CITY OF ROSEVILLE CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT – PLANNING DIVISION
311 Vernon Street, Roseville, CA 95678 (916) 774-5276

MITIGATED NEGATIVE DECLARATION

Project Title/File Number:	NIPA PCL 29 – Green Acres / File Number PL21-0067
Project Location:	7300 Galilee Road, Roseville, Placer County; Various APNs
Project Applicant:	Karenda MacDonald, Borges Architectural Group, Inc.
Property Owner:	TAM Roseville, LLC
Lead Agency Contact Person:	Shelby Maples, Associate Planner - City of Roseville; (916) 774-1347
Date:	June 11, 2021

Project Description:

Request for a Design Review Permit for a new retail store including indoor retail space (31,787 Sq. Ft.), an open sided green house (20,191 Sq. Ft.), lath house (26,835 Sq. Ft.), and outdoor retail area (75,463 Sq. Ft.) for Green Acres. Request for a minor grading plan for the overall property, merger of 3 lots into a single lot for development of a building on the property and abandonment of 2 easements on the property. The grading will include export. The haul route is from the site to Industrial Avenue to the future Roseville Parkway overpass site.

DECLARATION

The Planning Manager has determined that the above project will not have significant effects on the environment and therefore does not require preparation of an Environmental Impact Report. The determination is based on the attached initial study and the following findings:

A. *The project will not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species, reduce the number or restrict the range of rare or endangered plants or animals or eliminate important examples of the major periods of California history or prehistory.*
B. *The project will not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.*
C. *The project will not have impacts, which are individually limited, but cumulatively considerable.*
D. *The project will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly.*
E. *No substantial evidence exists that the project may have a significant effect on the environment.*
F. *The project incorporates all applicable mitigation measures identified in the attached initial study.*
G. *This Mitigated Negative Declaration reflects the independent judgment of the lead agency.*

CITY OF ROSEVILLE CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT–PLANNING DIVISION

311 Vernon St, Roseville, CA 95678 (916) 774-5276

INITIAL STUDY & ENVIRONMENTAL CHECKLIST

Project Title/File Number:	NIPA PCL 29 – Green Acres/PL21-0067
Project Location:	7300 Galilee Road
Project Description:	Request for a Design Review Permit for a new retail store including indoor retail space (31,787 Sq. Ft.), an open sided green house (20,191 Sq. Ft.), lath house (26,835 Sq. Ft.), and outdoor retail area (75,463 Sq. Ft.) for Green Acres. Request for a minor grading plan for the overall property, merger of 3 lots into a single lot for development of a building on the property and abandonment of 2 easements on the property. The grading will include export. The haul route is from the site to Industrial Avenue to the future Roseville Parkway overpass site.
Project Applicant:	Karenda MacDonald, Borges Architectural Group, Inc.
Property Owner:	TAM Roseville, LLC
Lead Agency Contact:	Charity Gold, Associate Planner

This initial study has been prepared to identify and assess the anticipated environmental impacts of the above described project application. The document relies on the previously prepared environmental document for the Sierra Vista Specific Plan and site-specific studies prepared to address in detail the effects or impacts associated with the project (see Attachments). Where documents were submitted by consultants working for the applicant, City staff reviewed such documents in order to determine whether, based on their own professional judgment and expertise, staff found such documents to be credible and persuasive. Staff has only relied on documents that reflect their independent judgment, and has not accepted at face value representations made by consultants for the applicant.

This document has been prepared to satisfy the California Environmental Quality Act (CEQA), (Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (14 CCR 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

The initial study is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to prepare an EIR. If the agency finds no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, a negative declaration shall be prepared. If in the course of analysis, the agency recognizes that the project may have a significant impact on the environment, but that by incorporating specific mitigation measures to which the applicant agrees, the impact will be reduced to a less than significant effect, a mitigated negative declaration shall be prepared.

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PROJECT DESCRIPTION

Project Location

The project is located at 7300 Galilee Road on the southwest side of the intersection of Industrial Avenue and Washington Boulevard (Figure 1). The site is located within the City's North Industrial Planning Area (NIPA) north of Pleasant Grove Boulevard, west of Washington Boulevard, east of Foothills Boulevard, and south of Blue Oaks Boulevard. The site is zoned General Commercial (GC) and has a Community Commercial (CC). General Plan designation. The subject property is undeveloped and surrounded by existing industrial development as detailed in Table 1, below. The property to the northeast of the subject property is currently vacant.

Figure 1: Project Location

Table 1: Site and Vicinity Land Use Designations

Location	Zoning	General Plan Land Use	Actual Use of Property
Site	GC	CC	Vacant
North	M2	IND	Vacant
South	GC	CC	DMV
East	M2	IND	Vacant and Industrial Ave.
West	M1	LI	Light Industrial

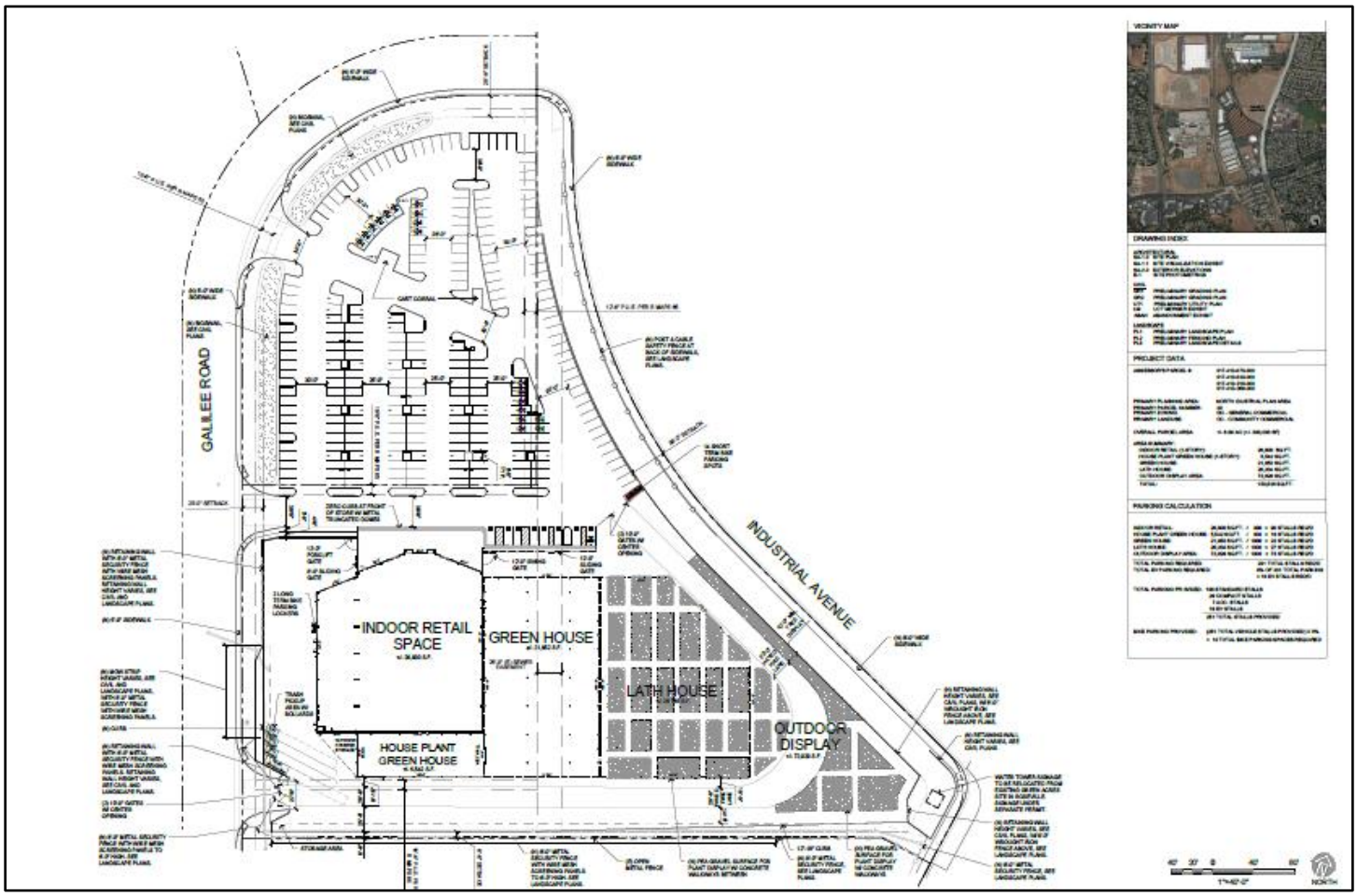
Environmental Setting

The project is located on a vacant property within a developed portion of the City of Roseville. Topography of the site is relatively flat. The site has been heavily disturbed from previous grading for the development of the adjacent Department of Motor Vehicles. There are no protected trees or other biological resources on the site. The current land use and zoning of the site allow for commercial uses.

Proposed Project

The project includes a Design Review Permit, a Minor Grading Plan, and Lot Merger. The project proposes the construction of an approximately 154,246 square-foot Green Acres retail store consisting of 26,795 square feet of indoor retail space, a 20,191 square-foot green house, a 4,992 square-foot house-plant green house, a 26,835 square-foot lath house, and 75,463 square-feet of outdoor display area (Figure 2). The project includes related site grading, installation of parking spaces, lighting and landscaping.

Figure 2: Site Plan



CITY OF ROSEVILLE MITIGATION ORDINANCES, GUIDELINES, AND STANDARDS

For projects that are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified, CEQA Guidelines section 15183(f) allows a lead agency to rely on previously adopted development policies or standards as mitigation for the environmental effects, when the standards have been adopted by the City, with findings based on substantial evidence, that the policies or standards will substantially mitigate environmental effects, unless substantial new information shows otherwise (CEQA Guidelines §15183(f)). The City of Roseville adopted CEQA Implementing Procedures (Implementing Procedures) which are consistent with this CEQA Guidelines section. The current version of the Implementing Procedures were adopted in April 2008, along with Findings of Fact, as Resolution 08-172. The below regulations and ordinances were found to provide uniform mitigating policies and standards, and are applicable to development projects. The City's Mitigating Policies and Standards are referenced, where applicable, in the Initial Study Checklist.

- City of Roseville 2035 General Plan (Amended August 2020)
- City of Roseville Zoning Ordinance (RMC Title 19)
- City of Roseville Design and Construction Standards (Resolution 16-75)
- Subdivision Ordinance (RMC Title 18)
- Noise Regulation (RMC Ch.9.24)

- Flood Damage Prevention Ordinance (RMC Ch.9.80)
- Drainage Fees (Dry Creek [RMC Ch.4.49] and Pleasant Grove Creek [RMC Ch.4.48])
- West Placer Stormwater Quality Design Manual (Resolution 16-152)
- Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20)
- Traffic Mitigation Fee (RMC Ch.4.44)
- Highway 65 Joint Powers Authority Improvement Fee (Resolution 2008-02)
- South Placer Regional Transportation Authority Transportation and Air Quality Mitigation Fee (Resolution 09-05)
- Tree Preservation Ordinance (RMC Ch.19.66)
- Community Design Guidelines (Resolution 95-347)
- Specific Plan Design Guidelines:
    - Development Guidelines Del Webb Specific Plan (Resolution 96-330)
    - Landscape Design Guidelines for North Central Roseville Specific Plan (Resolution 90-170)
    - North Roseville Specific Plan and Design Guidelines (Resolution 00-432)
    - Northeast Roseville Specific Plan (Olympus Pointe) Signage Guidelines (Resolution 89-42)
    - North Roseville Area Design Guidelines (Resolution 92-226)
    - Northeast Roseville Specific Plan Landscape Design Guidelines (Resolution 87-31)
    - Southeast Roseville Specific Plan Landscape Design Guidelines (Resolution 88-51)
    - Stoneridge Specific Plan and Design Guidelines (Resolution 98-53)
    - Highland Reserve North Specific Plan and Design Guidelines (Resolution 97-128)
    - West Roseville Specific Plan and Design Guidelines (Resolution 04-40)
    - Sierra Vista Specific Plan and Design Guidelines (Resolution 12-217)
    - Creekview Specific Plan and Design Guidelines (Resolution 12-320)
    - Amoruso Ranch Specific Plan and Design Guidelines (Resolution 16-273)

OTHER ENVIRONMENTAL DOCUMENTS RELIED UPON

- City of Roseville 3035 General Plan Update Environmental Impact Report
- Amoruso Ranch Specific Plan Final Environmental Impact Report
- Sierra Vista Specific Plan Final Environmental Impact Report

Pursuant to CEQA Guidelines Section 15183, any project that is consistent with the development densities established by zoning, a Community Plan, or a General Plan for which an EIR was certified shall not require additional environmental review, except as may be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. The Amoruso Ranch Specific Plan EIR updated the City's General Plan to 2035, and updated Citywide analyses of traffic, water supply, water treatment, wastewater treatment, and waste disposal. The proposed project is consistent with the adopted land use designations examined within the environmental documents listed above, and thus this Initial Study focuses on effects particular to the specific project site, impacts which were not analyzed within the EIR, and impacts which may require revisiting due to substantial new information. When applicable, the topical sections within the Initial Study summarize the findings within the environmental documents listed above. The analysis, supporting technical materials, and findings of the environmental document are incorporated by reference, and are available for review at the Civic Center, 311 Vernon Street, Roseville, CA.

EXPLANATION OF INITIAL STUDY CHECKLIST

The California Environmental Quality Act (CEQA) Guidelines recommend that lead agencies use an Initial Study Checklist to determine potential impacts of the proposed project on the physical environment. The Initial Study Checklist provides a list of questions concerning a comprehensive array of environmental issue areas potentially affected by this project. This section of the Initial Study incorporates a portion of Appendix G Environmental Checklist Form, contained in the CEQA Guidelines. Within each topical section (e.g. Air Quality) a description of the setting is provided, followed by the checklist responses, thresholds used, and finally a discussion of each checklist answer.

There are four (4) possible answers to the Environmental Impacts Checklist on the following pages. Each possible answer is explained below:

1) A "Potentially Significant Impact" is appropriate if there is enough relevant information and reasonable inferences from the information that a fair argument based on substantial evidence can be made to support a conclusion that a substantial, or potentially substantial, adverse change may occur to any of the physical conditions within the area affected by the project. When one or more "Potentially significant Impact" entries are made, an EIR is required.

2) A "Less Than Significant With Mitigation" answer is appropriate when the lead agency incorporates mitigation measures to reduce an impact from "Potentially Significant" to "Less than Significant." For example, floodwater impacts could be reduced from a potentially-significant level to a less-than-significant level by relocating a building to an area outside of the floodway. The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level. Mitigation measures are identified as MM followed by a number.

3) A "Less Than significant Impact" answer is appropriate if there is evidence that one or more environmental impacts may occur, but the impacts are determined to be less than significant, or the application of development policies and standards to the project will reduce the impact(s) to a less-than-significant level. For instance, the application of the City's Improvement Standards reduces potential erosion impacts to a less-than-significant level.

4) A "No Impact" answer is appropriate where it can be demonstrated that the impact does not have the potential to adversely affect the environment. For instance, a project in the center of an urbanized area with no agricultural lands on or adjacent to the project area clearly would not have an adverse effect on agricultural resources or operations. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources cited in the Initial Study. Where a "No Impact" answer is adequately supported by the information sources cited in the Initial Study, further narrative explanation is not required. A "No Impact" answer is explained when it is based on project-specific factors as well as generous standards.

All answers must take account of the whole action involved, including off- and on-site, indirect, direct, construction, and operation impacts, except as provided for under State CEQA Guidelines.

INITIAL STUDY CHECKLIST

I. Aesthetics

The project is located on a vacant property surrounded by developed properties and existing roadways. Properties to the north and west of the site are developed with light industrial uses. The Department of Motor Vehicles is adjacent of the project's southern property boundary.

There are no scenic vistas or scenic resources within the vicinity of the project.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In non-urbanized area, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

Thresholds of Significance and Regulatory Setting:

The significance of an environmental impact cannot always be determined through the use of a specific, quantifiable threshold. CEQA Guidelines Section 15064(b) affirms this by the statement “an ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.” This is particularly true of aesthetic impacts. As an example, a proposed parking lot in a dense urban center would have markedly different visual effects than a parking lot in an open space area. For the purpose of this study, the significance thresholds are as stated in CEQA Guidelines Appendix G, as shown in a–d of the checklist below. The Findings of the Implementing Procedures indicate that compliance with the Zoning Ordinance (e.g. building height, setbacks, etc), Subdivision Ordinance (RMC Ch. 18), Community Design Guidelines (Resolution 95-347), and applicable Specific Plan Policies and/or Specific Plan Design Guidelines will prevent significant impacts in urban settings as it relates to items a, b, and c, below.

Discussion of Checklist Answers:

a–b) There are no designated or eligible scenic vistas or scenic highways within or adjacent to the City of Roseville.

c) The project site is in an urban setting, and as a result lacks any prominent or high-quality natural features which could be negatively impacted by development. The City of Roseville has adopted Community Design Guidelines (CDG) for the purpose of creating building and community designs which are a visual asset to the community. The CDG includes guidelines for building design, site design and landscape design, which will result in a project that enhances the existing urban visual environment. Accordingly, the aesthetic impacts of the project are less than significant.

d) The project involves nighttime lighting to provide for the security and safety of project users. However, the project is already located within an urbanized setting with many existing lighting sources. Lighting is conditioned to comply with City standards (i.e. CDG) to limit the height of light standards and to require cut-off lenses and glare shields to minimize light and glare impacts. The project will not create a new source of substantial light. None of the project elements are highly reflective, and thus the project will not contribute to an increased source of glare.

II. Agricultural & Forestry Resources

The State Department of Conservation oversees the Farmland Mapping and Monitoring Program, which was established to document the location, quality, and quantity of agricultural lands, and the conversion of those lands over time. The primary land use classifications on the maps generated through this program are: Urban and Built Up Land, Grazing Land, Farmland of Local Importance, Unique Farmland, Farmland of Statewide Importance, and Prime Farmland. According to the current California Department of Conservation Placer County Important Farmland Map (2012), the majority of the City of Roseville is designated as Urban and Built Up Land and most of the open space areas of the City are designated as Grazing Land. There are a few areas designated as Farmland of Local Importance and two small areas designated as Unique Farmland located on the western side of the City along Baseline Road. The current Williamson Act Contract map (2013/2014) produced by the Department of Conservation shows that there are no Williamson Act contracts within the City, and only one (on PFE Road) that is adjacent to the City. None of the land within the City is considered forest land by the Board of Forestry and Fire Protection.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?				X

Thresholds of Significance and Regulatory Setting:

Unique Farmland, Farmland of Statewide Importance, and Prime Farmland are called out as protected farmland categories within CEQA Guidelines Appendix G. Neither the City nor the State has adopted quantified significance thresholds related to impacts to protected farmland categories or to agricultural and forestry resources. For the purpose of this study, the significance thresholds are as stated in CEQA Guidelines Appendix G, as shown in a–e of the checklist above.

Discussion of Checklist Answers:

a–e) The project site is not used for agricultural purposes, does not include agricultural zoning, is not within or adjacent to one of the areas of the City designated as a protected farmland category on the Placer County Important Farmland map, is not within or adjacent to land within a Williamson Act Contract, and is not considered forest land. Given the foregoing, the proposed project will have no impact on agricultural resources.

III. Air Quality

The City of Roseville, along with the south Placer County area, is located in the Sacramento Valley Air Basin (SVAB). The SVAB is within the Sacramento Federal Ozone Non-Attainment Area. Under the Clean Air Act, Placer County has been designated a "serious non-attainment" area for the federal 8-hour ozone standard, “non-attainment” for the state ozone standard, and a "non-attainment" area for the federal and state PM_{10} standard (particulate matter less than 10 microns in diameter). Within Placer County, the Placer County Air Pollution Control District (PCAPCD) is responsible for ensuring that emission standards are not violated. Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Result in a cumulatively considerable net increase of any criteria for which the project region is non-attainment under an applicable federal or state ambient air quality standard?				X
c) Expose sensitive receptors to substantial pollutant concentrations?				X
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?				X

Thresholds of Significance and Regulatory Setting:

In responding to checklist items a–c, project-related air emissions would have a significant effect if they would result in concentrations that either violate an ambient air quality standard or contribute to an existing air quality violation. To assist in making this determination, the PCAPCD adopted thresholds of significance, which were developed by considering both the health-based ambient air quality standards and the attainment strategies outlined in the State Implementation Plan. The PCAPCD-recommended significance threshold for reactive organic gases (ROG) and nitrogen oxides (NO_x) is 82 pounds daily during construction and 55 pounds daily during operation, and for particulate matter (PM) is 82 pounds per day during both construction and operation. For all other constituents, significance is determined based on the concentration-based limits in the Federal and State Ambient Air Quality Standards. Toxic Air Contaminants (TAC) are also of public health concern, but no thresholds or standards are provided because they are considered to have no safe level of exposure. Analysis of TAC is based on the *Air Quality and Land Use Handbook – A Community Health Perspective (*April 2005, California Air Resources Board), which lists TAC sources and recommended buffer distances from sensitive uses. For checklist item c, the PCAPCD's *CEQA Air Quality Handbook* (*Handbook*) recommends that the same thresholds used for the project analysis be used for the cumulative impact analysis.

With regard to checklist item d, there are no quantified significance thresholds for exposure to objectionable odors or other emissions. Significance is determined after taking into account multiple factors, including screening distances from odor sources (as found in the PCAPCD CEQA Handbook), the direction and frequency of prevailing winds, the time of day when emissions are detectable/present, and the nature and intensity of the emission source.

Discussion of Checklist Answers:

a–c) Analyses are not included for sulfur dioxide, lead, and other constituents because there are no mass emission thresholds; these are concentration-based limits in the Federal and State Ambient Air Quality Standards which require substantial, point-source emissions (e.g. refineries, concrete plants, etc) before exceedance will occur, and the SVAB is in attainment for these constituents. Likewise, carbon monoxide is not

analyzed because the SVAB is in attainment for this constituent, and it requires high localized concentrations (called carbon monoxide "hot spots") before the ambient air quality standard would be exceeded. "Hot spots" are typically associated with heavy traffic congestion occurring at high-volume roadway intersections. The Amoruso Ranch EIR analysis of Citywide traffic indicated that 198 out of 226 signalized intersections would operate at level of service C or better—that is, they will not experience heavy traffic congestion. It further indicated that analyses of existing CO concentrations at the most congested intersections in Roseville show that CO levels are well below federal and state ambient air quality standards. The discussions below focus on emissions of ROG, NO_x, or PM. A project-level analysis has been prepared to determine whether the project will, on a singular level, exceed the established thresholds.

Clearing, grading, and construction activities on the 6.89-acre site will result in emissions of criteria pollutants for which the area is in non-attainment. The PCAPCD recommends that lead agencies use the California Emissions Estimator Model (CalEEMod) to quantify a project's construction and operational emissions for criterial air pollutants (NO_X, ROG, and PM). The results are then compared to the significance thresholds established by the district, as detailed above. According to PCAPCD's published screening table, general commercial projects smaller than 249,099 square feet will not result in NO_X emissions that exceed 55 lbs/day. Typically, NO_X emissions are substantially higher than ROG and PM_{10}; therefore, it can be assumed that projects that do not exceed the NO_X threshold will not exceed the ROG and PM_{10} thresholds, and will not result in a significant impact related to operational emissions.

The project proposes the construction of an approximately 154,246 square-foot Green Acres retail store consisting of 26,795 square feet of indoor retail space, a 20,191 square-foot green house, a 4,992 square-foot house-plant green house, a 26,835 square-foot lath house, and 75,463 square-feet of outdoor display area. The project's combined square footage is below PCAPCD's modeled example. Given its small size, the project is not expected to result in construction or operational emissions that would exceed the district's thresholds for significance. To substantiate this assumption, the proposed project's emissions were modeled using the default construction and operational assumptions in CalEEMod version 2016.3.1 (Attachment 1). The lath house and the outdoor display area were excluded from the building square footage because they are outside. The modeled emissions for the project do not exceed the construction and operational thresholds of significance (Table 2).

