.8	2.5		16.8	0.1		14.5	0.0	
Delay (s)	83.1	79.9		153.9	25.4		70.2	47.3		63.6	40.1	
Level of Service	F	E		F	C		E	D		E	D	
Approach Delay (s)		80.1			62.9			52.7			54.1	
Approach LOS		F			E			D			D	

HCM 2000 Control Delay	65.9	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.97			
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	100.1%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Dowdell Ave & Golf Course Dr

2/6/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	943	135	472	1000	145	126	45	367	221	58	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	12	12	11	12	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1711	3421	1583	1711	3356		1770	1801	1583	3433	1635	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1711	3421	1583	1711	3356		1770	1801	1583	3433	1635	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	72	962	138	482	1020	148	131	46	374	226	59	93
RTOR Reduction (vph)	0	0	80	0	9	0	0	0	52	0	57	0
Lane Group Flow (vph)	72	962	58	482	1159	0	131	46	322	226	95	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	5	3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	6.7	33.0	44.6	35.8	62.1		11.6	10.9	46.7	10.3	9.6	
Effective Green, g (s)	6.7	33.0	44.6	35.8	62.1		11.6	10.9	46.7	10.3	9.6	
Actuated g/C Ratio	0.06	0.31	0.42	0.34	0.59		0.11	0.10	0.44	0.10	0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.0	1.5	1.0	1.0	1.5		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	108	1065	725	577	1966		193	185	697	333	148	
v/s Ratio Prot	0.04	c0.28	0.01	c0.28	0.35		c0.07	0.03	0.16	c0.07	0.06	
v/s Ratio Perm			0.03						0.05			
v/c Ratio	0.67	0.90	0.08	0.84	0.59		0.68	0.25	0.46	0.68	0.64	
Uniform Delay, d1	48.6	35.0	18.4	32.4	13.9		45.4	43.8	20.8	46.3	46.5	
Progression Factor	1.03	0.93	1.01	0.50	0.20		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.0	7.6	0.0	10.1	0.9		7.2	0.3	0.2	4.3	6.5	
Delay (s)	57.8	40.1	18.6	26.2	3.8		52.7	44.0	21.0	50.5	53.1	
Level of Service	E	D	B	C	A		D	D	C	D	D	
Approach Delay (s)		38.7			10.3			30.5			51.5	
Approach LOS		D			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	81.3%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Redwood Dr & Golf Course Dr 2/18/2014

Lane Configurations												
Volume (vph)	62	1281	202	514	1516	420	90	246	457	287	245	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	13	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1554	1770	3526		1770	3539	1538	3433	1863	1543
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1554	1770	3526		1770	3539	1538	3433	1863	1543
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	1348	213	541	1596	442	95	259	481	302	258	51
RTOR Reduction (vph)	0	0	114	0	24	0	0	0	324	0	0	42
Lane Group Flow (vph)	65	1348	99	541	2014	0	95	259	157	302	258	9
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Actuated Green, G (s)	4.0	37.0	37.0	26.0	59.0		9.1	13.9	13.9	13.1	17.9	17.9
Effective Green, g (s)	4.0	37.0	37.0	26.0	59.0		9.1	13.9	13.9	13.1	17.9	17.9
Actuated g/C Ratio	0.04	0.35	0.35	0.25	0.56		0.09	0.13	0.13	0.12	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	66	1235	542	434	1962		151	464	201	424	314	260
v/s Ratio Prot	0.04	0.38		c0.31	c0.57		0.05	0.07		c0.09	c0.14	
v/s Ratio Perm			0.06						0.10			0.01
v/c Ratio	0.98	1.09	0.18	1.25	1.03		0.63	0.56	0.78	0.71	0.82	0.03
Uniform Delay, d1	51.0	34.5	24.0	40.0	23.5		46.8	43.2	44.6	44.6	42.5	36.8
Progression Factor	1.00	1.00	1.00	0.97	0.88		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	104.6	54.3	0.7	119.8	21.1		5.8	0.8	16.4	4.7	15.0	0.0
Delay (s)	155.6	88.8	24.7	158.6	41.7		52.6	44.0	61.0	49.3	57.5	36.8
Level of Service	F	F	C	F	D		D	D	E	D	E	D
Approach Delay (s)		83.1			66.2			54.8			51.7	
Approach LOS		F			E			D			D	

HCM 2000 Control Delay	67.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Redwood Dr & Golf Course Dr 2/6/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	1281	202	514	1516	420	90	246	457	287	245	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	13	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	4969		1770	3657	1614	1770	3539	1578	3433	1863	1530
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	4969		1770	3657	1614	1770	3539	1578	3433	1863	1530
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	1348	213	541	1596	442	95	259	481	302	258	51
RTOR Reduction (vph)	0	21	0	0	0	50	0	0	31	0	0	46
Lane Group Flow (vph)	65	1540	0	541	1596	392	95	259	450	302	258	5
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	1	6		5	2	3	7	4	5	3	8	
Permitted Phases						2			4			8
Actuated Green, G (s)	8.0	39.5		33.5	65.0	74.0	6.0	8.0	41.5	9.0	11.0	11.0
Effective Green, g (s)	8.0	39.5		33.5	65.0	74.0	6.0	8.0	41.5	9.0	11.0	11.0
Actuated g/C Ratio	0.08	0.37		0.32	0.61	0.70	0.06	0.08	0.39	0.08	0.10	0.10
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	133	1851		559	2242	1126	100	267	617	291	193	158
v/s Ratio Prot	0.04	c0.31		c0.31	0.44	0.03	0.05	c0.07	0.23	0.09	c0.14	
v/s Ratio Perm						0.21			0.05			0.00
v/c Ratio	0.49	0.83		0.97	0.71	0.35	0.95	0.97	0.73	1.04	1.34	0.03
Uniform Delay, d1	47.0	30.2		35.7	14.1	6.4	49.9	48.9	27.5	48.5	47.5	42.7
Progression Factor	1.11	0.56		1.16	0.87	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	3.0		18.2	0.9	0.0	72.4	46.5	3.7	62.9	182.3	0.0
Delay (s)	52.7	19.9		59.6	13.1	5.3	122.2	95.3	31.1	111.4	229.8	42.8
Level of Service	D	B		E	B	A	F	F	C	F	F	D
Approach Delay (s)		21.2			21.5			61.4			155.7	
Approach LOS		C			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: US 101 South Ramps & Golf Course Dr

2/18/2014

Lane Configurations		↑↑	↱	↰↰	↑↑						↑↑	↱
Volume (vph)	0	1258	767	124	1215	0	0	0	0	392	202	1246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		0.95	1.00	0.97	0.95						0.91	0.91
Frpb, ped/bikes		1.00	0.97	1.00	1.00						0.98	0.97
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						0.92	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1535	3433	3539						3034	1398
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1535	3433	3539						3034	1398
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1324	807	131	1279	0	0	0	0	413	213	1312
RTOR Reduction (vph)	0	0	297	0	0	0	0	0	0	0	17	35
Lane Group Flow (vph)	0	1324	510	131	1279	0	0	0	0	0	1265	621
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)												10
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		6		5	2					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		42.1	42.1	4.9	51.5						45.5	45.5
Effective Green, g (s)		42.1	42.1	4.9	51.5						45.5	45.5
Actuated g/C Ratio		0.40	0.40	0.05	0.49						0.43	0.43
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		1.5	1.5	1.0	1.5						1.5	1.5
Lane Grp Cap (vph)		1405	609	158	1719						1302	600
v/s Ratio Prot		c0.37		0.04	c0.36						0.42	
v/s Ratio Perm			0.33									c0.44
v/c Ratio		0.94	0.84	0.83	0.74						1.01dr	1.03
Uniform Delay, d1		30.8	28.9	50.1	21.9						29.6	30.2
Progression Factor		0.88	1.15	0.72	0.43						1.00	1.00
Incremental Delay, d2		4.5	3.7	20.6	2.1						18.4	45.9
Delay (s)		31.5	36.9	56.7	11.5						48.0	76.1
Level of Service		C	D	E	B						D	E
Approach Delay (s)		33.6			15.7			0.0			57.6	
Approach LOS		C			B			A			E	

HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	94.1%	ICU Level of Service	F	
Analysis Period (min)	15			

dr Defacto Right Lane Recode with 1 though lane as a right lane
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Commerce Blvd & Golf Course Dr

2/6/2014

Lane Configurations	↰	↑↑↑	↱	↰↰	↑↱		↰	↓	↱↱	↰	↱	
Volume (vph)	15	691	944	365	409	112	903	173	661	194	271	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	13	12	12	12
Total Lost time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		0.95	0.95	0.88	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1576	3433	3400		1681	1711	2819	1770	1833	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1576	3433	3400		1681	1711	2819	1770	1833	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	705	963	372	417	114	921	177	613	198	277	28
RTOR Reduction (vph)	0	0	41	0	22	0	0	0	89	0	3	0
Lane Group Flow (vph)	15	705	922	372	509	0	543	555	524	198	302	0
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6	4	5	2		4	4	5	3	3	
Permitted Phases			6						4			
Actuated Green, G (s)	2.8	17.3	60.6	12.1	26.6		43.3	43.3	55.4	16.9	16.9	
Effective Green, g (s)	2.8	17.3	60.6	12.1	26.6		43.3	43.3	55.4	16.9	16.9	
Actuated g/C Ratio	0.03	0.16	0.57	0.11	0.25		0.41	0.41	0.52	0.16	0.16	
Clearance Time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Vehicle Extension (s)	1.0	1.5	1.5	1.0	1.5		1.5	1.5	1.0	1.5	1.5	
Lane Grp Cap (vph)	46	829	961	391	853		686	698	1473	282	292	
v/s Ratio Prot	0.01	0.14	c0.39	c0.11	0.15		0.32	0.32	0.04	0.11	c0.16	
v/s Ratio Perm			0.19						0.15			
v/c Ratio	0.33	0.85	0.96	0.95	0.60		0.79	0.80	0.36	0.70	1.03	
Uniform Delay, d1	50.7	43.1	21.5	46.7	35.0		27.4	27.5	14.8	42.2	44.5	
Progression Factor	1.04	1.18	0.80	0.61	0.58		0.98	0.98	0.94	1.00	1.00	
Incremental Delay, d2	0.5	3.8	9.0	29.1	2.5		4.4	4.4	0.0	6.3	61.5	
Delay (s)	53.3	54.6	26.3	57.6	22.9		31.3	31.3	14.0	48.5	106.0	
Level of Service	D	D	C	E	C		C	C	B	D	F	
Approach Delay (s)		38.4			37.2			25.1			83.4	
Approach LOS		D			D			C			F	

HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.01			
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	16.4	
Intersection Capacity Utilization	95.0%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Commerce Blvd & US 101 North Ramps 2/6/2014