Table 2: CalEEMod Results

Pollutant	Project Emissions (lbs/day)	Significance Threshold (lbs/day)	Exceeds Threshold?
Construction Emissions			
ROG	28.57	82	No
NO_x	40.53	82	No
PM_{10}	20.26	82	No
Operational Emissions			
ROG	5.52	55	No
NO_x	21.24	55	No
PM_{10}	6.82	82	No

The proposed project would not exceed the applicable thresholds of significance for air pollutant emissions during construction or operation. The project would not conflict with or obstruct implementation of the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (which is the SIP) or contribute substantially to the PCAPCD's nonattainment status for ozone. In addition, because the proposed project would not produce substantial emissions of criteria air pollutants, CO, or TACs, adjacent residents would not be exposed to significant levels of pollutant concentrations during construction or operation. Impacts are less than significant.

e) Diesel fumes from construction equipment and delivery trucks are often found to be objectionable; however, construction is temporary and diesel emissions are minimal and regulated. Typical urban projects such as residences and retail businesses generally do not result in substantial objectionable odors when operated in compliance with City Ordinances (e.g. proper trash disposal and storage). The Project is a typical urban development that lacks any characteristics that would cause the generation of substantial unpleasant odors. Thus, construction and operation of the proposed project would not result in the creation of objectionable odors affecting a substantial number of people. A review of the project surroundings indicates that there are no substantial odor-generating uses near the project site; the project location meets the recommended screening distances from odor-generators provided by the PCAPCD. Impacts related to odors are less than significant.

IV. Biological Resources

The project site consists of disturbed/ruderal habitat dominated by annual grasses and weedy non-native plant species. Topography of the site is generally flat with an elevation range of 135 to 150 feet above MSL. The site has a history of ground disturbance due to adjacent development and grading. There are no drainages or potential wetlands or other regulated waters on the site. Nor are there sensitive habitats or protected trees.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?			X	

Thresholds of Significance and Regulatory Setting:

There is no ironclad definition of significance as it relates to biological resources. Thus, the significance of impacts to biological resources is defined by the use of expert judgment supported by facts, and relies on the policies, codes, and regulations adopted by the City and by regulatory agencies which relate to biological resources (as cited and described in the Discussion of Checklist Answers section). Thresholds for assessing the significance of environmental impacts are based on the CEQA Guidelines checklist items a–f, above. Consistent with CEQA Guidelines Section 15065, a project may have a significant effect on the environment if:

> The project has the potential to substantially 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; [or] substantially reduce the number or restrict the range of an endangered, rare or threatened species *. . .*

Various agencies regulate impacts to the habitats and animals addressed by the CEQA Guidelines checklist. These include the United States Fish and Wildlife Service, National Oceanic and Atmospheric Administration–

Fisheries, United States Army Corps of Engineers, Central Valley Regional Water Quality Control Board, and California Department of Fish and Wildlife. The primary regulations affecting biological resources are described in the sections below.

Checklist item a addresses impacts to special status species. A "special status" species is one which has been identified as having relative scarcity and/or declining populations. Special status species include those formally listed as threatened or endangered, those proposed for formal listing, candidates for federal listing, and those classified as species of special concern. Also included are those species considered to be "fully protected" by the California Department of Fish and Wildlife (California Fish and Wildlife), those granted "special animal" status for tracking and monitoring purposes, and those plant species considered to be rare, threatened, or endangered in California by the California Native Plant Society (CNPS). The primary regulatory protections for special status species are within the Federal Endangered Species Act, California Endangered Species Act, California Fish and Game Code, and the Federal Migratory Bird Treaty Act.

Checklist item b addresses all "sensitive natural communities" and riparian (creekside) habitat that may be affected by local, state, or federal regulations/policies while checklist item c focuses specifically on one type of such a community: protected wetlands. Focusing first on wetlands, the 1987 Army Corps Wetlands Delineation Manual is used to determine whether an area meets the technical criteria for a wetland. A delineation verification by the Army Corps verifies the size and condition of the wetlands and other waters in question, and determines the extent of government jurisdiction as it relates to Section 404 of the Federal Clean Water Act and Section 401 of the State Clean Water Act.

The Clean Water Act protects all "navigable waters", which are defined as traditional navigable waters that are or were used for commerce, or may be used for interstate commerce; tributaries of covered waters; and wetlands adjacent to covered waters, including tributaries. Non-navigable waters are called isolated wetlands, and are not subject to either the Federal or State Clean Water Act. Thus, isolated wetlands are not subject to federal wetland protection regulations. However, in addition to the Clean Water Act, the State also has jurisdiction over impacts to surface waters through the Porter-Cologne Water Quality Control Act (Porter-Cologne), which <u>does not</u> require that waters be "navigable". For this reason, isolated wetlands are regulated by the State of California pursuant to Porter-Cologne. The City of Roseville General Plan also provides protection for wetlands, including isolated wetlands, pursuant to the General Plan Open Space and Conservation Element. Federal, State and City regulations/policies all seek to achieve no net loss of wetland acreage, values, or function.

Aside from wetlands, checklist item b also addresses other "sensitive natural communities" and riparian habitat, which includes any habitats protected by local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. The City of Roseville General Plan Open Space and Conservation Element includes policies for the protection of riparian areas and floodplain areas; these are Vegetation and Wildlife section Policies 2 and 3. Policy 4 also directs preservation of additional area around stream corridors and floodplain if there is sensitive woodland, grassland, or other habitat which could be made part of a contiguous open space area. Other than wetlands, which were already discussed, US Fish and Wildlife and California Department of Fish and Wildlife habitat protections generally result from species protections, and are thus addressed via checklist item a.

For checklist item d, there are no regulations specific to the protection of migratory corridors. This item is addressed by an analysis of the habitats present in the vicinity and analyzing the probable effects on access to those habitats which will result from a project.

The City of Roseville Tree Preservation ordinance (RMC Ch.19.66) requires protection of native oak trees, and compensation for oak tree removal. The Findings of the Implementing Procedures indicate that compliance with the City of Roseville Tree Preservation ordinance (RMC Ch.19.66) will prevent significant impacts related to loss of native oak trees, referenced by item e, above.

Regarding checklist item f, there are no adopted Habitat Conservation Plans within the City of Roseville.

Discussion of Checklist Answers:

a, c, &b) A Biological Resource Assessment was prepared for the Green Acres-Roseville project by Helix Environmental Planning, May 2021 (Attachment 2). The assessment consisted of a special-status species evaluation including a desktop review and database searches to identify known biological resources in the Study Area and vicinity as well as a reconnaissance-level field inspection of the area. The assessment included list of species with the potential to occur within the Roseville, Sheridan, Lincoln, Gold Hill, Rocklin, Pleasant Grove, Rio Linda, Citrus Heights, and Folsom 7.5 minute U.S. Geological Survey quadrangles. The biological reconnaissance of the site was conducted on April 30, 2021 by a Helix staff biologist.

A total of ten special-status plant species and 40 special-status wildlife species were identified as being known to occur within the region surrounding the project site. The project site does not provide habitat for any of the identified special-status plant species. Two special-status wildlife species were identified as having the potential to occur on the project site. These species are discussed below. The remaining 38 wildlife species do not have the potential to occur on the project site.

The grasshopper sparrow and northern harrier are a California state species of special concerns. The project site provides potentially suitable nesting and foraging habitat for these species. However, given the relatively disturbed nature of the project site and the surrounding development, these species have a reduced potential to occur on the project site.

The site and immediate vicinity provide nesting and foraging habitat for a variety of nesting migratory birds that are acclimated to a disturbance regime. Although the site does not contain suitable nesting trees, nesting habit exists on adjacent trees and in onsite shrubs. Project activities such as clearing and grubbing during the breeding season (February 1 through August 31) could result in injury or mortality of eggs and chicks directly through destruction during construction or indirectly through forced nest abandonment due to increased levels of noise and other human-caused disturbance. **Mitigation Measure BIO-1**, below, will ensure that impacts to nests, including those of grasshopper sparrow and northern harrier, are less than significant.

Mitigation Measure BIO-1:

If project activities such as vegetation removal, clearance, grubbing, or other ground disturbance were to commence during the avian breeding season (February 1 through August 31), a qualified biologist should conduct a pre-construction nesting bird survey no more than 14 days prior to initiation of project activities. The survey area should include suitable nesting habitat on the project site and within 500 feet of the project boundary (inaccessible areas offsite can be surveyed from the site or from public roads using binoculars or spotting scopes). Pre-construction surveys are not required in areas where project activities have been continuous since prior to February 1, as determined by a qualified biologist. Areas that have been inactive for more than 14 days during the avian breeding season must be re-surveyed prior to resumption of project activities. If no active nests are identified a summary report should be preparing documenting the results of the survey and no further mitigation is required. If active nests are identified, the following measure should be implemented:

- A suitable buffer should be established around any active nest as determined by a qualified biologist depending on species and surrounding land uses. No construction activities should occur within the buffer until a qualified biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest, or the nest has failed). Limited encroachment into the buffer may occur at the discretion of a qualified biologist depending on type of activity and potential level of disturbance and sensitivity of the avian species in

question. Any encroachment into the buffer should be monitored by a qualified biologist to determine whether nesting birds are being impacted.

c) The Biological Resource Assessment determined that the are no aquatic resources on the site that would qualify as water of the U.S. and/or State. No impacts to protected waters will occur as a result of this project.

d) The City includes an interconnected network of open space corridors and preserves located throughout the City, to ensure that the movement of wildlife is not substantially impeded as the City develops. The development of the project site will not negatively impact these existing and planned open space corridors, nor is the project site located in an area that has been designated by the City, United States Fish and Wildlife, or California Department of Fish and Wildlife as vital or important for the movement of wildlife or the use of native wildlife nursery sites.

e) There are no protected trees or unprotected trees on the subject property.

f) There are no Habitat Conservation Plans; Natural Community Conservation Plans; or other approved local, regional, or state habitat conservation plans that apply to the project site.

V. Cultural Resources

As described within the Open Space and Conservation Element of the City of Roseville General Plan, the Roseville region was within the territory of the Nisenan (also Southern Maidu or Valley Maidu). Two large permanent Nisenan habitation sites have been identified and protected within the City's open space (in Maidu Park). Numerous smaller cultural resources, such as midden deposits and bedrock mortars, have also been recorded in the City. The gold rush which began in 1848 marked another settlement period, and evidence of Roseville's ranching and mining past are still found today. Historic features include rock walls, ditches, low terraces, and other remnants of settlement and activity. A majority of documented sites within the City are located in areas designated for open space uses.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of an historic resource pursuant to in Section 15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of dedicated cemeteries?		X		

Thresholds of Significance and Regulatory Setting:

The significance of impacts to cultural resources is based directly on the CEQA Guidelines checklist items a–e listed above. The Archaeological, Historic, and Cultural Resources section of the City of Roseville General Plan also directs the proper evaluation of and, when feasible, protection of significant resources (Policies 1 and 2). There are also various federal and State regulations regarding the treatment and protection of cultural resources, including the National Historic Preservation Act and the Antiquities Act (which regulate items of significance in history), Section 7050.5 of the California Health and Safety Code, Section 5097.9 of the California Public Resources Code (which regulates the treatment of human remains) and Section 21073 et seq. of the California Public Resources Code (regarding Tribal Cultural Resources). The CEQA Guidelines also contains specific sections, other than the checklist items, related to the treatment of effects on historic resources.

Pursuant to the CEQA Guidelines, if it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2 (a), (b), and (c)). A *historical resource* is a resource listed, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR) (Section 21084.1); a resource included in a local register of historical resources (Section 15064.5(a)(2)); or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5 (a)(3)). Public Resources Code Section 5024.1 requires evaluation of historical resources to determine their eligibility for listing on the CRHR.

Discussion of Checklist Answers:

a–c) No cultural resources are known to exist on the project site; however, subsurface could exist that are yet unknown. In order to assure that no subsurface resources are impacted during ground disturbing activities, standard mitigation measures are recommended to reduce impacts to cultural resources should any be found on the site (see measure CUL-1, below). The measure requires an immediate cessation of work and contact with the appropriate agencies to address the resource before work can resume. With mitigation, project-specific impacts are less than significant.

> **Mitigation Measure CUL-1 Inadvertent Discoveries:** If subsurface deposits believed to be cultural or human in origin, or tribal cultural resources, are discovered during construction, all work shall halt within a 100-foot radius of the discovery, and the Construction Manager shall immediately notify the City of Roseville Development Services Director by phone. The Construction Manager shall also immediately coordinate with the monitoring archeologist or project archaeologist and (if present) tribal monitor, or, in the absence of either, contact consulting tribes and a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for archaeology and subject to approval by the City, to evaluate the significance of the find and develop appropriate management recommendations. All management recommendations shall be provided to the City in writing for the City's review and approval. If recommended by the qualified professional and consulting tribes and approved by the City, this may include modification of the no-work radius.
>
> The professional archaeologist must make a determination, based on professional judgement and supported by substantial evidence, within one business day of being notified, as to whether or not the find represents a cultural resource or has the potential to be a tribal cultural resource. The subsequent actions will be determined by the type of discovery, as described below. These include: 1) a work pause that, upon further investigation, is not actually a discovery and the work pause was simply needed in order to allow for closer examination of soil (a "false alarm"); 2) a work pause and subsequent action for discoveries that are clearly not related to tribal resources, such as can and bottle dumps, artifacts of European origin, and remnants of built environment features; and 3) a work pause and subsequent action

for discoveries that are likely related to tribal resources, such as midden soil, bedrock mortars, groundstone, or other similar expressions.

Whenever there is question as to whether or not the discovery represents a tribal resource, culturally affiliated tribes shall be consulted in making the determination. Whenever a tribal monitor is present, the monitor shall be consulted.

The following processes shall apply, depending on the nature of the find, subject to the review and approval of the City:

Response to False Alarms: If the professional archaeologist determines that the find is negative for any cultural indicators, then work may resume immediately upon notice to proceed from the City's representative. No further notifications or tribal consultation is necessary, because the discovery is not a cultural resource of any kind. The professional archaeologist shall provide written documentation of this finding to the City.

Response to Non-Tribal Discoveries: If a tribal monitor is not present at the time of discovery and a professional archaeologist determines that the find represents a non-tribal cultural resource from any time period or cultural affiliation, the City shall be notified immediately, to consult on a finding of eligibility and implementation of appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. The professional archaeologist shall provide a photograph of the find and a written description to the City of Roseville. The City of Roseville will notify any [tribe(s)] who, in writing, requested notice of unanticipated discovery of non-tribal resources. Notice shall include the photograph and description of the find, and a tribal representative shall have the opportunity to determine whether or not the find represents a tribal cultural resource. If a response is not received within 24 hours of notification (none of which time period may fall on weekends or City holidays), the City will deem this portion of the measure completed in good faith as long as the notification was made and documented. If requested by a [tribe(s)], the City may extend this timeframe, which shall be documented in writing (electronic communication may be used to satisfy this measure). If a notified tribe responds within 24 hours to indicate that the find represents a tribal cultural resource, then the Response to Tribal Discoveries portion of this measure applies. If the tribe does not respond or concurs that the discovery is non-tribal, work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to its satisfaction.

Response to Tribal Discoveries: If the find represents a tribal or potentially tribal cultural resource that does not include human remains, the tribe and City shall be notified. The City will consult with the tribe(s) on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be either a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines, or a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code. Preservation in place is the preferred treatment, if feasible. Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) not a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code; or 3) that the treatment measures have been completed to its satisfaction.

Response to Human Remains: If the find includes human remains, or remains that are potentially human, the construction supervisor or on-site archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641) and shall notify the City

and Placer County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. Public Resources Code § 5097.94 provides structure for mediation through the NAHC if necessary. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the Public Resources Code).

If no agreement is reached, the landowner must rebury the remains in a respectful manner where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

VI. Energy

Roseville Electric provides electrical power in the City, and Pacific Gas and Electric (PG&E) provides natural gas. The City purchases wholesale electrical power form both the Western Area Power Administration (WAPA), which is generated by the federal government's Central Valley Project, which produces 100-percent hydroelectric energy sources from a system of dams, reservoirs, and power plants within central and northern California. In addition, up to 50-percent of the City's power is generated at the City-owned Roseville Energy Park (REP). The REP is a 160 megawatt natural-gas-fired power plant that uses a combined cycle gas turbine technology. The City also owns the 48 megawatt combustion-turbine Roseville Power Plant 2 (REP 2), which is used for peaking energy. The City's electric power mix varies from year to year, but according to the most recent Citywide energy analysis (the Amoruso Ranch EIR), the mix in 2013/2014 was 25-percent eligible renewable (geothermal, small hydroelectric, and wind), 14-percent hydroelectric, 48-percent natural gas, and 13-percent from other sources (power purchased by contract).

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy inefficiency?			X	

Thresholds of Significance and Regulatory Setting:

Established in 2002, California's Renewable Portfolio Standard (RPS) currently requires that 33 percent of electricity retail sales by served by renewable energy resources by 2020, and 50 percent by 2030. The City

published a Renewables Portfolio Standard Procurement Plan in June 2018, and continues to comply with the RPS reporting and requirements and standards. There are no numeric significance thresholds to define "wasteful, inefficient, or unnecessary" energy consumption, and therefore significance is based on CEQA Guidelines checklist items a and b, above, and by the use of expert judgment supported by facts, relying on the policies, codes, and regulations adopted by the City and by regulatory agencies which relate to energy. The analysis considers compliance with regulations and standards, project design as it relates to energy use (including transportation energy), whether the project will result in a substantial unplanned demand on the City's energy resources, and whether the project will impede the ability of the City to meet the RPS standards.

Discussion of Checklist Answers:

a & b) The project would consume energy both during project construction and during project operation. During construction, fossil fuels, electricity, and natural gas would be used by construction vehicles and equipment. However, the energy consumed during construction would be temporary, and would not represent a significant demand on available resources. There are no unusual project characteristics that would necessitate the use of construction equipment or methods that would be less energy-efficient or which would be wasteful.

The completed project would consume energy related to building operation, exterior lighting, landscape irrigation and maintenance, and vehicle trips to and from the use. In accordance with California Energy Code Title 24, the project would be required to meet the Building Energy Efficiency Standards. This includes standards for water and space heating and cooling equipment; insulation for doors, pipes, walls, and ceilings; and appliances, to name a few. The project would also be eligible for rebates and other financial incentives from both the electric and gas providers for the purchase of energy-efficient appliances and systems, which would further reduce the operational energy demand of the project. The project was distributed to both PG&E and Roseville Electric for comments, and was found to conform to the standards of both providers; energy supplies are available to serve the project.

The project is consistent with the existing land use designation, and has therefore been assumed for development with commercial uses in citywide environmental analyses, such as in the Amoruso Ranch Specific Plan, which updated the City's General Plan. The project is therefore consistent with the current citywide assessment of energy demand, and will not result in substantial unplanned demands. In addition, based on the foregoing analysis, the project will not result in inefficient, wasteful, or unnecessary consumption of energy; therefore, impacts are less than significant.

VII. Geology and Soils

As described in the Safety Element of the City of Roseville General Plan, there are three inactive faults (Volcano Hill, Linda Creek, and an unnamed fault) in the vicinity, but there are no known active seismic faults within Placer County. The last seismic event recorded in the South Placer area occurred in 1908, and is estimated to have been at least a 4.0 on the Richter Scale. Due to the geographic location and soil characteristics within the City, the General Plan indicates that soil liquefaction, landslides, and subsidence are not a significant risk in the area.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
i) Ruptures 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.)			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located in a geological 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?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
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?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?			X	

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to geology and soils is based directly on the CEQA Guidelines checklist items a–f listed above. Regulations applicable to this topic include the Alquist-Priolo Act, which addresses earthquake safety in building permits, and the Seismic Hazards Mapping Act, which requires the state to gather and publish data on the location and risk of seismic faults. The Archaeological, Historic, and Cultural Resources section of the City of Roseville General Plan also directs the proper evaluation of and, when feasible, protection of significant archeological resources, which for this evaluation will include paleontological resources (Policies 1 and 2). Section 50987.5 of the California Public Code Section is only applicable to public land; this section prohibits the excavation, removal, destruction, or defacement/injury to any vertebrate paleontological site, including fossilized footprints or other paleontological feature.

The Findings of the Implementing Procedures indicate that compliance with the Flood Damage Prevention Ordinance (RMC Ch.9.80) and Design/Construction Standards (Resolution 07-107) will prevent significant impacts related to checklist item b. The Ordinance and standards include permit requirements for construction and development in erosion-prone areas and ensure that grading activities will not result in significant soil erosion or loss of topsoil. The use of septic tanks or alternative waste systems is not permitted in the City of Roseville, and therefore no analysis of criterion e is necessary.

Discussion of Checklist Answers:

a) The project will not expose people or structures to potential substantial adverse effects involving seismic shaking, ground failure or landslides.

i–iii) According to United States Geological Service mapping and literature, active faults are largely considered to be those which have had movement within the last 10,000 years (within the Holocene or Historic time periods)[1] and there are no major active faults in Placer County. The California Geological Survey has prepared a map of the state which shows the earthquake shaking potential of areas throughout California based primarily on an area's distance from known active faults. The map shows that the City lies in a relatively low-intensity ground-shaking zone. Commercial, institutional, and residential buildings as well as all related infrastructure are required, in conformance with Chapter 16, *Structural Design Requirements*, Division IV, *Earthquake Design* of the California Building Code, to lessen the exposure to potentially damaging vibrations through seismic-resistant design. In compliance with the Code, all structures in the Project area would be well-built to withstand ground shaking from possible earthquakes in the region; impacts are less than significant.

iv) Landslides typically occur where soils on steep slopes become saturated or where natural or manmade conditions have taken away supporting structures and vegetation. The existing and proposed slopes of the project site are not steep enough to present a hazard during development or upon completion of the project. In addition, measures would be incorporated during construction to shore minor slopes and prevent potential earth movement. Therefore, impacts associated with landslides are less than significant.

b) Grading activities will result in the disruption, displacement, compaction and over-covering of soils associated with site preparation (grading and trenching for utilities). Grading activities for the project will be limited to the project site. Grading activities require a grading permit from the Engineering Division. The grading permit is reviewed for compliance with the City's Improvement Standards, including the provision of proper drainage, appropriate dust control, and erosion control measures. Grading and erosion control measures will be incorporated into the required grading plans and improvement plans. Therefore, the impacts associated with disruption, displacement, and compaction of soils associated with the project are less than significant.

[1] United States Geological Survey, http://earthquake.usgs.gov/learn/glossary/?term=active%20fault, Accessed January 2016

c, d) A review of the Natural Resources Conservation Service Soil Survey for Placer County, accessed via the Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/), indicates that the soils on the site are Cometa-Fiddyment complex with 1 to 5 percent slopes, which are not listed as geologically unstable or sensitive.

f) No paleontological resources are known to exist on the project site; however, standard mitigation measures apply which are designed to reduce impacts to such resources, should any be found on-site. The measure requires an immediate cessation of work, and contact with the appropriate agencies to address the resource before work can resume. This mitigation will ensure that the project will not result in any significant impacts.

VIII. Greenhouse Gases

Greenhouse gases trap heat in the earth's atmosphere. The principal greenhouse gases (GHGs) that enter the atmosphere because of human activities are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. As explained by the United States Environmental Protection Agency[2], global average temperature has increased by more than 1.5 degrees Fahrenheit since the late 1800s, and most of the warming of the past half century has been caused by human emissions. The City has taken proactive steps to reduce greenhouse gas emissions, which include the introduction of General Plan policies to reduce emissions, changes to City operations, and climate action initiatives.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Thresholds of Significance and Regulatory Setting:

In Assembly Bill 32 (the California Global Warming Solutions Act), signed by Governor Schwarzenegger of California in September 2006, the legislature found that climate change resulting from global warming was a threat to California, and directed that "the State Air Resources Board design emissions reduction measures to meet the statewide emissions limits for greenhouse gases . . .". The target established in AB 32 was to reduce emissions to 1990 levels by the year 2020. CARB subsequently prepared the *Climate Change Scoping Plan* (Scoping Plan) for California, which was approved in 2008. The Scoping Plan provides the outline for actions to reduce California's GHG emissions. CARB's updated August 2011 Scoping Plan calculated a reduction needed of 21.7% from future "Business As Usual" (BAU) conditions in the year 2020. The current Scoping Plan (adopted May 2014) indicates that statewide emissions of GHG in 1990 amounted to 431 million metric tons, and that the 2020 "Business As Usual" (BAU) scenario is estimated as 509[3] million metric tons, which would require a reduction of 15.3% from 2020 BAU. In addition to this, Senate Bill 32 was signed by the Governor on September

[2] http://www3.epa.gov/climatechange/science/overview.html, Accessed January 2016

[3] Includes Pavely and Renewables Portfolio Standard reduction

8, 2016, to establish a reduction target of 40 percent below 1990 levels by 2030. The Air Resources Board is currently updating the Scoping Plan to reflect this target.