Lane Configurations												
Volume (vph)	978	2	57	4	2	13	469	686	1	8	726	846
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	16	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1686	1794		1670		1770	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1793	1686	1794		1670		1770	3538		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj Flow (vph)	1029	2	60	4	2	14	494	722	1	8	764	891
RTOR Reduction (vph)	0	0	22	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	514	517	38	0	6	0	494	723	0	8	764	891
Confl. Peds. (#/hr)									10			
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Free
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									Free
Actuated Green, G (s)	36.7	36.7	67.0		1.6		30.3	51.9		0.8	22.4	106.0
Effective Green, g (s)	36.7	36.7	67.0		1.6		30.3	51.9		0.8	22.4	106.0
Actuated g/C Ratio	0.35	0.35	0.63		0.02		0.29	0.49		0.01	0.21	1.00
Clearance Time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	
Vehicle Extension (s)	1.5	1.5	1.0		1.0		1.0	1.5		1.0	1.5	
Lane Grp Cap (vph)	620	583	1133		25		505	1732		13	747	1583
v/s Ratio Prot	0.29	c0.31	0.01		0.00		c0.28	0.20		0.00	c0.22	
v/s Ratio Perm			0.01									c0.56
v/c Ratio	0.83	0.89	0.03		0.25		0.98	0.42		0.62	1.02	0.56
Uniform Delay, d1	31.8	32.7	7.3		51.6		37.5	17.4		52.4	41.8	0.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.10	0.94	1.00
Incremental Delay, d2	8.6	14.7	0.0		1.9		33.9	0.1		15.3	23.2	0.4
Delay (s)	40.3	47.4	7.3		53.5		71.5	17.4		73.2	62.4	0.4
Level of Service	D	D	A		D		E	B		E	E	A
Approach Delay (s)		41.9			53.5			39.4			29.2	
Approach LOS		D			D			D			C	

HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: Dowdell Ave & Golf Course Dr 2/18/2014

Lane Configurations												
Volume (vph)	71	948	135	472	1004	145	128	45	367	221	58	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	12	12	11	12	12	11	12
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.87		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1711	3340		1711	3339		1770	2856		1770	3030	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1711	3340		1711	3339		1770	2856		1770	3030	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	998	142	497	1057	153	135	47	386	233	61	96
RTOR Reduction (vph)	0	9	0	0	9	0	0	333	0	0	77	0
Lane Group Flow (vph)	75	1131	0	497	1201	0	135	100	0	233	80	0
Confl. Peds. (#/hr)			20			20			20			20
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	7.2	39.5		29.8	62.1		12.3	16.6		20.1	24.4	
Effective Green, g (s)	7.2	39.5		29.8	62.1		12.3	16.6		20.1	24.4	
Actuated g/C Ratio	0.06	0.32		0.24	0.51		0.10	0.14		0.16	0.20	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	1.5		3.0	1.5		3.0	1.0		3.0	1.0	
Lane Grp Cap (vph)	100	1081		417	1699		178	388		291	606	
v/s Ratio Prot	0.04	c0.34		c0.29	0.36		c0.08	c0.03		c0.13	0.03	
v/s Ratio Perm												
v/c Ratio	0.75	1.05		1.19	0.71		0.76	0.26		0.80	0.13	
Uniform Delay, d1	56.5	41.2		46.1	23.0		53.4	47.2		49.0	40.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.6	40.3		107.8	2.5		16.8	0.1		14.5	0.0	
Delay (s)	83.1	81.6		153.9	25.5		70.2	47.3		63.6	40.1	
Level of Service	F	F		F	C		E	D		E	D	
Approach Delay (s)		81.7			62.9			52.7			54.1	
Approach LOS		F			E			D			D	

HCM 2000 Control Delay	66.4	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.97			
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	100.2%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Dowdell Ave & Golf Course Dr 2/6/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	948	135	472	1004	145	128	45	367	221	58	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	12	12	11	12	12	11	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1711	3421	1583	1711	3356		1770	1801	1583	3433	1635	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1711	3421	1583	1711	3356		1770	1801	1583	3433	1635	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	72	967	138	482	1024	148	131	46	374	226	59	93
RTOR Reduction (vph)	0	0	80	0	9	0	0	0	52	0	57	0
Lane Group Flow (vph)	72	967	58	482	1163	0	131	46	322	226	95	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	5	3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	6.7	33.1	44.7	35.7	62.1		11.6	10.9	46.6	10.3	9.6	
Effective Green, g (s)	6.7	33.1	44.7	35.7	62.1		11.6	10.9	46.6	10.3	9.6	
Actuated g/C Ratio	0.06	0.31	0.42	0.34	0.59		0.11	0.10	0.44	0.10	0.09	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.0	1.5	1.0	1.0	1.5		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	108	1068	727	576	1966		193	185	695	333	148	
v/s Ratio Prot	0.04	c0.28	0.01	c0.28	0.35		c0.07	0.03	0.16	c0.07	0.06	
v/s Ratio Perm			0.03						0.05			
v/c Ratio	0.67	0.91	0.08	0.84	0.59		0.68	0.25	0.46	0.68	0.64	
Uniform Delay, d1	48.6	34.9	18.3	32.5	13.9		45.4	43.8	20.9	46.3	46.5	
Progression Factor	1.02	0.93	1.01	0.50	0.21		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.0	7.7	0.0	10.1	1.0		7.2	0.3	0.2	4.3	6.5	
Delay (s)	57.6	40.2	18.5	26.4	3.9		52.7	44.0	21.1	50.5	53.1	
Level of Service	E	D	B	C	A		D	D	C	D	D	
Approach Delay (s)		38.8			10.4			30.5			51.5	
Approach LOS		D			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.83			
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	81.4%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Redwood Dr & Golf Course Dr 2/18/2014

Lane Configurations												
Volume (vph)	68	1297	202	532	1516	420	96	246	457	287	247	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	13	12	12	12	12	12	12
Total Lost time (s)	4.0	4 0	4 0	4.0	4.0		4.0	4.0	4.0	4.0	4 0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	0.97	1 00	1.00
Frpb, ped/bikes	1.00	1.00	0 98	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1 00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1 00
Frt	1 00	1 00	0 85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0 95	1 00	1 00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1 00
Satd. Flow (prot)	1770	3539	1554	1770	3526		1770	3539	1538	3433	1863	1544
Flt Permitted	0.95	1.00	1 00	0.95	1.00		0.95	1.00	1.00	0.95	1 00	1 00
Satd. Flow (perm)	1770	3539	1554	1770	3526		1770	3539	1538	3433	1863	1544
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0 95
Adj. Flow (vph)	72	1365	213	560	1596	442	101	259	481	302	260	51
RTOR Reduction (vph)	0	0	114	0	24	0	0	0	324	0	0	42
Lane Group Flow (vph)	72	1365	99	560	2014	0	101	259	157	302	260	9
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6						4			8
Actuated Green, G (s)	4.0	37.0	37 0	26.0	59.0		9 0	13.9	13.9	13 1	18.0	18.0
Effective Green, g (s)	4.0	37.0	37.0	26.0	59.0		9 0	13.9	13.9	13 1	18 0	18.0
Actuated g/C Ratio	0.04	0 35	0.35	0.25	0.56		0.08	0.13	0.13	0 12	0 17	0 17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	66	1235	542	434	1962		150	464	201	424	316	262
v/s Ratio Prot	0 04	c0.39		c0.32	0.57		0.06	0.07		c0.09	c0.14	
v/s Ratio Perm			0.06						0.10			0.01
v/c Ratio	1 09	1.11	0.18	1.29	1.03		0.67	0.56	0.78	0.71	0 82	0.03
Uniform Delay, d1	51.0	34.5	24.0	40 0	23.5		47.1	43.2	44.6	44.6	42 5	36.7
Progression Factor	1.00	1.00	1.00	0.97	0.88		1.00	1.00	1.00	1.00	1 00	1.00
Incremental Delay, d2	138.0	59.5	0.7	138 4	21.0		9.0	0.8	16.4	4.7	15.0	0.0
Delay (s)	189.0	94.0	24.7	177 3	41.6		56.1	44.0	61.0	49.3	57.5	36.8
Level of Service	F	F	C	F	D		E	D	E	D	E	D
Approach Delay (s)		89.2			70.8			55.2			51.7	
Approach LOS		F			E			E			D	

HCM 2000 Control Delay	71 8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	106 0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Redwood Dr & Golf Course Dr 2/6/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	1297	202	532	1516	420	96	246	457	287	247	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	13	13	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	4970		1770	3657	1614	1770	3539	1578	3433	1863	1530
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	4970		1770	3657	1614	1770	3539	1578	3433	1863	1530
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0 95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	1365	213	560	1596	442	101	259	481	302	260	51
RTOR Reduction (vph)	0	20	0	0	0	44	0	0	31	0	0	46
Lane Group Flow (vph)	72	1558	0	560	1596	398	101	259	450	302	260	5
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	1	6		5	2	3	7	4	5	3	8	
Permitted Phases						2			4			8
Actuated Green, G (s)	8.0	39.6		33.4	65.0	74.0	6.0	8.0	41.4	9.0	11.0	11.0
Effective Green, g (s)	8.0	39.6		33.4	65.0	74.0	6.0	8.0	41.4	9.0	11.0	11 0
Actuated g/C Ratio	0.08	0.37		0.32	0.61	0.70	0.06	0.08	0.39	0.08	0.10	0.10
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	133	1856		557	2242	1126	100	267	616	291	193	158
v/s Ratio Prot	0.04	c0.31		c0.32	0.44	0.03	0.06	c0.07	0.23	0.09	c0.14	
v/s Ratio Perm						0.22			0.06			0.00
v/c Ratio	0.54	0.84		1.01	0.71	0.35	1.01	0.97	0.73	1.04	1.35	0.03
Uniform Delay, d1	47.2	30.3		36.3	14.1	6.4	50.0	48.9	27.5	48.5	47.5	42.7
Progression Factor	1.11	0.56		1.16	0.87	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	3.2		26.8	0.9	0.0	92.7	46.5	3.8	62.9	186.5	0.0
Delay (s)	53.8	20.3		68.8	13.1	5.2	142.7	95.3	31.4	111.4	234.0	42.8
Level of Service	D	C		E	B	A	F	F	C	F	F	D
Approach Delay (s)		21.7			23.8			64.4			157.7	
Approach LOS		C			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: US 101 South Ramps & Golf Course Dr