The Placer County Air Pollution Control District (PCAPCD) recommends that thresholds of significance for GHG be related to AB 32 reduction goals, and has adopted thresholds of significance which take into account the 2030 reduction target. The thresholds include a de minimis and a bright-line maximum threshold. Any project emitting less than 1,100 metric tons of carbon dioxide equivalents per year (MT CO_2e/yr) during construction or operation results in less than significant impacts. The PCAPCD considers any project with emissions greater than the bright-line cap of 10,000 MT CO_2e/yr to have significant impacts. For projects exceeding the de minimum threshold but below the bright-line threshold, comparison to the appropriate efficiency threshold is recommended. The significance thresholds are shown in Table 3 below.

Table 3: GHG Significance Thresholds

Bright-line Threshold 10,000 MT CO_2e/yr			
Residential Efficiency (MT CO_2e/capita[1])		**Non-Residential Efficiency (MT CO_2e/ksf[2])**	
Urban	**Rural**	**Urban**	**Rural**
4.5	5.5	26.5	27.3
De Minimis Threshold 1,100 MT CO_2e/yr			

1. Per Capita = per person
2. Per ksf = per 1,000 square feet of building

Discussion of Checklist Answers:

a–b) Greenhouse gases are primarily emitted as a result of vehicle operation associated with trips to and from a project, and energy consumption from operations of the buildings. Greenhouse gases from vehicles are assessed based on the vehicle miles traveled (VMT) resulting from a project, on a Citywide basis. Residential project, destination centers (such as a regional mall), and major employers tend to increase VMT in a study area, either by adding new residents traveling in an area, or by encouraging longer trip lengths and drawing in trips from a broader regional area. However, non-residential projects and neighborhood-serving uses (e.g. neighborhood parks) tend to lower VMT in a study area because they do not generate new trips within the study area, they divert existing trips. These trips are diverted because the new use is closer to home, on their way to another destination (e.g. work), or is otherwise more convenient.

The proposed project includes a retail use that is not considered a destination center, which would increase VMT beyond what has been assumed for the site in the City's General Plan. As discussed in the Transportation section of this Initial Study, the project is consistent with the City's General Plan and will not create additional trips that have not already been evaluated in the General Plan EIR.

The City's GPU EIR included an analysis of GHG emissions, which would result from buildout of the City's General Plan. The EIR concluded that General Plan build out would exceed the City's threshold of 2.25 MT CO_{2e} per service population and that the affect was cumulatively considerable. Although mitigation measures were adopted as part of the General Plan those measures would not reduce impacts to less-than-significant levels and impacts were considered significant and unavoidable. The proposed project is consistent with the land use assumptions in the GPU EIR and does not require further analysis per the tiering provisions of CEQA.

The project includes reasonable and feasible design measures to reduce emissions, including implementation of the latest Cal-Green and energy efficiency code requirements and alternative transportation measures like bike storage or racks and clean air vehicle parking. The project complies with General Plan policy related to

GHG and the project will not result in any new GHG impacts not previously analyzed in the GPU EIR; therefore, impacts are less than significant.

IX. Hazards and Hazardous Materials

There are no known hazardous materials located on the subject property, and no indication that there is the potential for hazardous materials. EnviroStor, the California Department of Toxic Substances Control's data management system, indicated that no hazardous waste facilities or sites with known contamination are located within 1,000 feet of the subject parcel. Similarly, the GeoTracker application, which is the California State Water Resources Control Board's data management system that tracks sites which impact or have the potential to impact water quality (particularly groundwater) in California, did not indicate that there were any sites requiring cleanup within 1,000 feet of the project site.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment though reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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?				X

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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 or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to hazardous materials is based directly on the CEQA Guidelines checklist items a–g listed above. A material is defined as hazardous if it appears on a list of hazardous materials prepared by a federal, state or local regulatory agency, or if it has characteristics defined as hazardous by such an agency. The determination of significance based on the above criteria depends on the probable frequency and severity of consequences to people who might be exposed to the health hazard, and the degree to which Project design or existing regulations would reduce the frequency of or severity of exposure. As an example, products commonly used for household cleaning are classified as hazardous when transported in large quantities, but one would not conclude that the presence of small quantities of household cleaners at a home would pose a risk to a school located within ¼-mile.

Many federal and State agencies regulate hazards and hazardous substances, including the United States Environmental Protection Agency (US EPA), California Department of Toxic Substances Control (DTSC), Central Valley Regional Water Quality Control Board (Regional Water Board), and the California Occupational Safety and Health Administration (CalOSHA). The state has been granted primacy (primary responsibility for oversight) by the US EPA to administer and enforce hazardous waste management programs. State regulations also have detailed planning and management requirements to ensure that hazardous materials are handled, stored, and disposed of properly to reduce human health risks. California regulations pertaining to hazardous waste management are published in the California Code of Regulations (see 8 CCR, 22 CCR, and 23 CCR).

The project is not within an airport land use plan or within two miles of a public or private use airport. Therefore, no further discussion is provided for item e.

Discussion of Checklist Answers:

a, b) Standard construction activities would require the use of hazardous materials such as fuels, oils, lubricants, glues, paints and paint thinners, soaps, bleach, and solvents. These are common household and commercial materials routinely used by both businesses and average members of the public. The materials only pose a hazard if they are improperly used, stored, or transported either through upset conditions (e.g. a vehicle accident) or mishandling. In addition to construction use, the operational project would result in the use of common hazardous materials as well, including bleach, solvents, and herbicides. Regulations pertaining to the transport of materials are codified in 49 Code of Federal Regulations 171–180, and transport regulations are enforced and monitored by the California Department of Transportation and by the California Highway Patrol. Specifications for storage on a construction site are contained in various regulations and codes, including the California Code of Regulations, the Uniform Fire Code, and the California Health and Safety Code. These same codes require that all hazardous materials be used and stored in the manner specified on the material packaging. Existing regulations and programs are sufficient to ensure that potential impacts as a result of the use or storage of hazardous materials are reduced to less than significant levels.

c) See response to Items (a) and (b) above. While development of the site will result in the use, handling, and transport of materials deemed to be hazardous, the materials in question are commonly used in both residential and commercial applications, and include materials such as bleach and herbicides. The project will not result in the use of any acutely hazardous materials, substances, or waste.

d) The project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5[4]; therefore, no impact will occur.

e) This project is located within an area currently receiving City emergency services and development of the site has been anticipated and incorporated into emergency response plans. Therefore, the project will cause a less than significant impact to the City's Emergency Response or Management Plans. Furthermore, the project will be required to comply with all local, State and federal requirements for the handling of hazardous materials, which will ensure less-than-significant impacts. These will require the following programs:

- A Risk Management and Prevention Program (RMPP) is required of uses that handle toxic and/or hazardous materials in quantities regulated by the California Health and Safety Code and/or the City.

- Businesses that handle toxic or hazardous materials are required to complete a Hazardous Materials Management Program (HMMP) pursuant to local, State, or federal requirements.

g) The California Department of Forestry and Fire Protection (CAL FIRE) is the state agency responsible for wildland fire protection and management. As part of that task, CAL FIRE maintains maps designating Wildland Fire Hazard Severity zones. The City is not located within a Very High Fire Hazard Severity Zone, and is not in a CAL FIRE responsibility area; fire suppression is entirely within local responsibility. The project site is in an urban area, and therefore would not expose people to any risk from wildland fire. There would be no impact with regard to this criterion.

X. Hydrology and Water Quality

As described in the Open Space and Conservation Element of the City of Roseville General Plan, the City is located within the Pleasant Grove Creek Basin and the Dry Creek Basin. Pleasant Grove Creek and its tributaries drain most of the western and central areas of the City and Dry Creek and its tributaries drain the remainder of the City. Most major stream areas in the City are located within designated open space.

[4] http://www.calepa.ca.gov/SiteCleanup/CorteseList/SectionA.htm

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			X	
i) result in substantial erosion or siltation on or off-site;			X	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater systems or provide substantial additional sources of polluted runoff; or			X	
iv) impede or redirect flood flows?			X	
d) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
e) In flood hazard, tsunami, or seiches zones, risk release of pollutants due to project innundation?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to hydrology and water quality is based directly on the CEQA Guidelines checklist items a–e listed above. For checklist item a, c (i), d, and e, the Findings of the Implementing Procedures indicate that compliance with the City of Roseville Design/Construction Standards (Resolution 07-107), Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20), and Stormwater Quality Design Manual (Resolution 16-152) will prevent significant impacts related to water quality or erosion. The standards require preparation of an erosion and sediment control plan for construction activities and includes designs to control pollutants within post-construction urban water runoff. Likewise, it is indicated that the Drainage Fees for the Dry Creek and Pleasant Grove Watersheds (RMC Ch.4.48) and City of Roseville Design/Construction Standards (Resolution 07-107) will prevent significant impacts related to checklist items c (ii) and c (iii). The ordinance and standards require the collection of drainage fees to fund improvements that mitigate potential flooding impacts, and require the design of a water drainage system that will adequately convey anticipated stormwater flows without increasing the rate or amount of surface runoff. These same ordinances and standards prevent impacts related to groundwater (items a and d), because developers are required to treat and detain all stormwater onsite using stormwater swales and other methods which slow flows and preserve infiltration. Finally, it is indicated that compliance with the Flood Damage Prevention Ordinance (RMC Ch. 9.80) will prevent significant impacts related to items c (iv) and e. The Ordinance includes standard requirements for all new construction, including regulation of development with the potential to impede or redirect flood flows, and prohibits development within flood hazard areas. Impacts from tsunamis and seiches were screened out of the analysis (item e) because the project is not located near a water body or other feature that would pose a risk of such an event.

Discussion of Checklist Answers:

a,c (i),d, e) The project will involve the disturbance of on-site soils and the construction of impervious surfaces, such as asphalt paving and buildings. Disturbing the soil can allow sediment to be mobilized by rain or wind, and cause displacement into waterways. To address this and other issues, the developer is required to receive approval of a grading permit and/or improvement plants prior to the start of construction. The permit or plans are required to incorporate mitigation measures for dust and erosion control. In addition, the City has a National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit issued by the Central Valley Regional Water Quality Control Board which requires the City to reduce pollutants in stormwater to the maximum extent practicable. The City does this, in part, by means of the City's 2016 Design/Construction Standards, which require preparation and implementation of a Stormwater Pollution Prevention Plan. All permanent stormwater quality control measures must be designed to comply with the City's Manual for Stormwater Quality Control Standards for New Development, the City's 2016 Design/Construction Standards, Urban Stormwater Quality Management and Discharge Control Ordinance, and Stormwater Quality Design Manual. For these reasons, impacts related to water quality are less than significant.

b, d) The project does not involve the installation of groundwater wells. The City maintains wells to supplement surface water supplies during multiple dry years, but the effect of groundwater extraction on the aquifer was addressed in the Water Supply Assessment of the Amoruso Ranch Specific Plan EIR, which included a Citywide water analysis. The proposed project is consistent with the General Plan land use designation, and is thus consistent with the citywide Water Supply Assessment. Project impacts related to groundwater extraction are

less than significant. Furthermore, all permanent stormwater quality control measures must be designed to comply with the Stormwater Quality Design Manual, which requires the use of bioswales and other onsite detention and infiltration methods. These standards ensure that stormwater will continue to infiltrate into the groundwater aquifer.

c (ii and iii)) The project has been reviewed by City Engineering staff for conformance with City ordinances and standards. The project includes adequate and appropriate facilities to ensure no net increase in the amount or rate of stormwater runoff from the site, and which will adequately convey stormwater flows.

c (iv) and e) The project has been reviewed by City Engineering staff for conformance with City ordinances and standards. The project is not located within either the Federal Emergency Management Agency floodplain or the City's Regulatory Floodplain (defined as the floodplain which will result from full buildout of the City). Therefore, the project will not impede or redirect flood flows, nor will it be inundated. The proposed project is located within an area of flat topography and is not near a waterbody or other feature which could cause a seiche or tsunami. There would be no impact with regard to these criterion.

XI. Land Use and Planning

The project site is within the City's North Industrial Planning Area, has a land use designation of CC, and a zoning designation of GC. The proposed Green Acres retail use is permitted in the GC zone. The project is within a developed portion of the City surrounded by existing light industrial uses.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to land use is based directly on the CEQA Guidelines checklist items a and b listed above. Consistency with applicable City General Plan policies, Improvement Standards, and design standards is already required and part of the City's processing of permits and plans, so these requirements do not appear as mitigation measures.

Discussion of Checklist Answers:

a) The project area has been master planned for development, including adequate roads, pedestrian paths, and bicycle paths to provide connections within the community. The project will not physically divide an established community.

b) The proposed development is consistent with the existing neighborhood and does not conflict with policies or regulations adopted for the purpose of avoiding or mitigating an environmental impact. Impacts are less than significant.

XII. Mineral Resources

The Surface Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZ's) based on the known or inferred mineral resource potential of that land. The California Division of Mines and Geology (CDMG) was historically responsible for the classification and designation of areas containing—or potentially containing—significant mineral resources, though that responsibility now lies with the California Geological Survey (CGS). CDMG published Open File Report 95-10, which provides the mineral classification map for Placer County. A detailed evaluation of mineral resources has not been conducted within the City limits, but MRZ's have been identified. There are four broad MRZ categories (MRZ-1 through MRZ-4), and only MRZ-2 represents an area of known significant mineral resources. The City of Roseville General Plan EIR included Exhibit 4.1-3, depicting the location of MRZ's in the City limits. There is only one small MRZ-2 designation area, located at the far eastern edge of the City.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?				X
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?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to mineral resources is based directly on the CEQA Guidelines checklist items a and b listed above.

Discussion of Checklist Answers:

a–b) The project site is not in the area of the City known to include any mineral resources that would be of local, regional, or statewide importance; therefore, the project has no impacts on mineral resources.

XIII. Noise

The project consists of a Green Acres retail store. The store include both interior and exterior retail space. The noise generated from the use is expected to be consistent with similar retail uses. The store will be located with roadway frontage on all but the southern side of the building. The Department of Motor Vehicles is located adjacent to the southern property boundary. There are no sensitive land uses adjacent to the project.

Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive ground borne vibration of ground borne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or 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?				X

Thresholds of Significance and Regulatory Setting:

Standards for transportation noise and non-transportation noise affecting existing or proposed land uses are established within the City of Roseville General Plan Noise Element Table IX-1 and IX-3, and these standards are used as the thresholds to determine the significance of impacts related to items a and c. The significance of other noise impacts is based directly on the CEQA Guidelines checklist items b and c listed above. The Findings of the Implementing Procedures indicate that compliance with the City Noise Regulation (RMC Ch. 9.24) will prevent significant non-transportation noise as it relates to items a and b. The Ordinance establishes noise exposure standards that protect noise-sensitive receptors from a variety of noise sources, including non-transportation/fixed noise, amplified sound, industrial noise, and events on public property. The project is not within an airport land use plan, within two miles of a public or public use airport and there are also no private airstrips in the vicinity of the project area. Therefore, item c has been ruled out from further analysis.

Discussion of Checklist Answers:

a) The City's Noise Ordinance includes sound limits for sensitive receptors. Section 9.24.100 states that noise measured at the property line of a sensitive receptor shall not exceed the ambient sound level by 3 dBA, or exceed the sound level standard in Table 1 (Figure 3), whichever is greater.

The subject property is surrounded by industrial development with residentially designated properties to the southeast across Washington Boulevard. The project consists of a commercial use adjacent to other commercial uses, industrial uses, and Industrial Avenue. The nearest sensitive land use to the site is located 250 feet to the

east of the project site, across Washington Boulevard. This land use is a residential subdivision that backs on to Washington Boulevard. A masonry wall attenuates roadway noise in the backyards of these residences.

For commercial uses noise is typically generated from loading docks. The project does not include loading docks or truck routes and will not generate noise that that will exceed City standards at the property lines of the residential properties on the east side of Washington Boulevard. Impacts related to noise generated from the proposed project are less than significant.

Figure 3: Noise Ordinance Table 1

Table 1
SOUND LEVEL STANDARDS
(for non-transportation or fixed sound sources)

Sound Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly l_{eq}, dB	50	45
Maximum level, dB	70	65

A. Each of the sound level standards specified in Table 1 shall be reduced by five dB for simple tone noises, consisting of speech and music. However, in no case shall the sound level standard be lower than the ambient sound level plus three dB.

B. If the intruding sound source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient sound level can be measured, the sound level measured while the source is in operation shall be compared directly to the sound level standards of Table 1. (Ord. 3638 § 1, 2001.)

b) Surrounding uses may experience short-term increases in groundborne vibration, groundborne noise, and airborne noise levels during construction. However, these increases would only occur for a short period of time. When conducted during daytime hours, construction activities are exempt from Noise Ordinance standards, but the standards do apply to construction occurring during nighttime hours. While the noise generated may be a minor nuisance, the City Noise Regulation standards are designed to ensure that impacts are not unduly intrusive. Based on this, the impact is less than significant.

XIV. Population and Housing

The project site is located within the NIPA and has a land use designation of CC. The City of Roseville General Plan Table II-4 identifies the total number of residential units and population anticipated as a result of buildout of the City, no housing was anticipated for the project site.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, though extension of roads or other infrastructure)?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to population and housing is based directly on the CEQA Guidelines checklist items a and b listed above.

Discussion of Checklist Answers:

a) The CEQA Guidelines identify several ways in which a project could have growth-inducing impacts (Public Resources Code Section 15126.2), either directly or indirectly. Growth-inducement may be the result of fostering economic growth, fostering population growth, providing new housing, or removing barriers to growth. Growth inducement may be detrimental, beneficial, or of no impact or significance under CEQA. An impact is only deemed to occur when it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be shown that the growth will significantly affect the environment in some other way. The project is consistent with the land use designation of the site. Therefore, while the project in question will induce some level of growth, this growth was already identified and its effects disclosed and mitigated within the SVSP EIR. Therefore, the impact of the project is less than significant.

b) The project site is vacant. No housing exists on the project site, and there would be no impact with respect to these criteria.

XV. Public Services

Fire protection, police protection, park services, and library services are provided by the City. 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 government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to public services is based directly on the CEQA Guidelines checklist items a–e listed above. The EIR for the SVSP addressed the level of public services which would need to be provided in order to serve planned growth in the community. Development Agreements and other conditions have been

adopted in all proposed growth areas of the City which identify the physical facilities needed to serve growth, and the funding needed to provide for the construction and operation of those facilities and services; the project is consistent with the SVSP. In addition, the project has been routed to the various public service agencies, both internal and external, to ensure that the project meets the agencies' design standards (where applicable) and to provide an opportunity to recommend appropriate conditions of approval.

Discussion of Checklist Answers:

a) Existing City codes and regulations require adequate water pressure in the water lines, and construction must comply with the Uniform Fire and Building Codes used by the City of Roseville. Additionally, the applicant is required to pay a fire service construction tax, which is used for purchasing capital facilities for the Fire Department. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

b) Sales taxes and property taxes resulting from the development will add revenue to the General Fund, which also serves to fund police services. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

c) The applicant for this project is required to pay school impact fees at a rate determined by the local school districts. School fees will be collected prior to the issuance of building permits, consistent with City requirements. School sites have already been designated as part of the Specific Plan process. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

d) The project includes a commercial use that will not require additional park services beyond those that have already been planned and funded within the City. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

e) The City charges fees to end-users for other services, such as garbage and greenwaste collection, in order to fund those services. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

XVI. Recreation

The project is in a developing part of the City with no existing parks within the vicinity of the subject property. There are parks planned northeast and northwest of the site and the site is adjacent to planned open space.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated?				X

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to recreation services is based directly on the CEQA Guidelines checklist items a–b listed above.

Discussion of Checklist Answers:

a) Given that the project is consistent with the City's General Plan, the project would not cause any unforeseen or new impacts related to the use of existing or proposed parks and recreational facilities. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

b) The project will not cause any unforeseen or new impacts related to the construction or expansion of recreational facilities.

XVII. Transportation

The project is located on between Industrial Avenue and Galilee Road. Industrial Avenue is a two-lane road that terminates at its intersection with Washington Boulevard near the project's southeastern boundary. Galilee Road is a two-lane road that contained between its intersection with Industrial Avenue and Pleasant Grove Boulevard. The proposed project will be accessed from x driveways located on Galilee Road. No access is proposed from Industrial Avenue. The project includes frontage improvements including landscaping adjacent to Galilee Road and Industrial Avenue.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature(s) (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Thresholds of Significance and Regulatory Setting:

CEQA Guidelines Section 15064.3 indicates that a project's effect on automobile delay cannot be considered a significant impact, and directs transportation system analysis to focus on vehicle miles traveled (VMT), per checklist item b. However, the CEQA Guidelines also include consistency with a program, plan, or policy addressing transportation systems as an area of potential environmental effects (checklist item a). The City has adopted the following plans, ordinances, or policies applicable to this checklist item: Pedestrian Master Plan, Bicycle Master Plan, and Short-Range Transit Plan, and Updated General Plan Circulation Element. The project is evaluated for consistencies with these plans and the policies contained within them, which includes an analysis of delay. The Updated Circulation Element of the General Plan establishes Level of Service C or better as an acceptable operating condition at all signalized intersections during a.m. and p.m. peak hours. Exceptions to this policy may be made by the City Council, but a minimum of 70% of all signalized intersections must maintain LOS C. The Findings of the Implementing Procedures indicate that compliance with the Traffic Mitigation Fee (RMC Ch. 4.44) will fund roadway projects and improvements necessary to maintain the City's Level of Service standards for projects consistent with the General Plan and related Specific Plan. An existing plus project conditions (short-term) traffic impact study may be required for projects with unique trip generation or distribution characteristics, in areas of local traffic constraints, or to study the proposed project access. A cumulative plus project conditions (long-term) study is required if a project is inconsistent with the General Plan or Specific Plan and would generate more than 50 pm peak-hour trips. The guidelines for traffic study preparation are found in the City of Roseville Design and Construction Standards–Section 4.

For checklist item b, the CEQA Guidelines Section 15064.3 establishes a detailed process for evaluating the significance of transportation impacts. In accordance with this section, the analysis must focus on the generation of vehicle miles traveled (VMT). Projects within one-half mile of either an existing major transit stop[5] or a stop along an existing high quality transit corridor[6] should be presumed to have less than significant impacts, as should any project which will decrease VMT when compared with the existing conditions. VMT may be analyzed qualitatively if existing models or methods are not available to estimate VMT for a particular project; this will generally be appropriate for discussions of construction traffic VMT.

Impacts with regard to items c and d are assessed based on the expert judgment of the City Engineer and City Fire Department, as based upon facts and consistency with the City's Design and Construction Standards.

[5] A site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. (Public Resources Code Section 21064.3)
[6] A corridor with fixed route bus service at service intervals of 15 minutes or less during peak commute hours.

Discussion of Checklist Answers:

a) The project is located in an area planned for commercial uses along the eastern side of Galilee Road and the western side of Industrial Avenue. The project is in an area that is currently developed. The proposed project will be constructed consistent with the planned roadway system and in compliance with the requirements of the NIPA Guidelines and the General Plan. The project was reviewed by the City's Engineering Division for consistency with the buildout assumptions in the City's General Plan. Additionally, a Traffic Analysis was prepared to evaluate the project's localized traffic operations and access points to ensure efficient traffic operations (Attachment 3). The analysis used the Institute of Transportation Engineers' (ITE) trip generation methods and evaluated six local intersections (Galilee Road @ Northern Site Access Driveway, Galilee Road @ Southern Site Access Driveway, Industrial Avenue @ Southern Site Access Driveway, Industrial Avenue @ Galilee Road, Washington Boulevard @ Industrial Avenue, Pleasant Grove Boulevard @ Galilee Road and Pleasant Grove Boulevard @ Washington Boulevard).

The anticipated trips were estimated using the Trip Generation Manual, 10th Edition, and a nursery size of 31,787 square feet. The results are detailed in Table 4, below. The project is anticipated to generate 77 AM and 221 PM trips during the weekday AM and PM peak hours. The distribution of these trips was predicted based on existing project area roadway volumes, general knowledge of project area traffic patterns, and engineering judgement.

Table 4: Trip Generation Data

Land Use (ITE Code)	Size (SF)	Daily Trips	AM Peak-Hour			PM Peak-Hour		
			Total Trips	Trips In	Trips Out	Total Trips	Trip In	Trips Out
Nursery (Garden Center)(817)	31,787	2,180	77	39 (50%)	38 (50%)	221	111 (50%)	110 (50%)
Net New Project Trips		**2,180**	**77**	**39**	**38**	**221**	**111**	**110**
Source: Trip Generation Manual, 10th Edition, ITE								

The evaluation of the project's storage included consideration of vehicle queuing entering the site and the associated minimum required throat depth at both site driveways. The evaluation determined that the available throat depth for both driveways is approximately 50 feet. This exceeds the minimum requirement of 25 feet. An evaluation of sight distance determined that the line of sight would be preserved by limiting parking on Galilee Road between the driveway and Industrial Boulevard and providing 50-foot clear zones on each side of the project driveways.