2/18/2014

Lane Configurations		↑↑	↱	↰↑	↑↑						↑↑	↱
Volume (vph)	0	1269	773	124	1226	0	0	0	0	392	202	1253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Lane Util. Factor		0.95	1.00	0.97	0.95						0.91	0.91
Frpb, ped/bikes		1.00	0.97	1.00	1.00						0.98	0.97
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						0.92	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3539	1535	3433	3539						3033	1398
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3539	1535	3433	3539						3033	1398
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1336	814	131	1291	0	0	0	0	413	213	1319
RTOR Reduction (vph)	0	0	298	0	0	0	0	0	0	0	16	35
Lane Group Flow (vph)	0	1336	516	131	1291	0	0	0	0	0	1270	624
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)												10
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		6		5	2					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		42.1	42.1	4.9	51.5						45.5	45.5
Effective Green, g (s)		42.1	42.1	4.9	51.5						45.5	45.5
Actuated g/C Ratio		0.40	0.40	0.05	0.49						0.43	0.43
Clearance Time (s)		4.5	4.5	4.5	4.5						4.5	4.5
Vehicle Extension (s)		1.5	1.5	1.0	1.5						1.5	1.5
Lane Grp Cap (vph)		1405	609	158	1719						1301	600
v/s Ratio Prot		c0.38		0.04	c0.36						0.42	
v/s Ratio Perm			0.34									c0.45
v/c Ratio		0.95	0.85	0.83	0.75						1.01dr	1.04
Uniform Delay, d1		30.9	29.0	50.1	22.1						29.7	30.2
Progression Factor		0.88	1.16	0.72	0.43						1.00	1.00
Incremental Delay, d2		4.8	3.7	20.4	2.1						19.2	47.3
Delay (s)		31.9	37.5	56.4	11.6						48.9	77.6
Level of Service		C	D	E	B						D	E
Approach Delay (s)		34.0			15.8			0.0			58.6	
Approach LOS		C			B			A			E	

HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	13.5	
Intersection Capacity Utilization	94.5%	ICU Level of Service	F	
Analysis Period (min)	15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Commerce Blvd & Golf Course Dr

2/6/2014

Lane Configurations	↰	↑↑↑	↱	↰↰	↑↑		↰	↑	↱↱	↱	↑↑	
Volume (vph)	15	693	952	365	411	112	911	173	601	194	271	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	13	12	12	12
Total Lost time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95		0.95	0.95	0.88	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	0.99		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1576	3433	3400		1681	1711	2819	1770	1833	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1576	3433	3400		1681	1711	2819	1770	1833	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	707	971	372	419	114	930	177	613	198	277	28
RTOR Reduction (vph)	0	0	41	0	22	0	0	0	89	0	3	0
Lane Group Flow (vph)	15	707	930	372	511	0	549	558	524	198	302	0
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	1	6	4	5	2		4	4	5	3	3	
Permitted Phases			6						4			
Actuated Green, G (s)	2.8	17.3	60.6	12.1	26.6		43.3	43.3	55.4	16.9	16.9	
Effective Green, g (s)	2.8	17.3	60.6	12.1	26.6		43.3	43.3	55.4	16.9	16.9	
Actuated g/C Ratio	0.03	0.16	0.57	0.11	0.25		0.41	0.41	0.52	0.16	0.16	
Clearance Time (s)	4.1	4.1	4.1	4.1	4.1		4.1	4.1	4.1	4.1	4.1	
Vehicle Extension (s)	1.0	1.5	1.5	1.0	1.5		1.5	1.5	1.0	1.5	1.5	
Lane Grp Cap (vph)	46	829	961	391	853		686	698	1473	282	292	
v/s Ratio Prot	0.01	0.14	c0.39	c0.11	0.15		0.33	0.33	0.04	0.11	c0.16	
v/s Ratio Perm			0.20						0.15			
v/c Ratio	0.33	0.85	0.97	0.95	0.60		0.80	0.80	0.36	0.70	1.03	
Uniform Delay, d1	50.7	43.1	21.8	46.7	35.0		27.6	27.5	14.8	42.2	44.5	
Progression Factor	1.04	1.18	0.81	0.61	0.58		0.98	0.98	0.94	1.00	1.00	
Incremental Delay, d2	0.5	3.7	9.8	29.1	2.6		4.8	4.5	0.0	6.3	61.5	
Delay (s)	53.4	54.7	27.4	57.6	22.9		31.8	31.5	14.0	48.5	106.0	
Level of Service	D	D	C	E	C		C	C	B	D	F	
Approach Delay (s)		39.0			37.2			25.3			83.4	
Approach LOS		D			D			C			F	

HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	1.02			
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	16.4	
Intersection Capacity Utilization	95.5%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
5: Commerce Blvd & US 101 North Ramps 2/6/2014

Lane Configurations												
Volume (vph)	984	2	57	4	2	13	469	688	1	8	728	853
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	16	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1793	1686	1794		1670		1770	3538		1770	3539	1583
Flt Permitted	0.95	0.95	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1793	1686	1794		1670		1770	3538		1770	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1036	2	60	4	2	14	494	724	1	8	766	898
RTOR Reduction (vph)	0	0	22	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	518	520	38	0	6	0	494	725	0	8	766	898
Confl. Peds. (#/hr)									10			
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Free
Protected Phases	8	8	1	7	7		1	6		5	2	
Permitted Phases			8									Free
Actuated Green, G (s)	36.9	36.9	67.2		1.6		30.3	51.7		0.8	22.2	106.0
Effective Green, g (s)	36.9	36.9	67.2		1.6		30.3	51.7		0.8	22.2	106.0
Actuated g/C Ratio	0.35	0.35	0.63		0.02		0.29	0.49		0.01	0.21	1.00
Clearance Time (s)	4.0	4.0	3.5		3.5		3.5	4.0		3.5	4.0	
Vehicle Extension (s)	1.5	1.5	1.0		1.0		1.0	1.5		1.0	1.5	
Lane Grp Cap (vph)	624	586	1137		25		505	1726		13	741	1583
v/s Ratio Prot	0.29	c0.31	0.01		0.00		c0.28	0.20		0.00	c0.22	
v/s Ratio Perm			0.01									c0.57
v/c Ratio	0.83	0.89	0.03		0.25		0.98	0.42		0.62	1.03	0.57
Uniform Delay, d1	31.7	32.6	7.3		51.6		37.5	17.5		52.4	41.9	0.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00		1.10	0.94	1.00
Incremental Delay, d2	8.8	14.7	0.0		1.9		33.9	0.1		14.9	26.4	0.4
Delay (s)	40.5	47.3	7.3		53.5		71.5	17.6		72.5	65.7	0.4
Level of Service	D	D	A		D		E	B		E	E	A
Approach Delay (s)		41.9			53.5			39.4			30.7	
Approach LOS		D			D			D			C	

HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

EXHIBIT B

Amy's Kitchen Restaurant Project
Mitigation Monitoring & Reporting Program

No mitigation measures are proposed or recommended for the following resource areas:

- Agriculture and Forestry Resources
- Air Quality
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Recreation
- Utilities / Service Systems

Mitigation Measure	Monitoring Agency	Monitoring Action	Timing	Status
I. AESTHETICS				
Mitigation Measure AES-1 (WDSP EIR Mitigation Measure 3.9-4): Implementation of polices in the General Plan EIR will be required as part of the project design. The polices to mitigate visual impacts on the City's Westside including planting and setbacks that ensure the edge of the urban uses results in a "soft" view will reduce these impacts to a less than significant level.	City of Rohnert Park	Review construction documents to verify policies are being met.	Prior to approval of grading permit.	In progress as part of project design.
Mitigation Measure AES-2 (WDSP EIR Mitigation Measure 3.9-3): The Project shall comply with municipal code section 17.12.050 that requires that exterior lighting be designed to avoid spillover lighting onto adjacent properties.	City of Rohnert Park	Review construction documents to verify specifications are being met.	Prior to issuance of building permit.	No activity.
II. BIOLOGICAL RESOURCES				
Mitigation Measure BIO-1 (WDSP EIR Mitigation Measure 3.4-3a): A pre-construction survey of ruderal seasonal wetland habitat shall occur prior to, but no earlier than 30 days prior to the commencement of grading and/or construction activities. This survey shall be conducted within the blooming period of all five special-status plants identified as having the potential to be present on the Project site. If one or more of these species is observed during the survey, then appropriate alternative measures should be executed.	City of Rohnert Park/CDFW/USFWS	If special-status plants are present, monitor the site for compliance with mitigation measures.	Prior to, but no earlier than 30 days prior to, the commencement of grading as a condition of approval of the grading permit.	No activity.
Mitigation Measure BIO-2 (WDSP EIR Mitigation Measure 3.4-3b): If special-status plant species are determined to occur on the project site, they shall be	City of Rohnert Park/CDFW/USFWS	If special-status plants are present, monitor the site for compliance	Prior to, but no earlier than 30 days prior to, the commencement of	No activity.

Mitigation Measure	Monitoring Agency	Monitoring Action	Timing	Status
avoided to the extent feasible. For those plants that cannot be avoided, the following mitigation measure shall be implemented. 1) All plants within the construction footprint (including staging areas) shall be transplanted to a mitigation site approved by CDFG and the USFWS. 2) Lost plant habitat shall be replaced at a ratio of two acres of replacement habitat for each acre of special-status plant habitat lost. The success of the transplantation program shall be evaluated to have been achieved if 80% or more of the transplanted plants have survived five years after transplantation. 3) Mitigation projects will be monitored annually for five years using success criteria developed in coordination with the CDFG and USFWS.		with mitigation measures. Monitor transplantation program in cooperation with CDFW and USFWS.	grading as a condition of approval of the grading permit.	
Mitigation Measure BIO-3 (WDSP EIR Mitigation Measure 3.4-3c): Where complete avoidance is not feasible, pre-construction surveys shall be conducted to flag the limits of areas where special-status plant species occur.	City of Rohnert Park	If special-status plants are present, monitor the site for compliance with mitigation measures.	Prior to, but no earlier than 30 days prior to, the commencement of grading as a condition of approval of the grading permit.	No activity.
Mitigation Measure BIO-4 (WDSP EIR Mitigation Measure 3.4-3d): The City of Rohnert Park and the developer should establish an ongoing and aggressive weed abatement program to prevent the spread and establishment of exotic weeds along established habitat on the site or habitat subject to further invasion of seed stock resulting from grading and development activities.	City of Rohnert Park	If special-status plants are present, monitor the site for compliance with mitigation measures.	Ongoing.	No activity.
Mitigation Measure BIO-5 (WDSP EIR Mitigation Measure 3.4-4a): A formal consultation should be initiated with the USFWS regarding the California Tiger Salamander (CTS). Based on the ensuing Biological Opinion provided by the USFWS as part of the consultation, further measures may be necessary by the USFWS before initiation of any grading and construction activities would be permitted to begin.	City of Rohnert Park/CDFW/USFWS	Upon consultation with the USFWS, implement any measures that would be necessary before initiation of grading and construction activities.	Prior to approval of grading permit.	No activity.
Mitigation Measure BIO-6 (WDSP EIR Mitigation Measure 3.4-4b): A CTS protocol survey could be one	City of Rohnert Park/CDFW/USFWS	Upon consultation with the USFWS,	Prior to, but no earlier than 30 days prior to,	No activity.