These recommendations are features of the project, and therefore no mitigation is required. Compliance with existing regulations will ensure that impacts are less than significant.

b) Traffic analyses focus on the number of trips traveling in specified areas during peak periods, in order to quantify impacts at specific intersections. However, there is no direct relationship between the number of trips and the amount of VMT generated by a use. Projects which substantially increase trips to a specific area may in fact decrease VMT in the City. As an example, if a new grocery store is added to an area, customers who go to that store were already going to a grocery store elsewhere, and are most likely to choose the new store because it is closer to home or on their way to another location (e.g. work). Therefore, while the store would generate substantial new trips, it would lower Citywide VMT. Unless a project includes unique characteristics, non-residential projects do not increase VMT; they divert existing trips into a similar or more efficient pathway.

According to the Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory), "new retail development typically redistributes shopping trips rather than creating new trips," and most importantly:

> "By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact."

In other words, the Technical Advisory indicates that local-serving retail (and other commercial uses) generally redistributes trips in a manner that reduces VMT compared to the existing baseline. The project is local-serving commercial, as defined in the City's General Plan[1] and based on an evaluation of the specific site setting. The proposed project is a non-residential development, surrounded by a developing community. The project does not include any unique characteristics which would draw in regional traffic, or that would prompt longer trips. The project would serve the surrounding community, and would therefore have a neutral or positive affect on vehicle miles traveled. The project is consistent with the City's General Plan and will not create additional trips that have not already been evaluated in the General Plan EIR. Impacts are less than significant.

c, d) The project has been reviewed by the City Engineering and City Fire Department staff, and has been found to be consistent with the City's Design Standards. Furthermore, standard conditions of approval added to all City project require compliance with Fire Codes and other design standards. Compliance with existing regulations ensure that impacts are less than significant.

XVIII. Tribal Cultural Resources

As described within the Open Space and Conservation Element of the City of Roseville General Plan, the Roseville region was within the territory of the Nisenan (also Southern Maidu or Valley Maidu). Two large permanent Nisenan habitation sites have been identified and protected within the City's open space (in Maidu Park). Numerous smaller cultural resources, such as midden deposits and bedrock mortars, have also been recorded in the City. A majority of documented sites within the City are located in areas designated for open space uses.

Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?			X	

[1] Regional-serving retail is permitted within the City's Regional Commercial land use designation, and is defined by the General Plan as "major department and discount stores, automalls, hotels and motels, and commercial recreation or entertainment." The project does not include any of these uses, and moreover, the site is designated Community Commercial, not Regional Commercial.

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe.			X	

Thresholds of Significance and Regulatory Setting:

In addition to archeological resources, tribal cultural resources are also given particular treatment. Tribal cultural resources are defined in Public Resources Code Section 21074, as either 1) a site, feature, place, geographically-defined cultural landscape, sacred place, or object with cultural value to a California Native American Tribe, that is listed or eligible for listing on the California Register or Historical Resources, or on a local register of historical resources or as 2) a resource determined by the lead agency, supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code section 5024.1(c), and considering the significance of the resource to a California Native American Tribe.

Discussion of Checklist Answers:

a) The GPU EIR included historic and cultural resources study, which included research on whether any listed or eligible sites had been documented in the project area. No such sites were found. As discussed in the Cultural Resources section of this document, a mitigation measure designed to reduce impacts to any previously undiscovered resources has been included to ensure that impacts are less than significant (MM CUL-1). The measure requires an immediate cessation of work, and contact with the appropriate agencies to address the resource before work can resume. The project will not result in any new impacts beyond those already discussed and disclosed in the General Plan EIR; project-specific impacts are less than significant.

b) Notice of the proposed project was mailed to tribes which had requested such notice pursuant to AB 52. No requests for consultation were received. As discussed in item a, above, no resources are known to occur in the area. However, standard mitigation measures apply which are designed to reduce impacts to resources, should any be found on-site. The measure requires an immediate cessation of work, and contact with the appropriate agencies to address the resource before work can resume. The project will not result in any new impacts beyond those already discussed and disclosed in the General Plan EIR; project-specific impacts are less than significant.

XIX. Utilities and Service Systems

The project site is located within a developed area with the major utility infrastructure already installed. Existing sewer systems, stormwater treatment facilities, and water facilities are available to serve the project site.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves the project that it has adequate capacity to serve the project's projected demand in addition of the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to utilities and service systems is based directly on the CEQA Guidelines checklist items a–e listed above.

Discussion of Checklist Answers:

a) The project is consistent with the Specific Plan, and will be required to construct any utilities infrastructure necessary to serve the project, as well as pay fees which fund the operation of the facilities and the construction of major infrastructure. Minor additional infrastructure will be constructed within the project site to tie the project into the major systems, but these facilities will be constructed in locations where site development is already occurring as part of the overall project; there are no additional substantial impacts specific or particular to the minor infrastructure improvements.

b) The City of Roseville 2015 Urban Water Management Plan (UWMP), adopted May 2016, estimates water demand and supply for the City through the year 2040, based on existing land use designations and population projections. In addition, the Amoruso Ranch Water Supply Assessment (AR WSA, Appendix E of the Amoruso Ranch FEIR), dated May 2016, estimates water demand and supply for ultimate General Plan buildout. The project is consistent with existing land use designations, and is therefore consistent with the assumptions of the UWMP and AR WSA. The UWMP indicates that existing water supply sources are sufficient to meet all near term needs, estimating an annual water demand of 45,475 acre-feet per year (AFY) by the year 2020 and existing surface and recycled water supplies in the amount of 70,421 AFY. The AR WSA estimates a Citywide buildout demand of 64,370 AFY when including recycled water, and of 59,657 AFY of potable water. The AR WSA indicates that surface water supply is sufficient to meet demand during normal rainfall years, but is insufficient during single- and multiple-dry years. However, the City's UWMP establishes mandatory water conservation measures and the use of groundwater to offset reductions in surface water supplies. Both the UWMP and AR WSA indicate that these measures, in combination with additional purchased water sources, will ensure that supply meets projected demand. The project, which is consistent with existing land use designations, would not require new or expanded water supply entitlements.

c) The proposed project would be served by the Pleasant Grove Wastewater Treatment Plant (PGWWTP). The Central Valley Regional Water Quality Control Board (RWQCB) regulates water quality and quantity of effluent discharged from the City's wastewater treatment facilities. The Pleasant Grove WWTP has the capacity[7] to treat 12 million gallons per day (mgd) and is currently treating 8.0[8] mgd. The project is consistent with existing land use designations, which is how infrastructure capacity is planned. Therefore, the volume of wastewater generated by the proposed project could be accommodated by the facility; the proposed project will not contribute to an exceedance of applicable wastewater treatment requirements. The impact would be less than significant.

d, e) The Western Placer Waste Management Authority is the regional agency handling recycling and waste disposal for Roseville and surrounding areas. The regional waste facilities include a Material Recovery Facility (MRF) and the Western Regional Sanitary Landfill (WRSL). Currently, the WRSL is permitted to accept up to 1,900 tons of municipal solid waste per day. According to the solid waste analysis of the Amoruso Ranch Specific Plan FEIR, under current projected development conditions the WRSL has a projected lifespan extending through 2058. There is sufficient existing capacity to serve the proposed project. Though the project will contribute incrementally to an eventual need to find other means of waste disposal, this impact of City buildout has already been disclosed and mitigation applied as part of each Specific Plan the City has approved, including the most recent Amoruso Ranch Specific Plan. All residences and business in the City pay fees for solid waste collection, a portion of which is collected to fund eventual solid waste disposal expansion. The project will not result in any new impacts associated with major infrastructure. Environmental Utilities staff has reviewed the project for consistency with policies, codes, and regulations related to waste disposal and waste reduction regulations and policies and has found that the project design is in compliance.

[7] Waste Discharge Requirements/Monitoring & Reporting Program/NPDES Permit No. CA0079502, Adopted on 28 March 2014

[8] Todd Jordan, City of Roseville Environmental Utilities, Personal communication, June 9, 2021.

XX. Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to wildfire is based directly on the CEQA Guidelines checklist items a–d listed above. The California Department of Forestry and Fire Protection (CAL FIRE) is the state agency responsible for wildland fire protection and management. As part of that task, CAL FIRE maintains maps designating Wildland Fire Hazard Severity zones. The City is not located within a Very High Fire Hazard Severity Zone, and is not in a CAL FIRE responsibility area; fire suppression is entirely within local responsibility.

Discussion of Checklist Answers:

a–d) Checklist questions a–d above do not apply, because the project site is not within a Very High Fire Hazard Severity Zone and is not in a CAL FIRE responsibility area.

XXI. Mandatory Findings of Significance

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	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, substantially reduce the number or restrict the range of an endangered, threatened or rare species, or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts which 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.)			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Significance Criteria and Regulatory Setting:

The significance of impacts related to mandatory findings of significance is based directly on the CEQA Guidelines checklist items a–c listed above.

Discussion of Checklist Answers:

a–c) Long term environmental goals are not impacted by the proposed project. The cumulative impacts do not deviate beyond what was contemplated in the General Plan EIR, and mitigation measures have already been incorporated via the General Plan EIR. With implementation of the City's Mitigating Ordinances, Guidelines, and Standards and best management practices, mitigation measures described in this chapter, and permit conditions, the proposed project will not have a significant impact on the habitat of any plant or animal species. Based on the foregoing, the proposed project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of any wildlife species, or create adverse effects on human beings.

ENVIRONMENTAL DETERMINATION:

In reviewing the site specific information provided for this project and acting as Lead Agency, the City of Roseville, Development Services Department, Planning Division has analyzed the potential environmental impacts created by this project and determined that the impacts are less than significant. As demonstrated in the initial study checklist, there are no "project specific significant effects which are peculiar to the project or site" that cannot be reduced to less than significant effects through mitigation (CEQA Section 15183) and therefore an EIR ***is not*** *required. Therefore,* ***on the basis of the foregoing initial study:***

[**X**] I find that the proposed project COULD, but with mitigation agreed to by the applicant, clearly will not have a significant effect on the environment and a *MITIGATED NEGATIVE DECLARATION* has been prepared.

Initial Study Prepared by:

Charity Gold

Charity Gold, Associate Planner
City of Roseville, Development Services – Planning Division

Attachments:

1. CalEEMod Annual Calculation, July 16, 2020
2. Biological Resources Assessment, Helix May 2021
3. Traffic Analysis
4. Table of Applicable Mitigation Measures

Green Acres

Placer-Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Home Improvement Superstore	52.00	1000sqft	1.19	52,000.00	0
Other Non-Asphalt Surfaces	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2023
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	793.8	**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 -

Table Name	Column Name	Default Value	New Value

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.9532	40.5315	21.6391	0.0395	18.2141	2.0454	20.2595	9.9699	1.8818	11.8516	0.0000	3,827.8274	3,827.8274	1.1953	0.0000	3,857.7089
2022	28.5701	18.2769	18.2708	0.0387	0.6540	0.8172	1.4712	0.1773	0.7689	0.9462	0.0000	3,762.5852	3,762.5852	0.6529	0.0000	3,778.9064
Maximum	**28.5701**	**40.5315**	**21.6391**	**0.0395**	**18.2141**	**2.0454**	**20.2595**	**9.9699**	**1.8818**	**11.8516**	**0.0000**	**3,827.8274**	**3,827.8274**	**1.1953**	**0.0000**	**3,857.7089**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.9532	40.5315	21.6391	0.0395	18.2141	2.0454	20.2595	9.9699	1.8818	11.8516	0.0000	3,827.8274	3,827.8274	1.1953	0.0000	3,857.7089
2022	28.5701	18.2769	18.2708	0.0387	0.6540	0.8172	1.4712	0.1773	0.7689	0.9462	0.0000	3,762.5852	3,762.5852	0.6529	0.0000	3,778.9064
Maximum	**28.5701**	**40.5315**	**21.6391**	**0.0395**	**18.2141**	**2.0454**	**20.2595**	**9.9699**	**1.8818**	**11.8516**	**0.0000**	**3,827.8274**	**3,827.8274**	**1.1953**	**0.0000**	**3,857.7089**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2893	1.4000e-004	0.0155	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0333	0.0333	9.0000e-005		0.0355
Energy	0.0180	0.1634	0.1373	9.8000e-004		0.0124	0.0124		0.0124	0.0124		196.0999	196.0999	3.7600e-003	3.6000e-003	197.2652
Mobile	4.2100	21.0756	27.3532	0.1031	6.7376	0.0687	6.8064	1.8057	0.0642	1.8699		10,486.8656	10,486.8656	0.4496		10,498.1063
Total	**5.5173**	**21.2391**	**27.5060**	**0.1041**	**6.7376**	**0.0812**	**6.8188**	**1.8057**	**0.0767**	**1.8824**		**10,682.9988**	**10,682.9988**	**0.4535**	**3.6000e-003**	**10,695.4070**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2893	1.4000e-004	0.0155	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0333	0.0333	9.0000e-005		0.0355
Energy	0.0180	0.1634	0.1373	9.8000e-004		0.0124	0.0124		0.0124	0.0124		196.0999	196.0999	3.7600e-003	3.6000e-003	197.2652
Mobile	4.2100	21.0756	27.3532	0.1031	6.7376	0.0687	6.8064	1.8057	0.0642	1.8699		10,486.8656	10,486.8656	0.4496		10,498.1063
Total	**5.5173**	**21.2391**	**27.5060**	**0.1041**	**6.7376**	**0.0812**	**6.8188**	**1.8057**	**0.0767**	**1.8824**		**10,682.9988**	**10,682.9988**	**0.4535**	**3.6000e-003**	**10,695.4070**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/20/2021	5/26/2021	5	5	
2	Grading	Grading	5/27/2021	6/7/2021	5	8	
3	Building Construction	Building Construction	6/8/2021	4/25/2022	5	230	
4	Paving	Paving	4/26/2022	5/19/2022	5	18	
5	Architectural Coating	Architectural Coating	5/20/2022	6/14/2022	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 2.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 78,000; Non-Residential Outdoor: 26,000; Striped Parking Area: 6,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	1	8.00	158	0.38
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Building Construction	Welders	1	8.00	46	0.45

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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	59.00	25.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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
Worker	0.0650	0.0344	0.4849	1.4300e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		142.1705	142.1705	3.2400e-003		142.2516
Total	**0.0650**	**0.0344**	**0.4849**	**1.4300e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**142.1705**	**142.1705**	**3.2400e-003**		**142.2516**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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
Worker	0.0650	0.0344	0.4849	1.4300e-003	0.1479	9.1000e-004	0.1488	0.0392	8.4000e-004	0.0401		142.1705	142.1705	3.2400e-003		142.2516
Total	**0.0650**	**0.0344**	**0.4849**	**1.4300e-003**	**0.1479**	**9.1000e-004**	**0.1488**	**0.0392**	**8.4000e-004**	**0.0401**		**142.1705**	**142.1705**	**3.2400e-003**		**142.2516**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671		2,871.9285	2,871.9285	0.9288		2,895.1495
Total	**2.2903**	**24.7367**	**15.8575**	**0.0296**	**6.5523**	**1.1599**	**7.7123**	**3.3675**	**1.0671**	**4.4346**		**2,871.9285**	**2,871.9285**	**0.9288**		**2,895.1495**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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
Worker	0.0542	0.0287	0.4041	1.1900e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		118.4754	118.4754	2.7000e-003		118.5430
Total	**0.0542**	**0.0287**	**0.4041**	**1.1900e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**118.4754**	**118.4754**	**2.7000e-003**		**118.5430**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.2903	24.7367	15.8575	0.0296		1.1599	1.1599		1.0671	1.0671	0.0000	2,871.9285	2,871.9285	0.9288		2,895.1495
Total	**2.2903**	**24.7367**	**15.8575**	**0.0296**	**6.5523**	**1.1599**	**7.7123**	**3.3675**	**1.0671**	**4.4346**	**0.0000**	**2,871.9285**	**2,871.9285**	**0.9288**		**2,895.1495**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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
Worker	0.0542	0.0287	0.4041	1.1900e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		118.4754	118.4754	2.7000e-003		118.5430
Total	**0.0542**	**0.0287**	**0.4041**	**1.1900e-003**	**0.1232**	**7.6000e-004**	**0.1240**	**0.0327**	**7.0000e-004**	**0.0334**		**118.4754**	**118.4754**	**2.7000e-003**		**118.5430**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
Vendor	0.0751	2.6949	0.4718	7.3100e-003	0.1693	6.1100e-003	0.1754	0.0488	5.8500e-003	0.0546		765.5288	765.5288	0.0332		766.3582
Worker	0.2131	0.1129	1.5893	4.6800e-003	0.4847	3.0000e-003	0.4877	0.1286	2.7600e-003	0.1313		466.0034	466.0034	0.0106		466.2691
Total	**0.2882**	**2.8078**	**2.0611**	**0.0120**	**0.6540**	**9.1100e-003**	**0.6631**	**0.1773**	**8.6100e-003**	**0.1859**		**1,231.5322**	**1,231.5322**	**0.0438**		**1,232.6272**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
Vendor	0.0751	2.6949	0.4718	7.3100e-003	0.1693	6.1100e-003	0.1754	0.0488	5.8500e-003	0.0546		765.5288	765.5288	0.0332		766.3582
Worker	0.2131	0.1129	1.5893	4.6800e-003	0.4847	3.0000e-003	0.4877	0.1286	2.7600e-003	0.1313		466.0034	466.0034	0.0106		466.2691
Total	**0.2882**	**2.8078**	**2.0611**	**0.0120**	**0.6540**	**9.1100e-003**	**0.6631**	**0.1773**	**8.6100e-003**	**0.1859**		**1,231.5322**	**1,231.5322**	**0.0438**		**1,232.6272**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
Vendor	0.0699	2.5596	0.4382	7.2600e-003	0.1693	5.2200e-003	0.1745	0.0488	5.0000e-003	0.0537		759.3389	759.3389	0.0314		760.1226
Worker	0.1994	0.1016	1.4692	4.5000e-003	0.4847	2.9300e-003	0.4876	0.1286	2.7000e-003	0.1313		448.9127	448.9127	9.5600e-003		449.1516
Total	**0.2692**	**2.6612**	**1.9074**	**0.0118**	**0.6540**	**8.1500e-003**	**0.6621**	**0.1773**	**7.7000e-003**	**0.1850**		**1,208.2516**	**1,208.2516**	**0.0409**		**1,209.2742**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
Vendor	0.0699	2.5596	0.4382	7.2600e-003	0.1693	5.2200e-003	0.1745	0.0488	5.0000e-003	0.0537		759.3389	759.3389	0.0314		760.1226
Worker	0.1994	0.1016	1.4692	4.5000e-003	0.4847	2.9300e-003	0.4876	0.1286	2.7000e-003	0.1313		448.9127	448.9127	9.5600e-003		449.1516
Total	**0.2692**	**2.6612**	**1.9074**	**0.0118**	**0.6540**	**8.1500e-003**	**0.6621**	**0.1773**	**7.7000e-003**	**0.1850**		**1,208.2516**	**1,208.2516**	**0.0409**		**1,209.2742**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504		1,805.1297	1,805.1297	0.5672		1,819.3091
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9765**	**9.5221**	**12.1940**	**0.0189**		**0.4877**	**0.4877**		**0.4504**	**0.4504**		**1,805.1297**	**1,805.1297**	**0.5672**		**1,819.3091**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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
Worker	0.0676	0.0344	0.4980	1.5300e-003	0.1643	9.9000e-004	0.1653	0.0436	9.1000e-004	0.0445		152.1738	152.1738	3.2400e-003		152.2548
Total	**0.0676**	**0.0344**	**0.4980**	**1.5300e-003**	**0.1643**	**9.9000e-004**	**0.1653**	**0.0436**	**9.1000e-004**	**0.0445**		**152.1738**	**152.1738**	**3.2400e-003**		**152.2548**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504	0.0000	1,805.1297	1,805.1297	0.5672		1,819.3091
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9765**	**9.5221**	**12.1940**	**0.0189**		**0.4877**	**0.4877**		**0.4504**	**0.4504**	**0.0000**	**1,805.1297**	**1,805.1297**	**0.5672**		**1,819.3091**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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
Worker	0.0676	0.0344	0.4980	1.5300e-003	0.1643	9.9000e-004	0.1653	0.0436	9.1000e-004	0.0445		152.1738	152.1738	3.2400e-003		152.2548
Total	**0.0676**	**0.0344**	**0.4980**	**1.5300e-003**	**0.1643**	**9.9000e-004**	**0.1653**	**0.0436**	**9.1000e-004**	**0.0445**		**152.1738**	**152.1738**	**3.2400e-003**		**152.2548**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	28.3250					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**28.5295**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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
Worker	0.0406	0.0207	0.2988	9.2000e-004	0.0986	6.0000e-004	0.0992	0.0262	5.5000e-004	0.0267		91.3043	91.3043	1.9400e-003		91.3529
Total	**0.0406**	**0.0207**	**0.2988**	**9.2000e-004**	**0.0986**	**6.0000e-004**	**0.0992**	**0.0262**	**5.5000e-004**	**0.0267**		**91.3043**	**91.3043**	**1.9400e-003**		**91.3529**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	28.3250					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**28.5295**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
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
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
Worker	0.0406	0.0207	0.2988	9.2000e-004	0.0986	6.0000e-004	0.0992	0.0262	5.5000e-004	0.0267		91.3043	91.3043	1.9400e-003		91.3529
Total	**0.0406**	**0.0207**	**0.2988**	**9.2000e-004**	**0.0986**	**6.0000e-004**	**0.0992**	**0.0262**	**5.5000e-004**	**0.0267**		**91.3043**	**91.3043**	**1.9400e-003**		**91.3529**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.2100	21.0756	27.3532	0.1031	6.7376	0.0687	6.8064	1.8057	0.0642	1.8699		10,486.8656	10,486.8656	0.4496		10,498.1063
Unmitigated	4.2100	21.0756	27.3532	0.1031	6.7376	0.0687	6.8064	1.8057	0.0642	1.8699		10,486.8656	10,486.8656	0.4496		10,498.1063

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Home Improvement Superstore	1,598.48	2,949.44	2901.60	2,116,008	2,116,008
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,598.48	2,949.44	2,901.60	2,116,008	2,116,008

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Home Improvement Superstore	9.50	7.30	7.30	23.40	57.60	19.00	32	20	48
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Home Improvement Superstore	0.504187	0.038691	0.220388	0.121642	0.020356	0.005773	0.031759	0.047089	0.001411	0.001172	0.005719	0.000756	0.001058
Other Non-Asphalt Surfaces	0.504187	0.038691	0.220388	0.121642	0.020356	0.005773	0.031759	0.047089	0.001411	0.001172	0.005719	0.000756	0.001058

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0180	0.1634	0.1373	9.8000e-004		0.0124	0.0124		0.0124	0.0124		196.0999	196.0999	3.7600e-003	3.6000e-003	197.2652
NaturalGas Unmitigated	0.0180	0.1634	0.1373	9.8000e-004		0.0124	0.0124		0.0124	0.0124		196.0999	196.0999	3.7600e-003	3.6000e-003	197.2652

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Home Improvement Superstore	1666.85	0.0180	0.1634	0.1373	9.8000e-004		0.0124	0.0124		0.0124	0.0124		196.0999	196.0999	3.7600e-003	3.6000e-003	197.2652
Other Non-Asphalt Surfaces	0	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
Total		**0.0180**	**0.1634**	**0.1373**	**9.8000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**		**196.0999**	**196.0999**	**3.7600e-003**	**3.6000e-003**	**197.2652**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Home Improvement Superstore	1.66685	0.0180	0.1634	0.1373	9.8000e-004		0.0124	0.0124		0.0124	0.0124		196.0999	196.0999	3.7600e-003	3.6000e-003	197.2652
Other Non-Asphalt Surfaces	0	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
Total		**0.0180**	**0.1634**	**0.1373**	**9.8000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**		**196.0999**	**196.0999**	**3.7600e-003**	**3.6000e-003**	**197.2652**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2893	1.4000e-004	0.0155	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0333	0.0333	9.0000e-005		0.0355
Unmitigated	1.2893	1.4000e-004	0.0155	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0333	0.0333	9.0000e-005		0.0355

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1482					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4400e-003	1.4000e-004	0.0155	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0333	0.0333	9.0000e-005		0.0355
Total	**1.2893**	**1.4000e-004**	**0.0155**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0333**	**0.0333**	**9.0000e-005**		**0.0355**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1397					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1482					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4400e-003	1.4000e-004	0.0155	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0333	0.0333	9.0000e-005		0.0355
Total	**1.2893**	**1.4000e-004**	**0.0155**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0333**	**0.0333**	**9.0000e-005**		**0.0355**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 2

Green Acres-Roseville

Biological Resources Assessment

May 2021 | 04960.00001.001

Prepared for:

Green Acres Nursery and Supply
604 Sutter Street, Suite 350
Folsom, CA 95630

Prepared by:

HELIX Environmental Planning, Inc.
1677 Eureka Road, Suite 100
Roseville, CA 95661

Attachment 2

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ACRONYMS AND ABBREVIATIONS

BRA	Biological Resources Assessment
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CSA	California Special Animals
CWA	Clean Water Act
DBH	diameter at breast height
EPA	U.S. Environmental Protection Agency
FESA	Federal Endangered Species Act
HELIX	HELIX Environmental Planning, Inc.
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
MSL	mean sea level
NCCP	Natural Community Conservation Plan
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resource Conservation Service
NWPR	Navigable Waters Protection Rule
OHWM	ordinary high water mark
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SSC	Species of Special Concern
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WQC	Water Quality Certification

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EXECUTIVE SUMMARY

HELIX Environmental Planning, Inc. (HELIX) prepared a Biological Resources Assessment (BRA) for the Green Acres-Roseville Project (Study Area) located at 7300 Galilee Road, in the City of Roseville (City), Placer County, California. The site is situated in Section 21 of Township 11 North, Range 06 East, Mount Diablo Meridian, and is depicted on the U.S. Geological Survey (USGS) *Roseville*, CA 7.5-minute quadrangle. The approximate center of the Study Area is at latitude, 38.778163 and longitude -121.305996, NAD 83.