Mitigation Measure	Monitoring Agency	Monitoring Action	Timing	Status
of the USFWS's recommendations, based on the consultation. CTS survey protocol guidelines appear in a publication produced by the USFWS (USFWS, 2004).		implement any measures that would be necessary before initiation of grading and construction activities.	the commencement of grading as a condition of approval of the grading permit.	
Mitigation Measure BIO-7 (WDSP EIR Mitigation Measure 3.4-4c): Any active CTS must not be disturbed. If CDFW determines that CTS habitat will be lost because of development, the developer/applicant shall provide compensation for habitat loss to be determined in consultation with the CDFW.	City of Rohnert Park/CDFW/USFWS	Upon consultation with the CDFW, implement any measures that would be necessary before initiation of grading and construction activities.	Prior to approval of grading permit.	No activity.
Mitigation Measure BIO-8 (WDSP EIR Mitigation Measure 3.4-6a): The applicant shall retain a qualified biologist , acceptable to the City to conduct nest surveys on the site and within 200 feet of its borders prior to construction or site preparation activities occurring during the nesting/breeding season raptor species (typically February through August). The surveys shall be conducted no earlier than 30 days prior to commencement of construction/restoration activities.	City of Rohnert Park	Review results of the pre-construction survey. If a nest is present, monitor the site for compliance with mitigation measures.	Prior to, but no earlier than 30 days prior to, the commencement of construction/restoration activities.	No activity.
Mitigation Measure BIO-9 (WDSP EIR Mitigation Measure 3.4-6b): If active raptor nests are present in the construction zone or within 200 feet of these areas, a fence shall be erected at a minimum of 50 feet around the nest site and remain until the end of the nesting season or until the biologist deems necessary. This temporary buffer may be greater depending on the identification of the bird species and construction activity elements, as determined by the biologist.	City of Rohnert Park	Review results of the pre-construction survey. If a nest is present, monitor the site for compliance with mitigation measures.	Prior to and during grading and construction.	No activity.
Mitigation Measure BIO-10 (WDSP EIR Mitigation Measure 3.4-6c): If an active raptor nest is located on or adjacent to the project site, tree removal, grading, and other project-related disturbances shall be prohibited within 200 feet of the active raptor nest until the young have fledged. Prior to disturbance within	City of Rohnert Park	Review results of the pre-construction survey. If a nest is present, monitor the site for	On-going during grading and construction.	No activity.

Mitigation Measure	Monitoring Agency	Monitoring Action	Timing	Status
200 feet of an active raptor nest, the project developer shall retain a qualified biologist or ornithologist, acceptable to the City to confirm that the young have fledged. The biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure the safety of raptors at peril.		compliance with mitigation measures.		
III. CULTURAL RESOURCES				
Mitigation Measure CUL-1 (WDSP EIR Mitigation Measure 3.5-1): A cultural resources field survey of the Project site shall be performed prior to construction activities. All prehistoric and historic archaeological and historic architectural properties identified during the field survey shall be recorded to State of California, Department of Parks and Recreation standards on 523 (DPR 523) series forms.	City of Rohnert Park	Verify completion of the field survey and its recordation with the State.	Prior to approval of grading permit.	No activity.
Mitigation Measure CUL-2 (WDSP EIR Mitigation Measure 3.5-2a): If any cultural resources are discovered during ground-disturbing activities, work in the immediate area shall stop and a qualified archaeologist brought in to evaluate the resource and to recommend further action, if necessary. Construction crews shall be directed by holder of the grading permit to be alert for cultural resources which could consist of, but not be limited to: artifact of stone, bone, wood, shell, or other materials; features, including hearths, structural remains, or dumps; areas of discolored soil indicating the location of fire pits, post molds, or living area surfaces.	City of Rohnert Park	Verify completion of the field survey by a qualified archaeologist and its recordation with the State. Presence of a qualified archaeologist to ensure that construction workers comply with mitigation measures consistent with State and Federal law.	On-going during excavation and grading.	No activity.
Mitigation Measure CUL-3 (WDSP EIR Mitigation Measure 3.5-2b): In the event that human remains are discovered, all work in the area shall stop immediately, and the applicant shall contact the County Coroner. If the remains are determined to be of Native American origin, both the Native American Heritage Commission and any identified descendants shall be notified and recommendations for treatment solicited pursuant to CEQA Section 15064.59(e).	City of Rohnert Park	Presence of a qualified archaeologist to ensure that construction workers comply with mitigation measures consistent with State and Federal law.	On-going during excavation and grading.	No activity.

Amy's Kitchen Restaurant Project
Mitigation Monitoring & Reporting Program

Mitigation Measure	Monitoring Agency	Monitoring Action	Timing	Status
IV. GEOLOGY AND SOILS				
Mitigation Measure GEO-1 (WDSP EIR Mitigation Measure 3.2-1): The contents of buildings in the proposed Project shall be secured to the extent feasible. All shelving shall be secured to structural elements of the floor, wall, or ceiling. Heavy display items and merchandise shall be placed on lower shelves and secured to building elements where possible. A certificate of occupancy shall not be issued until compliance with these requirements.	City of Rohnert Park/Building Inspector	Inspect businesses.	Prior to opening of the business.	No activity.
Mitigation Measure GEO-2 (WDSP EIR Mitigation Measure 3.2-2): A geotechnical study acceptable to the City shall be conducted by a California Certified Geologist prior to site development. This study shall evaluate liquefaction potential at the Project site prior to issuance of a grading permit. Recommendations shall be provided, as necessary, to prevent damage to Project facilities and compliance with these recommendations shall be required as a condition of development at the Project site. This impact will be less than significant because engineering techniques to mitigate for poor ground conditions are incorporated into building codes with which the Project will have to comply.	City of Rohnert Park/Engineering	Review and approve the final grading plans and identify geotechnical specifications as a condition of grading permit application. Conduct inspection of the project site to verify implementation of geotechnical specifications.	Prior to approval of grading permit. Weekly throughout grading period.	No activity.
Mitigation Measure GEO-3 (WDSP EIR Mitigation Measure 3.2-3): A geotechnical study acceptable to the City shall be conducted to determine the location and extent of expansive soils at the Project site prior to issuance of a grading permit. The study will include recommendations regarding the treatment and/or remedy of onsite soils, and the structural design of foundations and underground utilities, and compliance with these recommendations shall be required as a condition of future development at the Project Site.	City of Rohnert Park/Engineering/Building Inspector/Public Works Inspector	Review and approve the final grading plans and identify geotechnical specifications as a condition of grading permit application. Conduct inspection of the project site to verify implementation of geotechnical specifications.	Prior to approval of grading permit. Weekly throughout grading period.	No activity.