The purpose of this BRA is to assess the general biological resources present on the site, to assess the suitability of the site to support special-status species and sensitive vegetation communities or habitats, and to provide recommendations for any regulatory permitting or further analysis that may be required prior to development activities occurring on the site.

The 7.58-acre Study Area is located on undeveloped property and is comprised entirely of ruderal/disturbed habitat. Surrounding land uses include commercial development to the south and west including a DMV office, commercial development and a tilled field to the north, and residential development and a school to the east. The Study Area is located immediately to the southwest of the intersection of Galilee Road and Industrial Avenue.

Known or potential biological constraints in the Study Area include:

- Potential nesting and foraging habitat for special-status birds including grasshopper sparrow and northern harrier, as well as other nesting migratory birds and raptors.

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1.0 INTRODUCTION

This report summarizes the findings of a Biological Resources Assessment (BRA) completed by HELIX Environmental Planning, Inc. (HELIX) for the 7.58-acre Green Acres-Roseville Project (Project) located in the City of Roseville, Placer County, California (Appendix A, Figure 1). This document addresses the onsite physical features, plant communities present, and the common plant and wildlife species occurring or potentially occurring in the Study Area. In addition, the suitability of habitats to support special-status species and sensitive habitats are analyzed, and recommendations are provided for any regulatory permitting or further analysis that may be required prior to development activities occurring on the site.

2.0 DESCRIPTION OF THE PROPOSED PROJECT

2.1 PROJECT LOCATION

The approximately 7.58-acre Study Area is located in the City of Roseville, Placer County, California (Appendix A, Figure 1). Surrounding land uses include commercial development to the south and west, commercial development and a tilled field to the north, and residential development and a school to the east. The Study Area is located immediately southwest of the intersection of Galilee Road and Industrial Boulevard. The site is situated in Section 21 of Township 11 North, Range 06 East, Mount Diablo Meridian, and is depicted on the U.S. Geological Survey (USGS) *Roseville*, *CA* 7.5-minute USGS quadrangle (Appendix A, Figure 2). The approximate center of the Study Area is at latitude, 38.778163 and longitude -121.305996, NAD 83, and is located at an elevation between 135 to 150 feet above mean sea level (MSL).

2.2 EXISTING CONDITIONS

The Study Area is comprised of disturbed/ruderal habitat dominated by annual grasses and weedy non-native plant species. The Study Area appears to have been subject to periodic ground disturbance based on a review of Google Maps aerial photos. Figure 3 in Appendix A contains an aerial map of the Study Area.

2.3 PROJECT DESCRIPTION

The site is planned for development of a plant nursery. Development will include the construction of an indoor retail area, outside plant nursery displays, indoor and outdoor greenhouses, a parking lot, and associated landscaping and sidewalks.

3.0 REGULATORY FRAMEWORK

Federal, State, and local environmental laws, regulations, and policies relevant to the California Environmental Quality Act (CEQA) review process are summarized below. Applicable CEQA significance criteria are also addressed in this section.

3.1 FEDERAL REGULATIONS

3.1.1 Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) enforces the provisions stipulated within the Federal Endangered Species Act of 1973 (FESA; 16 USC 1531 et seq.). Species identified as federally threatened or endangered (50 CFR 17.11, and 17.12) are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed species may be present in the study area and determine whether the proposed project will jeopardize the continued existence of or result in the destruction or adverse modification of critical habitat of such species (16 USC 1536 (a)[3], [4]). Other federal agencies designate species of concern (species that have the potential to become listed), which are evaluated during environmental review under the National Environmental Protection Act (NEPA) or CEQA although they are not otherwise protected under FESA.

3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 established federal responsibilities for the protection of nearly all species of birds, their eggs, and nests. The Migratory Bird Treaty Reform Act of 2004 further defined species protected under the act and excluded all non-native species. Section 16 U.S.C. 703–712 of the Act states “unless and except as permitted by regulations, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill” a migratory bird. A migratory bird is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Currently, there are 836 migratory birds protected nationwide by the Migratory Bird Treaty Act, of which 58 are legal to hunt. The U.S. Court of Appeals for the 9th Circuit (with jurisdiction over California) has ruled that the MBTA does not prohibit incidental take (952 F 2d 297 – Court of Appeals, 9th Circuit 1991).

3.2 STATE JURISDICTION

3.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050 to 2097) is similar to the FESA. The California Fish and Wildlife Commission is responsible for maintaining lists of threatened and endangered species under CESA. CESA prohibits the take of listed and candidate (petitioned to be listed) species. “Take” under California law means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch capture, or kill (California Fish and Game Code, Section 86). The California Department of Fish and Wildlife (CDFW) can authorize take of a state-listed species under Section 2081 of the California Fish and Game Code if the take is incidental to an otherwise lawful activity, the impacts are minimized and fully mitigated, funding is ensured to implement and monitor mitigation measures, and CDFW determines that issuance would not jeopardize the continued existence of the species. A CESA permit must be obtained if a project will result in the “take” of listed species, either during construction or over the life of the project. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

3.2.2 California Code of Regulations Title 14 and California Fish and Game Code

The official listing of endangered and threatened animals and plants is contained in the California Code of Regulations Title 14 §670.5. A state candidate species is one that the California Fish and Game Code has formally noticed as being under review by CDFW to include in the state list pursuant to Sections 2074.2 and 2075.5 of the California Fish and Game Code.

Legal protection is also provided for wildlife species in California that are identified as "fully protected animals." These species are protected under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species at any time. CDFW is unable to authorize incidental take of fully protected species unless any such take authorization is issued in conjunction with the approval of a Natural Community Conservation Plan that covers the fully protected species (California Fish and Game Code Section 2835).

3.2.3 California Environmental Quality Act

Under the California Environmental Quality Act of 1970 (Public Resources Code Section 21000 et seq.), lead agencies analyze whether projects would have a substantial adverse effect on a candidate, sensitive, or special-status species (Public Resources Code Section 21001(c)). These "special-status" species generally include those listed under FESA and CESA, and species that are not currently protected by statute or regulation, but would be considered rare, threatened, or endangered under the criteria included CEQA Guidelines Section 15380. Therefore, species that are considered rare are addressed under CEQA regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity; plants ranked as 1A, 1B, 2A, 2B, and 3 are generally considered special-status species under CEQA.[1]

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (i.e., candidate species) would occur.

3.2.4 Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900-1913) empowers the Fish and Game Commission to list native plant species, subspecies, or varieties as endangered or rare following a public hearing. To the extent that the location of such plants is known, CDFW must notify property owners that a listed plant is known to occur on their property. Where a property owner has been so notified by CDFW, the owner must notify CDFW at least 10 days in advance of any change in land use (other than changing from one agricultural use to another), in order that

[1] The California Rare Plant Rank system can be found online at < http://www.cnps.org/cnps/rareplants/ranking.php>

CDFW may salvage listed plants that would otherwise be destroyed. Currently, 64 taxa of native plants have been listed as rare under the act.

3.2.5 Nesting Birds

California Fish and Game Code Subsections 3503 and 3800 prohibit the possession, take, or needless destruction of birds, their nests, and eggs, and the salvage of dead nongame birds. California Fish and Game Code Subsection 3503.5 protects all birds in the orders of Falconiformes and Strigiformes (birds of prey). Fish and Game Code Subsection 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act. The Attorney General of California has released an opinion that the Fish and Game Code prohibits incidental take.

3.3 JURISDICTIONAL WATERS

3.3.1 Federal Jurisdiction

Any person, firm, or agency planning to alter or work in “waters of the U.S.,” including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA; 33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from USACE (33 USC 403).

On April 21, 2020, the Environmental Protection Agency (EPA) and USACE published the Navigable Waters Protection Rule to define “Waters of the United States” in the Federal Register. On June 22, 2020, the Navigable Waters Protection Rule: Definition of “Waters of the United States” (NWPR) became effective in 49 states, including California, and in all US territories.

The NWPR regulates traditional navigable waters and perennial or intermittent tributary systems, and defines four categories of regulated waters including:

- The territorial seas and traditional navigable waters;
- Perennial and intermittent tributaries to those waters;
- Certain lakes, ponds, and impoundments; and
- Wetlands adjacent to jurisdictional waters.

The NWPR also defines 12 categories of exempted aquatic resources:

- Waters not listed as waters of the U.S.
- Groundwater
- Ephemeral features
- Diffuse stormwater run-off
- Ditches not identified as waters of the U.S.
- Prior converted cropland (PCC)
- Artificially irrigated areas
- Artificial lakes and ponds
- Water-filled depressions incidental to mining or construction activity

- Stormwater control features
- Groundwater recharge, water reuse, and wastewater recycling structures
- Waste treatment systems

With non-tidal waters, in the absence of adjacent wetlands, the extent of USACE jurisdiction extends to the ordinary high water mark (OHWM) – the line on the shore established by fluctuations of water and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Wetlands are defined in 33 CFR Part 328 as:

> *"those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."*

Federal and state regulations pertaining to waters of the U.S., including wetlands, are discussed below.

Clean Water Act (33 USC 1251-1376). The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters.

Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. must obtain a state certification that the discharge complies with other provisions of CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California and may require State Water Quality Certification before other permits are issued.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S.

Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S. (including wetlands). Implementing regulations by USACE are found at 33 CFR Parts 320-332. The Section 404 (b)(1) Guidelines were developed by the USEPA in conjunction with USACE (40 CFR Part 230), allowing the discharge of dredged or fill material for non-water dependent uses into special aquatic sites only if there is no practicable alternative that would have less adverse impacts.

Regional Water Quality Control Board

Any action requiring a CWA Section 404 permit, or a Rivers and Harbors Act Section 10 permit, must also obtain a CWA Section 401 Water Quality Certification. The State of California Water Quality Certification (WQC) Program was formally initiated by the State Water Resources Control Board (SWRCB) in 1990 under the requirements stipulated by Section 401 of the Federal CWA. Although the Clean Water Act is a Federal law, Section 401 of the CWA recognizes that states have the primary authority and responsibility for setting water quality standards. In California, under Section 401, the State and Regional Water Boards are the authorities that certify that issuance of a federal license or permit does not violate California's water quality standards (i.e., that they do not violate Porter-Cologne and the Water Code). The WQC Program currently issues the WQC for discharges requiring USACE's permits for fill and dredge discharges within Waters of the United States, and now also implements the State's wetland protection and hydromodification regulation program under the Porter Cologne Water Quality Control Act.

On April 2, 2019, the SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water

Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review, and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Office of Administrative Law approved the Procedures on August 28, 2019, and the Procedures became effective May 28, 2020.

Under the Procedures and the State Water Code (Water Code §13050(e)), "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Unless excluded by the Procedures, any activity that could result in discharge of dredged or fill material to Waters of the State, which includes Waters of the U.S. and non-federal Waters of the State, requires filing of an application under the Procedures.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California's statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, National Pollution Discharge Elimination System (NPDES) permits, Section 401 water quality certifications, or other approvals.

3.3.2 California Department of Fish and Wildlife

The CDFW is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of streambeds…except when the department has been notified pursuant to Section 1601." Additionally, CDFW asserts jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over four inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Generally, CDFW recommends submitting an application for a Streambed Alteration Agreement (SAA) for any work done within the lateral limit of water flow or the edge of riparian vegetation, whichever is greater.

3.4 CEQA SIGNIFICANCE

Section 15064.7 of the State CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study Checklist included in Appendix G of the State CEQA Guidelines. Appendix G provides

examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would:

- 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 CDFW or USFWS;
- 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 CDFW or USFWS;
- Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish or result in the loss of an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

3.4.1 California Native Plant Society

The CNPS maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California*. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS Rare Plant Ranking System:

Rank 1A: Plants presumed Extinct in California and either rare or extinct elsewhere

Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere

Rank 2A: Plants presumed extirpated in California but common elsewhere

Rank 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere

Rank 3: Plants about which we need more information – A Review List

Rank 4: Plants of limited distribution – A Watch List

All plants appearing on CNPS Rank 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA. Furthermore, the CNPS Rare Plant Rankings include levels of threat for each species. These threat ranks include the following:

0.1 - Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat);

0.2 - Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat); and

0.3 - Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

Threat ranks do not designate a change of environmental protections, so that each species (i.e., CRPR 1B.1, CRPR 1B.2, CRPR 1B.3, etc.) be fully considered during preparation of environmental documents under CEQA.

3.4.2 California Department of Fish and Wildlife Species of Concern

Additional fish, amphibian, reptile, bird, and mammal species may receive consideration by CDFW and lead agencies during the CEQA process, in addition to species that are formally listed under FESA and CESA or listed as fully protected. These species are included on the *Special Animals List*, which is maintained by CDFW. This list tracks species in California whose numbers, reproductive success, or habitat may be in decline. In addition to “Species of Special Concern” (SSC), the *Special Animals List* includes species that are tracked in the California Natural Diversity Database (CNDDB) but warrant no legal protection. These species are identified as “California Special Animals” (CSA).

3.5 LOCAL POLICIES AND REGULATIONS

3.5.1 City of Roseville General Plan

The *City of Roseville’s General Plan, Open Space and Conservation Element* outlines specific goals, policies, and implementation measures pertaining to the protection of vegetation and wildlife (City of Roseville 2004). The three primary goals are:

Goal 1: *Preserve, protect, and enhance a significant system of interconnected natural habitat areas, including creek and riparian corridors, oak woodlands, wetlands, and adjacent grassland areas.*

Goal 2: *Maintain healthy and well-managed habitat areas in conjunction with one-another, maximizing the potential for compatible open space, recreation, and visual experiences.*

Goal 3: *Protect special-status species and other species that are sensitive to human activities.*

3.5.2 City of Roseville Tree Ordinance

The City of Roseville regulates the removal of or impact to protected trees under Chapter 19.66 of the Roseville Municipal Code. Protected trees are defined as any native oak tree [valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), blue oak (*Quercus douglasii*)], or hybrid of these species, with a trunk diameter equal to or greater than six inches at breast height (DBH), which is at 54" above grade. No work that might impact the tree, including grading, trenching, or irrigation, is allowed within the protected zone of a protected tree, defined as the dripline radius plus one foot, without a Tree Permit. No permit is required for the removal of a protected tree under the following situations:

1. Trees damaged by thunderstorm, windstorm, flood, earthquake, fire, or other natural cause and determined by a peace officer, fire fighter, public utility official, civil defense official or city code enforcement officer, acting in his or her official capacity, to present a danger to persons or property. Upon discovery of a condition justifying removal, the officer or official making the determination shall immediately provide written notification of the condition and action taken to the Planning Director.

2. When removal is determined to be necessary by fire department personnel actively engaged in fighting a fire.

3. When compliance would interfere with activities of a public utility necessary to comply with applicable safety regulations and/or necessary to repair or avoid the interruptions of services provided by such a utility. Unless there is an imminent threat to the public health, safety or welfare, the Planning Director shall be notified prior to the removal by a public utility of a protected tree.

4. The Planning Director may allow removal of a protected tree which has been certified by an arborist to be a dead tree. An arborist-certified dead tree may be removed without any replacement or mitigation requirements.

5. A protected tree located on property developed with a single-family or two-family dwelling which has been granted occupancy.

6. When a protected living tree presents a hazard to health and safety or structures due to its structural condition and location, the tree may be removed without any replacement or mitigation requirements. The hazardous condition of the tree must be determined by an arborist. The Planning Director must review the arborist's determination and consider the location of the protected tree prior to approving removal.

4.0 METHODOLOGY

A biological evaluation of the Study Area was completed that consisted of a special-status species evaluation including a desktop review and database searches to identify known biological resources in the Study Area and vicinity as well as conducting a reconnaissance-level field inspection of the Study Area.

4.1 SPECIAL-STATUS SPECIES EVALUATION

For the purposes of this report, special-status species are those that fall into one or more of the following categories, including those:

- Listed as endangered or threatened under the FESA (including candidates and species proposed for listing);
- Listed as endangered or threatened under the CESA (including candidates and species proposed for listing);
- Designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- Designated an SSC by the CDFW;
- Considered by CDFW to be a Watch List species with potential to become an SSC;
- Defined as rare or endangered under Section 15380 of the CEQA; or
- Having a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, or 3.

In order to evaluate special-status species and/or their habitats with the potential to occur in the Study Area and/or be impacted by the proposed project, HELIX obtained lists of regionally occurring special-status species from the following information sources:

- California Department of Fish and Wildlife (CDFW). 2021. *California Natural Diversity Database* (CNDDB); For: *Roseville, Sheridan, Lincoln, Gold Hill, Rocklin, Pleasant Grove, Rio Linda, Citrus Heights,* and *Folsom* USGS 7.5-minute series quadrangles, Sacramento, CA. Accessed [April 29, 2021];
- California Native Plant Society (CNPS). 2021. *Inventory of Rare and Endangered Plants* (online edition, v8-03 0.39) For: *Roseville, Sheridan, Lincoln, Gold Hill, Rocklin, Pleasant Grove, Rio Linda, Citrus Heights,* and *Folsom* USGS 7.5-minute series quadrangles, Sacramento, CA. Accessed [April 29, 2021]; and,
- U.S. Fish and Wildlife Service (USFWS). 2021. *Information for Planning and Consultation* (IPaC) for *the Green Acres-Roseville Project.* Accessed [April 29, 2021].

Nine USGS 7.5-minute series quadrangles (*Roseville, Sheridan, Lincoln, Gold Hill, Rocklin, Pleasant Grove, Rio Linda, Citrus Heights,* and *Folsom*) were searched in the database query. Appendix B includes a list of plant and wildlife species obtained from that database query and Appendix C includes an evaluation of the potential for these species to occur in the Study Area based on habitats present and surrounding land uses.

HELIX also reviewed the following sources for published information on site conditions pertinent to biological resources:

- USGS. 2020. *Roseville, California*. 7.5-minute series topographic quadrangle. United States Department of Interior; and

- USDA, NRCS. 2021. *Web Soil Survey*. Available online at: http://websoilsurvey.sc.egov.usda.gov. Accessed [April 29, 2021].

4.2 BIOLOGICAL SURVEYS

Biological surveys at the site consisted of a biological reconnaissance survey conducted on April 30,2021.

4.2.1 Biological Reconnaissance Survey

The biological reconnaissance survey was conducted on April 30, 2021, by HELIX biologist David Bise. The weather during the field survey was clear with light winds and an average temperature of 65 degrees Fahrenheit. The Study Area was systematically surveyed on foot to ensure total search coverage, with special attention given to portions of the Study Area with the potential to support special-status species and sensitive habitats. Binoculars were used to further extend site coverage to adjacent parcels and identify species observed. All plant and animal species observed onsite during the site survey were recorded (Appendix D), and all biological communities occurring onsite were characterized. Following completion of the field survey, the potential for each species identified in the database query (Appendix B) to occur within the Study Area was determined based on the site survey findings, soils, habitats present within the Study Area, and species-specific information and habitat requirements as shown in Appendix C.

5.0 RESULTS

5.1 PHYSICAL FEATURES

5.1.1 Topography and Drainage

The topography of the Study Area is generally flat with an elevation range of approximately 135 to 150 feet above MSL. The Study Area is located within the Lower Sacramento watershed (USGS Hydrologic Unit Code (HUC 8) 18020109). The Study Area is currently disturbed and has undergone periodic disking and other ground disturbance as shown during a review of aerial photos available on Google Earth. The site supports a ruderal/disturbed vegetation community dominated by nonnative grasses and other nonnative herbaceous vegetation. No drainages or potential wetlands occurring in the Study Area. The Study Area appears to have previously had a ditch or canal constructed on the site in an upland area that has since been removed (see Section 5.3). The Study Area is comprised entirely of upland areas that are disturbed from past tilling and soil disturbance activities.

5.1.2 Soils

The Natural Resources Conservation Service (NRCS) has mapped one soil unit in the Study Area (Figure 4). The soil unit that occurs onsite includes **Cometa-Fiddyment Complex, 1 to 5 percent slopes**. General characteristics associated with this soil type are described below.

- **Cometa-Fiddyment Complex, 1 to 5 Percent Slopes**: This soil type occurs on low terraces between elevations of 75 and 200 feet above MSL. The main components of this complex consist of 35 percent Cometa and 35 percent Fiddyment soil. Cometa soil is a deep, well-drained claypan soil that formed in alluvium mainly from granitic sources. Permeability is very slow, and

available water capacity is very low. Fiddyment soil is a moderately deep, well-drained soil over a hardpan formed in old valley siltstone. Permeability is very slow, and the available water capacity is low. Inclusions within this soil unit consist of 10 percent San Joaquin sandy loam, 10 percent Kaseberg loam, 5 percent Ramona sandy loam on scattered narrow ridges, and 5 percent Alamo clay in some drainageways and basins. This soil unit is often used for winter grains and rice in level areas, and limited rangeland. Typically, vegetation on this soil unit consists mainly of non-native grasses and herbaceous plant species. The hydric soils list for Placer County identifies one hydric inclusion occurring within this soil type: Alamo, within depressions (NRCS 2015).

5.2 VEGETATION COMMUNITIES

Vegetation communities that occur within the Study Area are limited to ruderal/disturbed habitats throughout the Study Area (Appendix A, Figure 5). This habitat type is discussed below. All of the Study Area would be impacted by construction of the proposed project. A comprehensive list of all plant and wildlife species observed within the Study Area is provided in Appendix D. Representative site photographs are included in Appendix E.

5.2.1 Ruderal/Disturbed

Ruderal/disturbed habitat occurs in areas that are heavily disturbed by past or ongoing human activities but retain a soil substrate. Ruderal/disturbed areas may be sparsely to densely vegetated, but do not support a recognizable community or species assemblage. Vegetative cover is usually herbaceous and dominated by a wide variety of weedy non-native species or a few ruderal native species. A review of aerials photos over time show that the Study Area has been subject to periodic disturbance including mowing and ground disturbance.

Ruderal/disturbed habitat comprises the entire 7.58-acre Study Area (Appendix A, Figure 5). This habitat within the Study Area is heavily dominated by a dense cover of weedy, non-native annual grasses and forbs including wild oat (*Avena* sp.), ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), medusahead (*Taeniatherum caput-medusae*), vetch (*Vicia sativa),* fiddleneck (*Amsinckia* sp.), black mustard (Brassica nigra), yellow star-thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), and filaree (*Erodium botrys*).

5.3 AQUATIC RESOURCES

There are no aquatic resources present within the Study Area. Based on aerial photo review of the site, a ditch or canal was excavated in upland areas within the Study Area sometime around 2005. Photos around that time showed that the ditch/canal did periodically convey water. However, the ditch/canal appears to have been removed sometime around 2011. The area associated with the previous ditch/canal currently still has a culvert present. However, the culvert is perched above the current grade and does not appear able to convey water. Vegetation communities and soil samples were examined in the vicinity of where the ditch/canal used to occur to determine if signatures of wetlands or other aquatic resources were present. The area of the former ditch/canal is dominated by upland plant species similar to the rest of the Study Area and there is no evidence of hydric soils in this area, therefore, this area is not an aquatic resource. The National Wetland Inventory map does not show any aquatic resources occurring within the Study Area.

5.4 SPECIAL-STATUS SPECIES

A total of ten regionally occurring special-status plant species and 40 regionally occurring special-status wildlife species were identified during the database queries and desktop review as known to occur in the region surrounding the Study Area. The potential for these species to occur within the Study Area are evaluated in Appendix C. Species determined to have no potential to occur in the Study Area or be impacted by the proposed project are not discussed further in this report.

5.4.1 Listed and Special-Status Plants

According to the database query, ten listed and/or special-status plants have the potential to occur in the project region. There are no reported occurrences of special-status plant species on or immediately adjacent to the Study Area and the Study Area lacks suitable habitat for any of the regionally occurring special-status plant species. The site is disturbed and surrounded by development and does not provide habitat for any special-status plant species. Therefore, no impacts to special-status plant species are anticipated as a result of implementation of proposed project. See Appendix C for a more detailed discussion of habitat requirements of regionally occurring special-status plant species.

5.4.2 Listed and Special-Status Wildlife

According to the database queries, 40 listed and/or special-status wildlife species have the potential to occur in the project region. Based on field observations, published information, and literature review, grasshopper sparrow and northern harrier have some limited potential to occur within the Study Area. These species are discussed in more detail below. In addition to these special-status wildlife species, other migratory birds and raptors protected under federal, State, and local laws/policies also have potential to occur within the Study Area. The remaining 38 special-status wildlife species were determined to have no potential to utilize the Study Area or would only be expected to utilize the Study Area for periodic foraging or transit across the Study Area to more suitable habitat areas. Species that were determined to have no potential to occur in the Study Area or be impacted by the proposed project (see Appendix C) are not discussed further in this document.

5.4.2.1 Grasshopper Sparrow

Grasshopper sparrow is a state SSC. It breeds in grassland areas especially areas with tall grass and weeds and scattered shrubs. It also nests in overgrown pastures and hayfields, and sometimes in fields of other crops (Kaufmann 1996). It eats primarily insects and seeds. This species will sometimes nest in small colonies (Kaufmann 1996). It nests on the ground at the base of a weed or clump of grass. This species was not observed within the Study Area during the site inspection. The Study Area provides potentially suitable nesting and foraging habitat for this species. However, given the relatively disturbed nature of the Study Area and the degree of surrounding development, this species has a reduced potential to occur within the Study Area.

5.4.2.2 Northern Harrier

The northern harrier is a state SSC. It is a large gray or brown raptor species. The female is typically larger than the male. It is typically found in marshes, oak savannahs, wetlands, or grasslands. Northern harriers are usually year-round residents in California. Some individuals from other areas will over-winter in California (Zeiner et al. 1990). Nests are typically built on the ground or in low shrubs (Ehrlich

et al. 1988). Northern harriers typically feed on small mammals, reptiles, and insects (Shuford and Gardali, editors 2008). This species was not observed on the site during the field assessment but the Study Area contains marginal nesting and foraging habitat for this species. However, given the relatively disturbed nature of the Study Area and the degree of surrounding development, this species has a reduced potential to occur within the Study Area.

Nesting Migratory Birds and Raptors

The Study Area and immediate vicinity provides nesting and foraging habitat for a variety of nesting migratory birds that are acclimated to a disturbance regime. Although the Study Area does not contain trees, a variety of birds have the potential to nest in and adjacent to the site, in shrubs and on the ground in vegetation over the course of the avian breeding season. Avian species could also nest in trees adjacent to the Study Area associated with existing commercial development.

Project activities such as clearing and grubbing during the avian breeding season (generally February 1 through August 31) could result in injury or mortality of eggs and chicks directly through destruction during construction or indirectly through forced nest abandonment due to increased levels of noise and other human-caused disturbance. Needless destruction of nests, eggs, and chicks would be a violation of the Fish and Game Code and a potentially significant impact under the CEQA.

The recommended mitigation measures for nesting migratory birds and raptors in Section 6.1.1 would reduce potential impacts to nesting birds (including grasshopper sparrow and northern harrier) to less than significant.

5.5 SENSITIVE HABITATS

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code (i.e., riparian areas) and/or Sections 401 and 404 of the Clean Water Act, which include wetlands and other waters of the U.S. Additionally, sensitive habitats, including native trees and oak woodland habitat, are protected under the specific policies outlined in the City of Roseville Tree Ordinance. No sensitive habitats or protected trees are present within the Study Area.

5.5.1 Potential Waters of the U.S. and State

Aquatic resources that would qualify as potential waters of the U.S. and/or State are not present within the Study Area which consists entirely of a disturbed upland vegetation community.

No impacts to potential waters of the U.S. and/or State would occur as a result of the proposed project.

5.5.2 Wildlife Migration Corridors

Wildlife corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. This fragmentation of habitat can also occur when a portion of one or more habitats is converted into another habitat; for instance, when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or construction activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats thereby permitting depleted populations to be replenished and promoting

genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs.

There are no wildlife migration corridors within the Study Area. The Study Area is surrounded by developed areas and parcels subject to regular disturbance and human activity. Therefore, the project would not affect any wildlife migration corridors.

6.0 RECOMMENDED MITIGATION MEASURES

6.1 GENERAL MITIGATION MEASURES

6.1.1 Nesting Migratory Birds

If project activities such as vegetation removal, clearance, grubbing, or other ground disturbance were to commence during the avian breeding season (February 1 through August 31), a qualified biologist should conduct a pre-construction nesting bird survey no more than 14 days prior to initiation of project activities. The survey area should include suitable nesting habitat within the Study Area and within 500 feet of the project boundary (inaccessible areas outside of the Study Area can be surveyed from the site or from public roads using binoculars or spotting scopes). Pre-construction surveys are not required in areas where project activities have been continuous since prior to February 1, as determined by a qualified biologist. Areas that have been inactive for more than 14 days during the avian breeding season must be re-surveyed prior to resumption of project activities. If no active nests are identified a summary report should be preparing documenting the results of the survey and no further mitigation is required. If active nests are identified, the following measure should be implemented:

- A suitable buffer should be established around any active nest as determined by a qualified biologist depending on species and surrounding land uses. No construction activities should occur within the buffer until a qualified biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest, or the nest has failed). Limited encroachment into the buffer may occur at the discretion of a qualified biologist depending on type of activity and potential level of disturbance and sensitivity of the avian species in question. Any encroachment into the buffer should be monitored by a qualified biologist to determine whether nesting birds are being impacted.

7.0 REFERENCES

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Attachment 2

Appendix A

Figures

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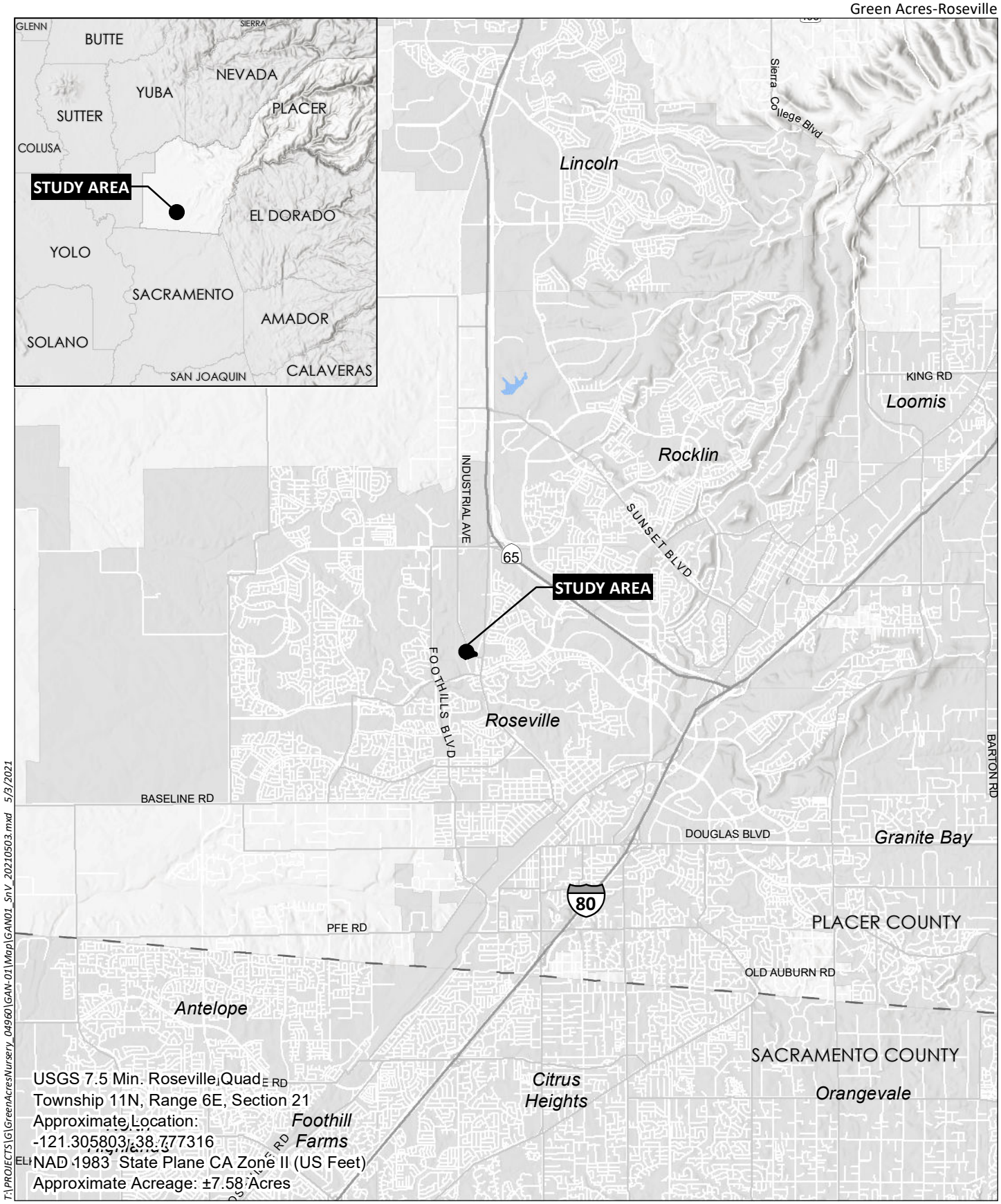
Attachment 2

Green Acres-Roseville



Source: Base Map Layers (Esri, USGS, NGA, NASA)

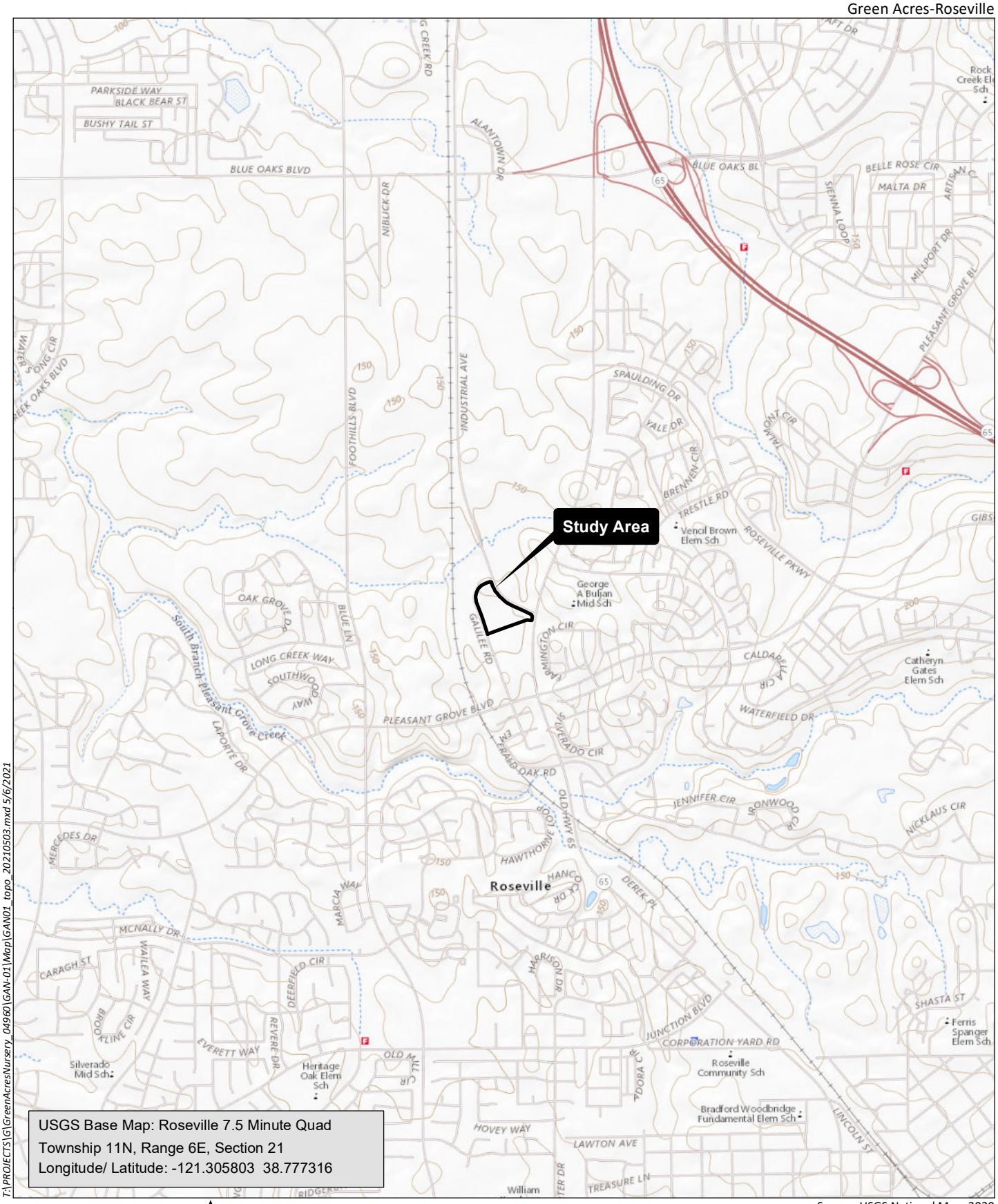
HELIX Environmental Planning

Vicinity Map

Figure 1

Attachment 2

Green Acres-Roseville



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Source: USGS National Map, 2020

HELIX Environmental Planning

Topographic Map

Figure 2

Attachment 2

Green Acres-Roseville

Source: Aerial (GoogleEarth 10/22/2020)

HELIX Environmental Planning

Aerial Map

Figure 3

Attachment 2

Green Acres-Roseville

Source: NRCS, 2021; Aerial (GoogleEarth 10/22/2020)

HELIX Environmental Planning

Soils Map

Figure 4

Attachment 2

Green Acres-Roseville

0 125 Feet

Source: Aerial (GoogleEarth 10/22/2020)

HELIX Environmental Planning

Biological Communities Map

Figure 5

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Attachment 2

Appendix B

Database Query Results

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Attachment 2

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE RareFind

Query Summary:
Quad IS (Roseville (3812173) OR Sheridan (3812184) OR Lincoln (3812183) OR Gold Hill (3812182) OR Rocklin (3812172) OR Pleasant Grove (3812174) OR Rio Linda (3812164) OR Citrus Heights (3812163) OR Folsom (3812162))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Accipiter cooperii	Cooper's hawk	Birds	ABNKC12040	118	1	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Cismontane woodland, Riparian forest, Riparian woodland, Upper montane coniferous forest
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	955	26	None	Threatened	G1G2	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Alkali Meadow	Alkali Meadow	Herbaceous	CTT45310CA	8	1	None	None	G3	S2.1	null	null	Meadow & seep, Wetland
Alkali Seep	Alkali Seep	Herbaceous	CTT45320CA	10	1	None	None	G3	S2.1	null	null	Meadow & seep, Wetland
Ammodramus savannarum	grasshopper sparrow	Birds	ABPBXA0020	27	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Valley & foothill grassland
Andrena subapasta	An andrenid bee	Insects	IIHYM35210	5	2	None	None	G1G2	S1S2	null	null	null
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	2	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Ardea alba	great egret	Birds	ABNGA04040	43	4	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	156	9	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	2011	13	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland

											of Conservation Concern	
Balsamorhiza macrolepis	big-scale balsamroot	Dicots	PDAST11061	51	2	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Branchinecta conservatio	Conservancy fairy shrimp	Crustaceans	ICBRA03010	47	1	Endangered	None	G2	S2	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	ICBRA03030	791	80	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland, Vernal pool, Wetland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2535	28	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
Chloropyron molle ssp. hispidum	hispid salty bird's-beak	Dicots	PDSCR0J0D1	35	1	None	None	G2T1	S1	1B.1	null	Alkali playa, Meadow & seep, Wetland
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Dicots	PDONA05053	89	3	None	None	G4G5T4	S4	4.2	SB_UCSC-UC Santa Cruz	Chaparral, Cismontane woodland, Lower montane coniferous forest
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	165	1	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Sensitive, NABCI_RWL-Red Watch List, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Riparian forest
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	1	None	None	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Broadleaved upland forest, Chaparral, Chenopod scrub, Great Basin grassland, Great Basin scrub, Joshua tree woodland, Lower montane coniferous forest, Meadow & seep, Mojavean desert scrub, Riparian forest, Riparian woodland, Sonoran desert scrub, Sonoran thorn woodland, Upper montane coniferous forest, Valley & foothill grassland
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	20	Threatened	None	G3T2	S3	null	null	Riparian scrub
Downingia pusilla	dwarf downingia	Dicots	PDCAM060C0	132	29	None	None	GU	S2	2B.2	null	Valley & foothill grassland, Vernal pool, Wetland
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	180	16	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1398	8	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Falco columbarius	merlin	Birds	ABNKD06030	37	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Estuary, Great Basin grassland, Valley & foothill grassland
Fritillaria agrestis	stinkbells	Monocots	PMLIL0V010	32	4	None	None	G3	S3	4.2	null	Chaparral, Cismontane woodland, Pinon & juniper woodlands, Ultramafic, Valley & foothill grassland
Gonidea angulata	western ridged	Mollusks	IMBIV19010	157	1	None	None	G3	S1S2	null	null	Aquatic

	mussel											
Gratiola heterosepala	Boggs Lake hedge-hyssop	Dicots	PDSCR0R060	99	5	None	Endangered	G2	S2	1B.2	BLM_S-Sensitive	Freshwater marsh, Marsh & swamp, Vernal pool, Wetland
Hydrochara ricksseckeri	Ricksecker's water scavenger beetle	Insects	IICOL5V010	13	1	None	None	G2?	S2?	null	null	Aquatic, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Monocots	PMJUN011L1	13	1	None	None	G2T1	S1	1B.2	null	Valley & foothill grassland
Juncus leiospermus var. leiospermus	Red Bluff dwarf rush	Monocots	PMJUN011L2	62	1	None	None	G2T2	S2	1B.1	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	2	None	None	G3G4	S3S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Lower montane coniferous forest, Oldgrowth, Riparian forest
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	303	3	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Legenere limosa	legenere	Dicots	PDCAM0C010	83	6	None	None	G2	S2	1B.1	BLM_S-Sensitive, SB_UCBG-UC Botanical Garden at Berkeley	Vernal pool, Wetland
Lepidurus packardi	vernal pool tadpole shrimp	Crustaceans	ICBRA10010	324	7	Endangered	None	G4	S3S4	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
Linderiella occidentalis	California linderiella	Crustaceans	ICBRA06010	508	59	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened	Vernal pool
Melospiza melodia	song sparrow ("Modesto" population)	Birds	ABPBXA3010	92	2	None	None	G5	S3?	null	CDFW_SSC-Species of Special Concern	null
Navarretia myersii ssp. myersii	pincushion navarretia	Dicots	PDPLM0C0X1	16	2	None	None	G2T2	S2	1B.1	null	Vernal pool, Wetland
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	Herbaceous	CTT44120CA	21	1	None	None	G1	S1.1	null	null	Vernal pool, Wetland
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	Herbaceous	CTT44110CA	126	9	None	None	G3	S3.1	null	null	Vernal pool, Wetland
Northern Volcanic Mud Flow Vernal Pool	Northern Volcanic Mud Flow Vernal Pool	Herbaceous	CTT44132CA	7	5	None	None	G1	S1.1	null	null	Vernal pool, Wetland
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	3	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Orcuttia viscida	Sacramento Orcutt grass	Monocots	PMPOA4G070	12	3	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho	Vernal pool, Wetland

											Santa Ana Botanic Garden	
Pandion haliaetus	osprey	Birds	ABNKC01010	504	1	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest
Phalacrocorax auritus	double-crested cormorant	Birds	ABNFD01020	39	1	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Progne subis	purple martin	Birds	ABPAU01010	71	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Broadleaved upland forest, Lower montane coniferous forest
Riparia riparia	bank swallow	Birds	ABPAU08010	298	2	None	Threatened	G5	S2	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Riparian scrub, Riparian woodland
Sagittaria sanfordii	Sanford's arrowhead	Monocots	PMALI040Q0	126	5	None	None	G3	S3	1B.2	BLM_S-Sensitive	Marsh & swamp, Wetland
Spea hammondii	western spadefoot	Amphibians	AAABF02020	1409	13	None	None	G2G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Taxidea taxus	American badger	Mammals	AMAJF04010	594	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, Ione formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Thamnophis gigas	giant gartersnake	Reptiles	ARADB36150	366	4	Threatened	Threatened	G2	S2	null	IUCN_VU-Vulnerable	Marsh & swamp, Riparian scrub, Wetland
Valley Needlegrass Grassland	Valley Needlegrass Grassland	Herbaceous	CTT42110CA	45	1	None	None	G3	S3.1	null	null	Valley & foothill grassland

Attachment 2

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

14 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1B, 2A, 2B, 3, 4],
FESA is one of [Endangered, Threatened, Candidate, Not Listed],
CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in Quads 3812184, 3812183, 3812182, 3812174, 3812173, 3812172, 3812164 3812163 and 3812162;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2	S3	G5T3
Chloropyron molle ssp. hispidum	hispid bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	1B.1	S1	G2T1
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Onagraceae	annual herb	May-Jul	4.2	S4	G4G5T4
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Juncus leiospermus var. leiospermus	Red Bluff dwarf rush	Juncaceae	annual herb	Mar-Jun	1B.1	S2	G2T2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	annual herb	Apr-May	1B.1	S2	G2T2
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	1B.1	S1	G1
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3

Attachment 2

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IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Placer County, California

NOT FOR CONSULTATION

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

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Attachment 2

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

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THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Burrowing Owl *Athene cunicularia* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher *Toxostoma redivivum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Common Yellowthroat *Geothlypis trichas sinuosa* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31

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Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

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Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Willet Tringa semipalmata — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

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1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

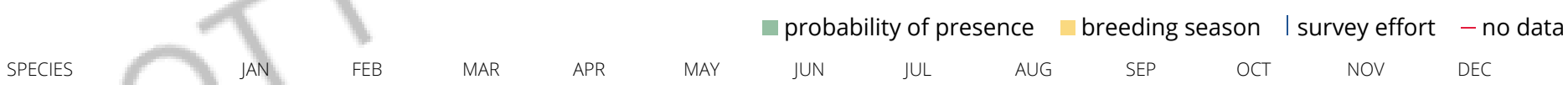
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

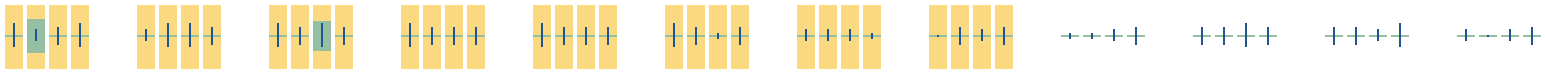
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



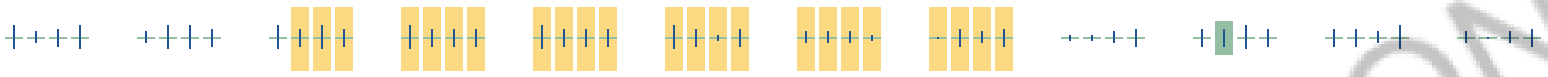
NOT FOR CONSULTATION

Attachment 2

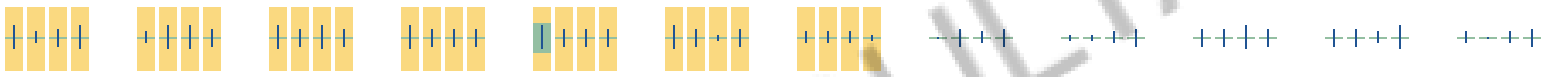
Bald Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