Amy's Kitchen Restaurant Project
Mitigation Monitoring & Reporting Program

Mitigation Measure	Monitoring Agency	Monitoring Action	Timing	Status
V. HYDROLOGY AND WATER QUALITY				
Mitigation Measure HYDRO-1 (WDSP EIR Mitigation Measure 3.3-2a): The Project developer shall develop and implement a site-specific storm water pollution prevention plan acceptable to the City that identifies best management practices for effectively reducing discharges of storm water containing sediment and construction wastes resulting from site construction activities. The applicant shall comply with all other requirements set forth in NPDES General Permit CAS000002.	City of Rohnert Park/Engineering	Review and approve final storm drainage plans.	Prior to approval of grading permit.	No activity.
Mitigation Measure HYDRO-2 (WDSP EIR Mitigation Measure 3.3-1): The Project developer shall prepare a site-specific hydrology and drainage study acceptable to the City showing the increase in storm water runoff that would result from development of the Project site. Based upon the results of this study, the developer shall design and construct a storm drain system in accordance with Sonoma County Water Agency Flood Control Design Criteria (latest revision), specific to the Project.	City of Rohnert Park/Engineering	Review and approve final storm drainage plans.	Prior to approval of grading permit.	No activity.
Mitigation Measure HYDRO-3 (WDSP EIR Mitigation Measure 3.3-2b): The developer shall design and construct storm drainage improvements to remove oil and grease from discharges from parking lots, including directing runoff to vegetated swales or areas, consistent with best management practices (BMPs).	City of Rohnert Park/Engineering	Verify proper installation of off-site drainage facilities.	Prior to approval of grading permit.	No activity.
VI. NOISE				
Mitigation Measure NOISE-1 (WDSP EIR Mitigation Measure 3.8-4): The Project shall comply with the City's Municipal Code, including hours of construction. All equipment shall be adequately muffled and properly maintained. Construction equipment noise levels shall be monitored to move, muffle and/or shield equipment to minimize noise impacts.	City of Rohnert Park	Review construction documents and perform periodic visual inspections to verify applicable control measures are being implemented.	Prior to approval of grading permit and ongoing during construction.	No activity.
VII. PUBLIC SERVICES				
Mitigation Measure PUB-1 (WDSP EIR Mitigation	City of Rohnert	As an interim action,	In conjunction with	No activity.

Mitigation Measure	Monitoring Agency	Monitoring Action	Timing	Status
Measure 3.10-1): The Project will contribute to the need for additional public safety officers associated with growth of the City. As part of future development, a public safety station is identified in the stadium area specific plan and would also be funded by the Federated Indians of the Graton Rancheria as part of the proposed Casino as well as through capital improvements approved by the Redevelopment Agency and through the Public Facilities Financing Plan (PFFP). Development of the station would reduce the impact to less than significant.	Park/Public Safety/Finance	Station One on Rohnert Park Expressway will be expanded into a fully-operational station to provide better response to this area until funds have been approved to fund this station. This station would continue to be staffed to support the west side of Highway 101 until a new public safety is developed in the Stadium Area Specific Plan Area.	development of the Wilfred/Dowdell Village Specific Plan.	
Mitigation Measure PUB-2 (WDSP EIR Mitigation Measure 3.10-2): The Project applicant shall provide funds for the purchase of equipment needed to outfit the additional Public Safety Officer required as a result of Project development. The amount shall be determined and agreed upon by the Chief of Public Safety and the Finance Director of the City of Rohnert Park. In addition, as part of future development, a public safety station is identified in the stadium area specific plan area and would also be funded by the Graton Rancheria as part of the proposed Casino as well as through capital improvements approved by the Redevelopment Agency and through the PFFP. This funding would reduce the impact to less than significant.	City of Rohnert Park/Public Safety/Finance	As an interim action, Station One on Rohnert Park Expressway will be expanded into a fully-operational station to provide better response to this area until funds have been approved to fund this station. This station would continue to be staffed to support the west side of Highway 101 until a new public safety is developed in the Stadium Area Specific Plan Area.	In conjunction with development of the Wilfred/Dowdell Village Specific Plan.	No activity.
VIII. TRAFFIC				
Mitigation Measure TRAF-1 (WDSP EIR Mitigation Measure 3.6-7): Site design should include adequate fire lanes and other emergency facilities as deemed	City of Rohnert Park/Engineering/Public Safety	Review construction documents to confirm adequate fire lanes	Prior to approval of grading permit.	No activity.

Mitigation Measure	Monitoring Agency	Monitoring Action	Timing	Status
appropriate.		and other emergency facilities.		