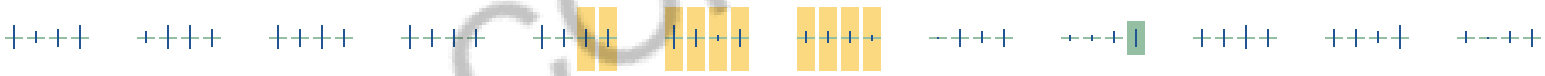
Burrowing Owl BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



California Thrasher BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

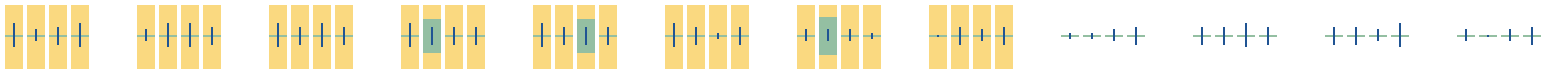


Common Yellowthroat BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

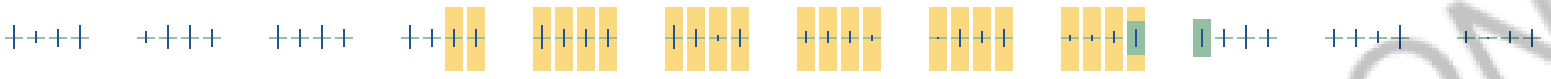


NOT FOR CONSULTATION

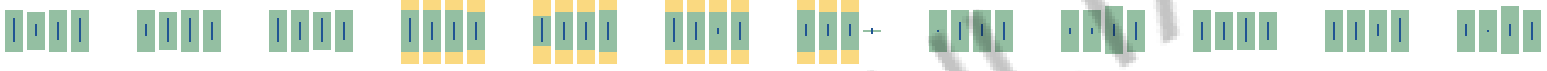
Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



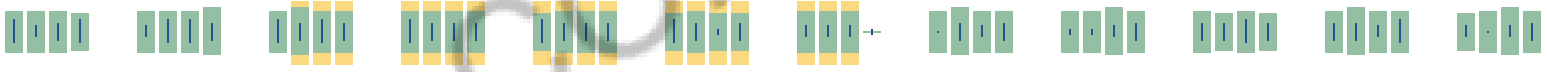
Lewis's Woodpecker BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Nuttall's Woodpecker BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Oak Titmouse BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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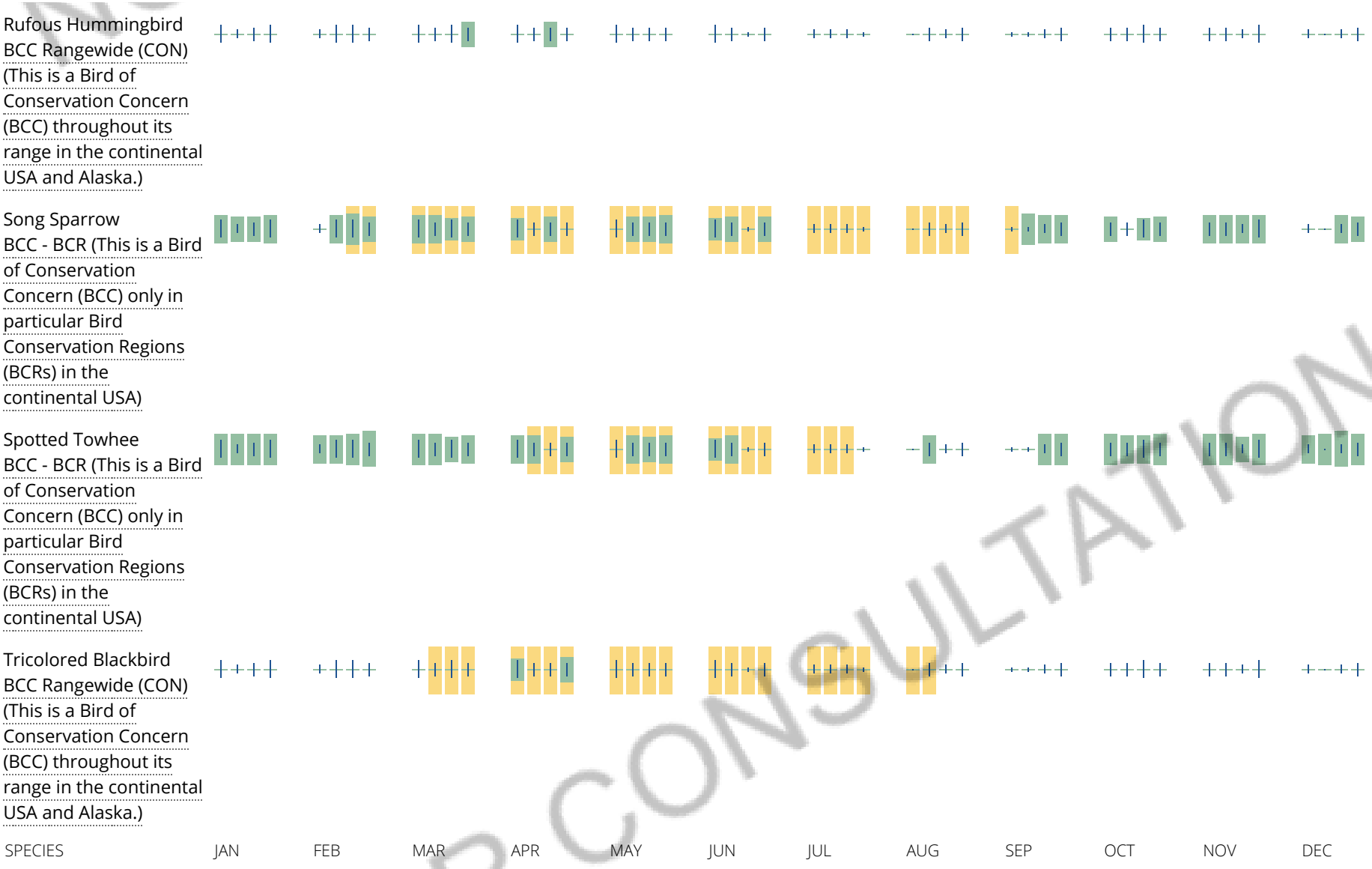
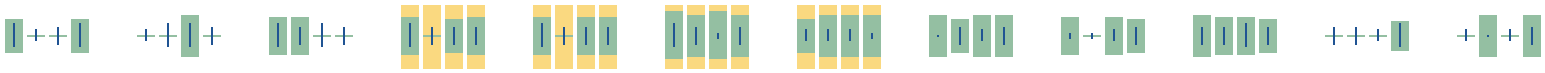
Attachment 2



NOT FOR CONSULTATION

Yellow-billed Magpie BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

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How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

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Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

NOT FOR CONSULTATION

Attachment 2

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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Attachment 2

Appendix C

Special-Status Species With Potential to Occur in the Study Area

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Appendix C
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Plants			
Gratiola heterosepala Boggs Lake hedge-hyssop	SE; CRPR 1B	Annual herb found on clay soils in marshes, swamps (lake margins), and vernal pools from 10 to 2375 meters. Known from approximately 96 occurrences in Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, Sonoma, and Tehama counties in California and in Oregon. Blooms from April-August.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.
Orcuttia viscida Sacramento Orcutt grass	FE; CE; CRPR 1B	Annual herb found in vernal pools from 30 to 100 meters. Known from 12 occurrences in Sacramento County. Blooms from April-July (September).	**Will Not Occur**. Study Area does not contain suitable habitat for this species.
Juncus leiospermus var. ahartii Ahart's dwarf rush	CRPR 1B	Annual herb found in mesic areas in valley and foothill grassland from 30 to 229 meters. Known from approximately 13 occurrences in Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba counties. Blooms from March-May.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.
Balsamorhiza macrolepis Big scale balsamroot	CRPR 1B	Perennial herb found in chaparral, cismontane woodland, valley and foothill grassland, sometimes on serpentinite, from 45 to 1,555 meters. Known from approximately 50 occurrences in Alameda, Amador, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Shasta, Solano, Sonoma, Tehama, and Tuolumne counties. Blooms from March-June.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.
Downingia pusilla Dwarf downingia	CRPR 2B	Found in mesic valley and foothill grassland and vernal pools, and roadside ditches from 1 to 445 meters. Known from approximately 126 occurrences in Amador, Fresno, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties. Blooms from March-May.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.

Appendix C (cont.)
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Chloropyron molle ssp. *hispidum* Hispid salty bird's-beak	CRPR 1B	Annual herb found on alkaline soil in meadows and seeps, playas, and valley and foothill grassland from 1 to 155 meters. Known from 35 occurrences in Alameda, Fresno, Kern, Merced, Placer, and Solano counties. Blooms from June-September.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.
Leg*enere limosa* Legenere	CRPR 1B	Annual herb found in vernal pools from 1 to 880 meters. Known from 78 occurrences in many counties. Blooms from April-June.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.
Navarretia myersii ssp. *myersii* Pincushion navarretia	CRPR 1B	Annual herb found in vernal pools from 20 to 330 meters. Known from 14 occurrences in Amador, Calavera, Merced, Placer, and Sacramento counties. Blooms from April-May.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.
Juncus leiospermus var. *leiospermus* Red Bluff dwarf rush	CRPR 1B	Annual herb found on vernally mesic sites in chaparral, cismontane woodland, meadows, seeps, vernal pools, and valley and foothill grassland from 35 to 1,250 meters. Known from approximately 62 occurrences in Butte, Placer, Shasta, and Tehama counties. Blooms from March-June.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.
Sagittaria sanfordii Sanford's arrowhead	CRPR 1B	Perennial rhizomatous emergent herb found in marshes and swamps and in assorted shallow freshwater areas (such as ditches and ponds) from 0 to 650 meters. Known from approximately 108 occurrences in many counties. Extirpated from Southern California, and mostly extirpated from the Central Valley. Blooms from May-October.	**Will Not Occur**. Study Area does not contain suitable habitat for this species.

Appendix C (cont.)
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Animals			
Invertebrates			
Branchinecta conservatio Conservancy fairy shrimp	FE	Freshwater fairy shrimp found in large, clay-bottomed vernal pool playas, usually with turbid water.	**Will Not Occur**. Study Area does not contain suitable vernal pool habitat for this species.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT	Found among elderberry shrubs within riparian habitats. Presence can be indicated by bore-holes in stems of elderberries.	**Will Not Occur**. Study Area does not contain elderberry shrubs required for this species to complete its lifecycle.
Branchinecta lynchi Vernal pool fairy shrimp	FT	Freshwater fairy shrimp found in vernal pools and other ephemeral wetlands.	**Will Not Occur**. Study Area does not contain suitable vernal pool habitat for this species.
Lepidurus packardi Vernal pool tadpole shrimp	FE	Freshwater fairy shrimp found in vernal pools and other ephemeral wetlands.	**Will Not Occur**. Study Area does not contain suitable vernal pool habitat for this species.
Andrena subapasta An andrenid bee	SSA	Ground-nesting solitary bee found in grasslands near vernal pools.	**Will Not Occur**. Study Area does not contain suitable vernal pool habitat for this species.
Andrena blennospermatis Blennosperma vernal pool andrenid bee	SSA	Ground-nesting solitary bee found in grasslands near vernal pools.	**Will Not Occur**. Study Area does not contain suitable vernal pool habitat for this species.
Linderiella occidentalis California linderiella	SSA	Freshwater fairy shrimp found in vernal pools and other ephemeral wetlands.	**Will Not Occur**. Study Area does not contain suitable vernal pool or other ephemeral wetland habitat for this species.
*Hydrochara ricksecker*i Ricksecker's water scavenger beetle	SSA	Aquatic beetle found in freshwater ponds and streams.	**Will Not Occur**. Study Area does not contain suitable aquatic habitat for this species.

Appendix C (cont.)
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Fishes			
Oncorhynchus tshawytscha Chinook salmon - Central Valley spring-run ESU	FT; ST	Found at sea and in riverine pools and channels typically in streams with gravel bottoms suitable for spawning.	**Will Not Occur**. Study Area does not contain suitable aquatic habitat for this species.
Hypome*sus transpacificus* Delta smelt	FE; SE	Found in open waters of bays, tidal rivers, channels, and sloughs.	**Will Not Occur**. Study Area does not contain suitable aquatic habitat for this species.
Oncorhyn*chus mykiss irideus* Steelhead - Central Valley DPS	FT	Found in the ocean, rivers and creeks, and large inland lakes.	**Will Not Occur**. Study Area does not contain suitable aquatic habitat for this species.
Amphibians			
Rana draytonii California red-legged frog	FT; SSC	Found near quiet, permanent pools of streams, marshes, and ponds with extensive vegetation below 1200 meters, though individuals may disperse considerable distances between pools during rain events. Breeds in permanent pools from January through July.	**Will Not Occur**. Study Area does not contain suitable aquatic habitat for this species and this species is generally considered to be extirpated from the Central Valley.
Spea hammondii Western spadefoot	SSC	Found usually in grasslands, occasionally in valley-foothill woodlands, up to 1,350 meters, remaining in underground burrows for most of the year. Breeding occurs in shallow temporary pools formed by winter rains.	**Will Not Occur**. Study Area does not contain suitable aquatic habitat for this species and surrounding upland is generally disturbed and/or developed.
Reptiles			
Thamnophis gigas Giant garter snake	FT; ST	Found in slow-moving aquatic environments with emergent vegetation such as marshes, sloughs, creeks, and agricultural ditches.	**Will Not Occur**. Study Area does not contain suitable aquatic habitat for this species and surrounding upland is generally disturbed and/or developed.
Phrynosoma blainvillii Coast horned lizard	SSC	Found in open, sandy areas of valley-foothill woodland and grassland habitats up to 1800 meters. Feeds primarily on ants.	**Will Not Occur**. Study Area does not contain suitable habitats or sandy soils and area is generally developed or disturbed.

Appendix C (cont.)
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Emys marmorata Western pond turtle	SSC	Found usually in grasslands, occasionally in valley-foothill woodlands, up to 1350 meters, remaining in underground burrows for most of the year. Breeding occurs in shallow temporary pools formed by winter rains.	**Will Not Occur**. Study Area does not contain suitable aquatic habitats for this species and upland areas are generally developed or disturbed.
Birds			
Riparia riparia Bank swallow	ST (nesting colonies)	Found primarily over open riparian areas, but also over grassland, brushland, wetlands, and cropland. Nests near water in colonies of tunnels dug into sandy banks or cliffs.	**Will Not Occur**. Study Area does not contain suitable riparian or nesting habitats for this species and upland areas are generally developed or disturbed.
Laterallus jamaicensis coturniculus California black rail	ST	Found within upper zones of saline, brackish, and freshwater emergent wetlands. Nest in dense vegetation at or slightly above ground level.	**Will Not Occur**. Study Area does not contain suitable habitat to support this species.
Agelaius tricolor Tricolored blackbird	SE	Found near fresh water, usually in emergent wetland with tall, dense cattails or tule, but also in thickets of willow, blackberry, wild rose, and tall herbs. Nests in colonies in dense cattails, tule, or similar vegetation within a few feet of fresh water.	**Not Expected.** Study Area does not contain suitable breeding habitat for this species. Species could potentially forage within the Study Area occasionally.
Buteo swainsonii Swainson's hawk	ST	Found in open desert, grassland, or cropland containing scattered, large trees or small groves. Nests in a tree, bush, or utility pole up to 100 feet above ground.	**Not Expected.** Study Area does not contain suitable breeding habitat for this species. Species could potentially forage within the Study Area occasionally.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT; SE	Found in extensive deciduous riparian thickets or forest along slow-moving watercourses dominated by willow. Nests in dense cover on horizontal limbs up to 25 feet above the ground.	**Will Not Occur**. Study Area does not contain suitable habitat to support this species.

Appendix C (cont.)
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Elanus leucurus White-tailed kite	SFP	Found in herbaceous lowlands with variable tree growth and a dense vole population. Nests near open areas near the top of dense tree stand from 20 to 100 feet above the ground.	**Not Expected.** Study Area does not contain suitable breeding habitat for this species. Species could potentially forage within the Study Area occasionally.
Nycticorax nycticorax Black-crowned night heron	SSA (nesting colonies)	Found in fresh and saline emergent wetlands, feeding nocturnally. Nests in colonies in dense trees or shrubs near feeding areas.	**Will Not Occur**. Study Area does not contain suitable habitat to support this species.
Athene cunicularia Burrowing owl	SSC	Found in dry, open grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats up to 1600 meters. Nests in old burrows of ground squirrel or other small mammals.	**Not Expected.** Study Area does not contain suitable burrows or ground squirrel colonies to support nesting. Species could potentially forage within the Study Area occasionally.
Accipiter cooperii Cooper's hawk	SSA (nesting)	Found in stands of live oak, riparian deciduous, and other forest habitats, most frequently near water. Nests in trees up to 80 feet above the ground.	**Not Expected.** Study Area does not contain suitable breeding habitat for this species. Species could potentially forage within the Study Area occasionally.
Phalacrocorax auratus Double-crested cormorant	SSA (nesting colonies)	Found on inland lakes and in fresh, salt, and estuarine waters. Nests on ledges and cliffs, rugged slopes, and live and dead trees at undisturbed sites near water.	**Will Not Occur**. Study Area does not contain suitable habitat to support this species.
Ammodramus savannarum Grasshopper sparrow	SSC (nesting)	Found in dense, dry, or well-drained grassland with scattered shrubs for perches. Nests in a slight depression in ground hidden at the base of an overhanging clump of vegetation.	**May Occur.** Study Area has marginal nesting habitat for this species, but level of ongoing disturbance and development within the Study Area and immediate vicinity lowers the potential for this species to utilize the Study Area.

Appendix C (cont.)
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Ardea herodias Great blue heron	SSA (nesting colonies)	Found in shallow estuaries and fresh and saline emergent wetlands, and less often in marine shores, croplands, pastures, and mountains above foothills. Nests in colonies in tops of secluded snags or live trees, and less often on the ground, rock ledges, sea cliffs, mats of tule, and shrubs.	**Not Expected.** Study Area does not contain suitable breeding habitat for this species. Species could potentially forage within the Study Area occasionally.
Ardea alba Great egret	SSA (nesting colonies)	Found in fresh and saline emergent wetlands, along the margins of estuaries, lakes, and slow-moving streams, on mudflats and salt ponds, and in irrigated croplands and pastures. Nests in colonies in large tree, usually near water.	**Not Expected.** Study Area does not contain suitable breeding habitat for this species. Species could potentially forage within the Study Area occasionally.
Asio otus Long-eared owl	SSC (nesting)	Found in dense riparian and live oak thickets near meadow edges and nearby woodland and forest habitats, and occasionally in dense conifer stands at higher elevations. Nests in old crow, magpie, hawk, heron, and squirrel nests in a variety of trees with dense canopy up to 50 feet above ground.	**Will Not Occur**. Study Area does not contain suitable habitat to support this species.
Falco columbarius Merlin	SSA (wintering)	Found in open habitats such as coastlines, lakeshores, and wetlands near water and tree stands below 1500 meters. Does not breed in California.	**Not Expected.** Species could potentially forage within the Study Area occasionally in winter months, but habitat is marginal for this species.
Circus cyaneus Northern harrier	SSC	Found in flat, open areas of tall, dense grasses, shrubs, and edges of denser vegetation as a high as 3,000 meters. Nests on ground in shrubby vegetation, usually at marsh edge.	**May Occur.** Study Area has marginal nesting habitat for this species, but level of ongoing disturbance and development within the Study Area and immediate vicinity lowers the potential for this species to utilize the Study Area.

Appendix C (cont.)
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Progne subis Purple martin	SSC (nesting)	Found in old-growth, multi-layered, open forest, woodland, and riparian areas. Nests in old woodpecker cavities in tall, old, isolated tree or snag.	**Will Not Occur**. Study Area does not contain suitable habitat to support this species.
Accipiter striatus Sharp-shinned hawk	SSA (nesting)	Found usually in riparian areas of a variety of wooded habitats including. Nests in dense stands of small-tree conifer within 90 meters of water.	**Not Expected.** Study Area does not contain suitable breeding habitat for this species. Species could potentially forage within the Study Area occasionally.
Melospiza melodia Song sparrow ("Modesto" population)	SSC	Found in dense riparian thickets, emergent wetland, and dense shrubland in other moist situations, possibly with a tree overstory. Nests on ground or in dense vegetation up to 4 feet above the ground.	**Will Not Occur**. Study Area does not contain suitable habitat to support this species.
Mammals			
Taxidea taxus American badger	SSC	Found in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Dens in dry, sandy soils, usually in areas with sparse overstory cover.	**Will Not Occur**. Study Area does not contain suitable habitat to support this species.
Antrozous pallidus Pallid bat	SSC	Found in grasslands, shrublands, woodlands, and forest from sea level up through mixed conifer forest. Roosts in colonies usually in rock crevices, as well as caves, mines, hollow trees, and buildings.	**Not Expected.** Study Area does not contain suitable roosting habitat for this species. Species could potentially forage within the Study Area occasionally.
Lasionycteris noctivagans Silver-haired bat	SSC	Found in coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodland, and valley foothill and montane riparian habitats below 2,750 meters. Roosts sometimes in colonies in hollow trees, snags, buildings, rock crevices, caves, and under bark.	**Not Expected.** Study Area does not contain suitable roosting habitat for this species. Species could potentially forage within the Study Area occasionally.

Appendix C (cont.)
Special-Status Species With Potential to Occur in the Study Area

Scientific Name/ Common Name[1]	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
Corynorhinus townsendii Townsend's big-eared bat	SSC	Found in a variety of habitats, usually mesic, featuring brush, trees, and habitat edges. Roosts in small colonies in caves, tunnels, mines, and buildings.	**Not Expected.** Study Area does not contain suitable roosting habitat for this species. Species could potentially forage within the Study Area occasionally.
Lasiurus blossevillii Western red bat	SSC	Found in grasslands, shrublands, open woodlands and forests, and croplands from sea level through mixed conifer forests. Roosts sometimes in colonies in trees and shrubs up to 40 feet above ground.	**Not Expected.** Study Area does not contain suitable roosting habitat for this species. Species could potentially forage within the Study Area occasionally.

[1] Sensitive species reported in CNDDB or CNPS on the "Roseville" USGS quad and 8 surrounding quads, or in USFWS lists for the study area.

[2] Status is as follows: Federal (ESA) listing/State (CESA) listing/other CDFW status or CRPR. F = Federal; S = State of California; E = Endangered; T = Threatened; C = Candidate; FP=Fully Protected; SSC=Species of Special Concern; SA=Special Animal; WL=Watch List.

[3] Status in the Study Area is assessed as follows. **Will Not Occur**: Species is either sessile (i.e., plants) or so limited to a particular habitat that it cannot disperse on its own and/or habitat suitable for its establishment and survival does not occur in the study area; **Not Expected**: Species moves freely and might disperse through or across the study area, but suitable habitat for residence or breeding does not occur in the study area, potential for an individual of the species to disperse through or forage in the site cannot be excluded with 100% certainty; **Presumed Absent:** Habitat suitable for residence and breeding occurs in the study area; however, focused surveys conducted for the current project were negative; **May Occur**: Species was not observed on the site and breeding habitat is not present but the species has the potential to utilize the site for dispersal, **High**: Habitat suitable for residence and breeding occurs on the study area and the species has been recorded recently in or near the study area, but was not observed during surveys for the current project; **Present**: The species was observed during biological surveys for the current project and is assumed to occupy the study area or utilize the study area during some portion of its life cycle.

CRPR = California Rare Plant Rank: 1B – rare, threatened, or endangered in California and elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere. Extension codes: .1 – seriously endangered; .2 – moderately endangered.

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Attachment 2

Appendix D

Plant and Wildlife Species Observed in the Study Area

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Appendix D
Plant Species Observed in the Study Area

Family	Scientific Name	Common Name
Native		
Asparagaceae	*Brodiaea elegans*	Harvest brodiaea
Asteraceae	*Baccharis pilularis*	Coyote brush
	Deinandra fasciculata	Slender tarweed
Boraginaceae	*Amsinckia sp.*	Fiddleneck
Fabaceae	*Lupinus* sp.	Lupine
Papaveraceae	*Eschscholzia californica*	California poppy
Non-native		
Amaranthaceae	*Salsola tragus*	Russian thistle
Apiaceae	*Daucus carota*	Wild carrot
Asteraceae	*Carduus pycnocephalus*	Italian thistle
	Centaurea solstitialis	Yellow star-thistle
	Cirsium vulgaris	Bull thistle
	Leontodon saxatilis	Hawkbit
Brassicaceae	*Brassica nigra*	Black mustard
	Raphanus sativus	Wild radish
Convolvulaceae	*Convolvulus arvensis*	Field bindweed
Fabaceae	*Vicia sativa*	Common vetch
Geraniaceae	*Erodium botrys*	Storksbill
Poaceae	*Avena* sp.	Wild oat
	Bromus diandrus	Ripgut brome
	Bromus hordeaceous	Soft brome
	Elymus caput-medusae	Medusahead
	Festuca perennis	Italian ryegrass
	Hordeum murinum	Barley
Polygonaceae	*Rumex crispus*	Dock

Appendix D (cont.)
Wildlife Species Observed in the Study Area

Family	Scientific Name	Common Name
Reptiles		
Colubridae	*Thamnophis elegans*	Western terrestrial garter snake
Phrynosomatidae	*Sceloporus occidentalis*	Western fence lizard
Birds		
Charadriidae	*Charadrius vociferus*	Killdeer
Columbidae	*Zenaida macroura*	Mourning dove
Icteridae	*Agelaius phoeniceus*	Red-winged blackbird

Appendix E

Representative Site Photos

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Photo 1: View of disturbed/ruderal habitat looking southwest.

Photo 2: Looking northeast at offsite tilled field. Disturbed ruderal habitat in foreground.

Photo 3: Looking south along western fence line toward adjacent DMV office to south.

Photo 4: View of previous alignment of ditch/canal that was previously excavated in uplands and then filled in. Storm drain in foreground.

Attachment 3

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Memorandum

To: Jack Varozza, P.E., QSD
Senior Engineer, City of Roseville

From: Stephen M. Dillon, EIT
Matt Weir, P.E., T.E., PTOE, RSP_1

Re: *Green Acres Nursery & Supply*
Traffic Evaluation
Roseville, California

Date: April 26, 2021

Per your request and authorization, we have prepared this traffic evaluation for the above referenced project.

Project Understanding

Kimley-Horn understands that a Green Acres Nursery & Supply is proposed to be constructed on a vacant site along Galilee Road near Industrial Avenue adjacent to the California Department of Motor Vehicles (see **Exhibit 1**). The proposed project consists of a 31,787-square foot (sf) indoor retail building, approximately 47,000-sf of supplemental greenhouse/lath space, and 251 onsite parking stalls (see **Exhibit 2**). Access to the proposed project will be from two, full-access driveways along Galilee Road. An additional service/delivery access-only driveway is also proposed along Galilee Road.

The purpose of this analysis was to evaluate the proposed project's localized traffic operations and access points, including throat depths and driveway treatments, to efficient traffic operations. This analysis was conducted using standard Institute of Transportation Engineers' (ITE) trip generation methods.

Study Facilities and Evaluation Parameters

The following six intersections were included in this access evaluation. **Exhibit 3** details the study intersections' geometries while **Exhibit 4** details the weekday AM and PM peak-hour volumes with the addition of the Proposed Project. Traffic counts are provided in **Attachment A**. For each location, traffic/access control and the primary evaluation parameter(s) are also specified.

1. Galilee Road @ Northern Site Access Driveway
    - Full access, side-street stop control (SSSC)
    - Primary considerations are the interaction between this and adjacent (existing) driveways, on- and off-site vehicle queuing and access, general driveway operations, and the minimum required throat depth (MRTD)
2. Galilee Road @ Southern Site Access Driveway
    - Full access, SSSC
    - Primary considerations are the interaction between this and adjacent (existing) driveways, on- and off-site vehicle queuing and access, general driveway operations, and the minimum required throat depth (MRTD)
3. Industrial Avenue @ Galilee Road
    - Existing SSSC
    - Primary consideration is anticipated mix of volumes with project volumes, with a focus on the left-turn movements and overall intersection operations associated with the project site

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4. Washington Boulevard @ Industrial Avenue
    - Existing SSSC
    - Primary consideration is anticipated mix of volumes with project volumes, with a focus on the left-turn movements and overall intersection operations associated with the project site.
5. Pleasant Grove Boulevard @ Galilee Road
    - Existing SSSC, right-in/right-out
    - Primary consideration is anticipated mix of volumes with project volumes, with a focus on overall intersection operations.
6. Pleasant Grove Boulevard @ Washington Boulevard
    - Existing traffic signal
    - Primary consideration is anticipated mix of volumes with project volumes, with a focus on the left-turn movements associated with the project site.

The access evaluation was conducted for the weekday AM and PM peak-hours for the following conditions:

A. Existing (2020 pre-COVID) Conditions plus Proposed Project

Methods defined in the *Highway Capacity Manual (HCM),* using appropriate traffic analysis software, were applied.

Assessment of Proposed Project

Trip Generation
The number of trips anticipated to be generated by the proposed project were approximated using data contained in the *Trip Generation Manual, 10th Edition,* published by the Institute of Transportation Engineers (ITE). Land Use 817 (Nursery (Garden Center)) was selected based on the project description and prior Traffic Analysis Zone (TAZ) analysis completed and provided by the City. Using square footages (gross floor area) provided in the site plan and City TAZ, and consistent with ITE's land use description, trips were estimated using a nursery size of 31,787-sf. The data associated with this evaluation is presented in **Table 1**.

Table 1 – Trip Generation Data

Land Use (ITE Code)	Size (KSF)	Daily Trips	AM Peak-Hour					PM Peak-Hour				
			Total Trips	In		Out		Total Trips	In		Out	
				%	Trips	%	Trips		%	Trips	%	Trips
Nursery (Garden Center) (817)	31.787	2,180	77	50%	39	50%	38	221	50%	111	50%	110
Net New Project Trips		**2,180**	**77**		**39**		**38**	**221**		**111**		**110**
Source: Trip Generation Manual, 10th Edition, ITE												

The data contained in **Table 1** indicate that proposed project is anticipated to generate 77 AM and 221 PM trips during the weekday AM and PM peak-hours of adjacent street traffic, respectively.

Trip Distribution
The distribution of project traffic was based on existing project area roadway volumes, general knowledge of project area traffic patterns, and engineering judgement. Project trips were assigned to the study intersections and the surrounding roadway network according to this distribution. Weekday AM and PM peak-hour volumes for Existing (2020) plus Proposed Project Conditions are reflected in **Exhibit 4**.

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Traffic Assessment

As previously discussed, the purpose of this analysis was to evaluate the proposed project's access points, proximate streets, and surrounding intersections to assess the amount of storage and/or treatments necessary to ensure efficient operations on and around the site. This traffic evaluation included consideration of vehicle queuing entering the site and the associated Minimum Required Throat Depth (MRTD) at both proposed site driveways. For this evaluation, the City's guidelines[1] were referenced to determine the driveways' MRTD for egressing vehicles. Additionally, Synchro was used to evaluate the anticipated operations at the surrounding intersections.

Standards of Significance

Project impacts were determined by comparing existing conditions including the proposed project to existing conditions without the project. Impacts for intersections are created when traffic from the proposed project forces the LOS to fall below a specific threshold. The City's *General Plan*[2] specifies the following:

> "*Level of Service (LOS) expresses the City's targeted level of mobility during the life of the General Plan. Its policies and implementation measures reflect the City's desire to maintain uncongested traffic operations (LOS "C" or better at 70% of the signalized intersections during the a.m. and p.m. peak periods) on its roadway system for all hours of the day. The level of service implementation measures provide criteria to be evaluated where the City may consider a modification to the level of service "C" policy."*

Based on this guidance provided by the City and in a manner consistent with other traffic studies completed in the City, the project would have a significant impact if it would:

1. Cause a signalized intersection to be degraded as follows under Existing conditions during the weekday AM or PM peak-hours:
    - For intersections currently operating at LOS C or better: worsen operations to LOS D or worse.
    - For intersections currently operating at LOS D, E, or F: cause operations to further worsen by one or more service levels.
2. Cause the overall percentage of signalized intersections operating at LOS C or better during the AM and PM peak hours to fall below 70 percent.

Minimum Required Throat Depth (MRTD)

The MRTD was calculated for both proposed site driveways on Galilee Road (Intersections #1 and #2). **Table 2** summarizes the findings of the MRTD evaluation based on the City's guidelines[1].

Table 2 – MRTD for Site Access Driveways

Intersection		Peak-Hour	TS	Approach Volume	ConflVol (Left)	ConflVol (Right)	LT Out	RT Out	RT%	Minimum Required Throat Depth (MRTD)	Available Storage
1	Galilee Rd @ Northern Site Access Driveway	AM	1	23	524	340	4	19	83%	**25**	**50**
		PM	1	63	817	410	10	53	84%	**25**	
2	Galilee Rd @ Southern Site Access Driveway	AM	1	17	519	346	9	8	47%	**25**	**50**
		PM	1	48	802	425	26	22	46%	**25**	

Note: All volumes from Existing + Proposed Project Scenario

[1] *Section 4 Traffic Impact Studies, City of Roseville Design Standards*, January 2016.

[2] *Roseville General Plan 2035, Circulation Element*, City of Roseville, August 17, 2016.

The proposed available throat depth for Intersections #1 and #2 is observed to be approximately 50-feet. As shown in **Table 2**, the MRTD is 50-feet in the AM and PM peak-hours for both intersections. Thus, Intersection #1 and #2 satisfy the MRTD during the weekday AM and PM peak-hours.

Sight Distance

The proposed driveway locations (Intersections #1, #2, and service access) were assessed to determine the adequacy of sight distance allowing drivers to identify potential conflicts. On-street parking is currently allowed on both sides of Galilee Road for the entire length of the proposed project frontage. Posted signage along the east side of Galilee Road indicates on-street parking should be restricted to vehicles less than 6-feet in height. The posted speed on Galilee Road is 35 MPH. The required stopping sight distance (SSD) for a 35 MPH design speed is 250-feet[3].

A City of Roseville Speed Zone Survey from September 2020 identified an 85th percentile prevailing speed along Galilee Road of 39.5 MPH and ultimately concluded that the existing 35 MPH posted speed limit was appropriate. The number of existing business driveways and existing California Department of Motor Vehicles (DMV) location south of the site likely contributed to the City's conclusion of 35 MPH as the posted speed limit.

A site visit was completed on March 17, 2021, during which vehicles in excess of 6-feet high were observed to be parking along the project frontage. Additional examples of this behavior are available on Google Street View (imagery dated December 2020). **Exhibit 5** depicts sight triangles for the two proposed full-access driveways to allow for the identification of potential traffic conflicts.

In light of existing parking behaviors and increased traffic anticipated to be generated by the project, it is recommended that the City prohibit on-street parking along the entire project frontage. Removing parking along the Galilee Road frontage will provide vehicles turning left from Intersection #1 (exiting the project site) with an unobstructed view of traffic, particularly coming from Industrial Avenue (Intersection #3). These actions should serve to ensure efficient conditions for vehicles accessing either the project site or existing businesses along Galilee Road.

Signalized Intersection Queuing and Operations

In an effort to assess on-site operations and the project's effect on proximate intersections, Synchro was used to determine the anticipated delay, Level of Service (LOS), and 95th percentile vehicle queues under Existing (2020) and Existing (2020) plus Project Conditions. **Table 3** summarizes the delay and LOS at the intersections while **Table 4** summarizes the queuing for select movements for both Existing (2020) and Existing (2020) plus Project scenarios. Analysis worksheets are provided in **Attachment B**.

Table 3 indicates Washington Boulevard at Pleasant Grove Boulevard (Intersection #6) does not satisfy the City's operational guidelines for signalized intersection (shown to operate worse than LOS C). This condition is shown to exist under the "no-project" conditions, to which the addition of the project results in a maximum of 1.9-seconds of additional delay. As Intersection #6 operates at LOS D in the Existing (2020) condition and does not worsen by one or more service level with the addition of the project, the project impact is not deemed significant as defined by the City.

Also as shown in **Table 3**, Intersections #3 – #5 operate poorly under "no-project" conditions. These unsignalized intersections (all controlled with side-street stop control) are not bound by the same LOS guidelines as noted above for signalized intersections. At these locations, each of the side streets (which are stop-controlled) experience delay as they wait to enter/cross the respective main street through movements.

[3] Table 9-7, *AASHTO Green Book*, *7th Edition,* 2018.

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Table 3 – Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Existing (2020)		Existing (2020) plus Proposed Project	
				Delay	LOS	Delay	LOS
3	Galilee Rd @ Industrial Ave	SSSC*	AM	8.9 (23.2 EB)	C	10.3 (25.9 EB)	D
			PM	13.7 (48.4 EB)	E	33.2 (105.9 EB)	F
4	Industrial Ave @ Washington Blvd	SSSC*	AM	3.7 (60.8 EB)	F	4.3 (70.3 EB)	F
			PM	11.1 (173.5 EB)	F	19.1 (300.1 EB)	F
5	Galilee Rd @ Pleasant Grove Blvd	SSSC*	AM	2.1 (20.9 NB)	B	2.3 (20.9 NB)	B
			PM	46.9 (367.4 SB)	F	62.3 (435.4 SB)	F
6	Washington Blvd @ Pleasant Grove Blvd	Signal	AM	40.8	D	40.9	D
			PM	44.0	D	45.9	D

*Side Street Stop Controlled (SSSC) intersections are reported as the intersection delay followed by the worst approach's delay. The reported LOS corresponds to the worst minor street movement. The City's LOS threshold (LOS C) does not apply to these unsignalized intersections.

-Orange shading indicates LOS performance below City of Roseville standard (LOS C) for signalized intersections.

Table 4 – Intersection Queuing

Intersection / Analysis Scenario	Movement	Available Storage (ft)	95th % Queue (ft)	
			AM Peak-Hour	PM Peak-Hour
#3, Galilee Rd @ Industrial Ave	EBL			
Existing (2020)		130	125	225
Existing (2020) plus Proposed Project		130	125	400
Existing (2020) plus Proposed Project (Mitigated)		125	125	200
	NBL			
Existing (2020)		200	25	25
Existing (2020) plus Proposed Project		200	25	25
#4, Industrial Ave @ Washington	EBL			
Existing (2020)		245	50	125
Existing (2020) plus Proposed Project		245	75	200
	NBL			
Existing (2020)		200	25	50
Existing (2020) plus Proposed Project		200	25	50
#5, Galilee Rd @ Pleasant Grove Blvd	SBR			
Existing (2020)		180	50	700
Existing (2020) plus Proposed Project		180	50	825
Existing (2020) plus Proposed Project (SimTraffic)		180	-	89
	EBL			
Existing (2020)		250	75	325
Existing (2020) plus Proposed Project		250	75	400
Existing (2020) plus Proposed Project (SimTraffic)		250	-	205
#6, Washington Blvd @ Pleasant Grove Blvd	SBL			
Existing (2020)		250	65	87
Existing (2020) plus Proposed Project		250	71	101
	NBL			
Existing (2020)		250	81	123
Existing (2020) plus Proposed Project		250	84	131

-Delay calculations/directions taken from Synchro reports

-Orange cells indicate approaches where queue condition exceeds available storage

Table 4 indicates that, despite sub-standard LOS operations, peak-hour queuing does not exceed existing storage capacity at Washington Boulevard at Pleasant Grove Boulevard (Intersection #6). While the delays and queue lengths shown at Intersections #3-#5 appear drastic, there is reason to believe that such queuing events are unlikely based on field observations and underlying traffic data used reflecting already high pre-COVID volumes that did not result in such queuing events. Through other efforts, we understand this area to be a focus for the City. Industrial Avenue and Washington Boulevard (Intersection #4) is scheduled for future signalization[4], and Galilee Road and Pleasant Grove Boulevard (Intersection #5) is included as a focus area in the City's Local Road Safety Plan[5].

The modeled queuing at Intersection #5 was assessed further as spillback from the eastbound left-turn pocket into the eastbound Pleasant Grove Boulevard through lanes constitutes a safety concern. Streetlight count data used for Intersection #5 was proofed against Intersection #6 signal approach data provided by the City from October 2019 and no significant differences were found. SimTraffic was subsequently used for the critical scenario (Existing plus Project, PM Peak Hour) in an attempt to more accurately model traffic operations between Intersections #5 and #6 on a more focused level. The 10 simulations run show the average PM peak hour eastbound left-turn queue length on Pleasant Grove Boulevard for the conservative scenario to be 205-feet, which is accommodated within the existing left-turn lane (250-foot storage). This is a finding that is supported by field observations and a condition that is known to persist. The SimTraffic report summary is provided in Attachment B. For Intersections #4 and #5 there are no reasonable or apparent modifications recommended to improve the calculated queues.

From this information it is reasonable to conclude that the proposed project is not the primary contributor toward the traffic conditions near the site. To improve performance, the City should consider restriping the Galilee Road approach to Industrial Avenue (Intersection #3) to provide left and right-turn lanes. This modification is consistent with the aforementioned removal of on-street parking along the entire Galilee Road project frontage and is shown to reduce the anticipated queuing (see Table 4). This condition is reflected in Exhibit 5 and is included in analysis worksheets in Attachment B.

Emergency Vehicle and Refuse Service Access

The site plan in Exhibit 2 was qualitatively reviewed for emergency vehicle and refuse service access. The project site appears to include adequate access around the building to accommodate emergency vehicles. Adequate access and circulation are provided for refuse services to access the onsite refuse locations depicted in Exhibit 2.

Conclusions

The following are the primary conclusions based on the analyses discussed herein:

- *City of Roseville MRTD standards are achieved at site access driveways along Galilee Road (Intersections #1 and #2)* – notwithstanding data pertaining to traffic volumes associated with the existing driveways opposite the proposed site access points.
- *On-street parking along the entire Galilee Road frontage should be eliminated* – based on the sight distance requirements for a 35 MPH posted speed limit and in the interested of creating an efficient operating environment, on-street parking along the east side of Galilee Road should be prohibited for the entire project frontage.
- *The eastbound Galilee Road approach to Industrial Avenue (Intersection #3) should be restriped to reduce queuing* – by providing left and right-turn lanes, and in conjunction with the removal of all on-street parking along the project frontage, vehicle queuing is shown to be reduced at this intersection.

[4] Figure 5, *ITS Master Plan, City of Roseville,* 2020

[5] *Local Road Safety Plan, City of Roseville,* 2021

- *Study intersection delays are not due to proposed project* – while some unsignalized intersections exhibit significant delays, additional traffic associated with the proposed Project is not the cause of these conditions. While the Project is noted to result in additional delay at the signalized Washington Boulevard and Pleasant Grove intersection (Intersection #6), it does not further degrade the existing LOS D.
- *Adequate emergency vehicle and refuse service access is provided.*

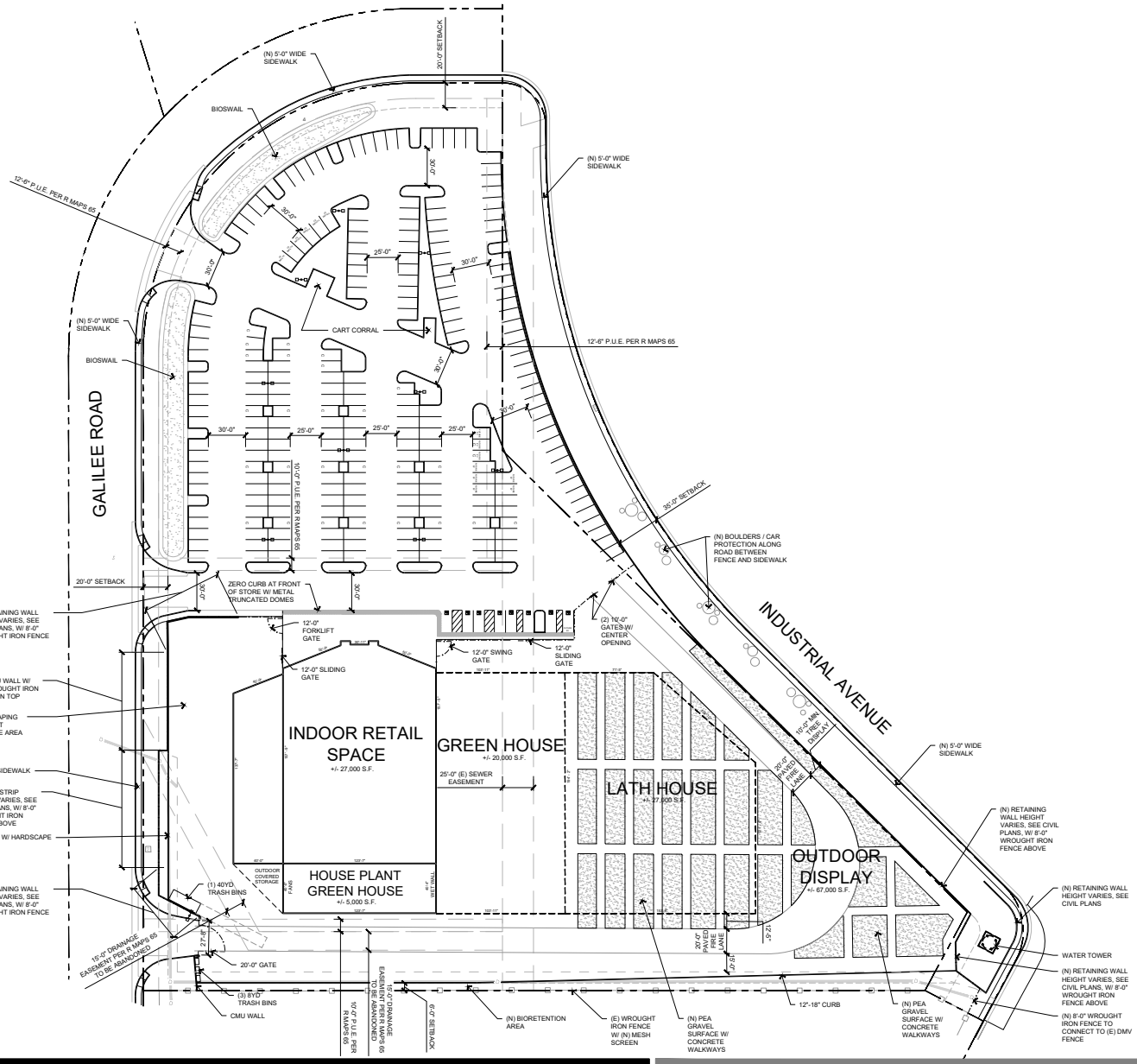
Attachments:

Exhibit 1 – Project Vicinity Map
Exhibit 2 – Preliminary Site Plan
Exhibit 3 – Study Intersections, Traffic Control, and Lane Geometries
Exhibit 4 – Existing (2020) plus Proposed Project Peak-Hour Volumes
Exhibit 5 – Driveway Sight Triangles

Attachment A – Traffic Count Data Sheets
Attachment B – Analysis Worksheets

Attachment 3

Exhibit 1
Project Vicinity Map



VICINITY MAP

DRAWING INDEX

ARCHITECTURAL
SA-1.0 SITE PLAN
SA-2.0 EXTERIOR ELEVATIONS
E-1 SITE PHOTOMETRICS

CIVIL
UT1 PRELIMINARY UTILITY PLAN
GR1 PRELIMINARY GRADING PLAN

LANDSCAPE
PL1 PRELIMINARY LANDSCAPE PLAN
PL2 PRELIMINARY LANDSCAPE DETAILS

PROJECT DATA

ASSESSOR'S PARCEL #:	017-410-070-000 017-410-020-000 017-410-019-000 017-410-068-000
PRIMARY PLANNING AREA:	NORTH IDUSTRIAL PLAN AREA
PRIMARY PARCEL NUMBER:	29
PRIMARY ZONING:	GC - GENERAL COMMERCIAL
RRIMARY LANDUSE:	CC - COMMUNITY COMMERCIAL
OVERALL PARCEL AREA:	+/- 6.89 AC (+/- 300,000 SF)

AREA SUMMARY:

INDOOR RETAIL (1-STORY):	26,795 SQ.FT.
HOUSE PLANT GREEN HOUSE (1-STORY):	4,992 SQ.FT.
GREEN HOUSE:	20,191 SQ.FT.
LATH HOUSE:	26,835 SQ.FT.
OUTDOOR DISPLAY AREA:	75,463 SQ.FT.
TOTAL:	154,276 SQ.FT.

PARKING CALCULATION

INDOOR RETAIL:	26,795 SQ.FT.	/ 300	=	90 STALLS REQ'D
HOUSE PLANT GREEN HOUSE:	4,992 SQ.FT.	/ 300	=	17 STALLS REQ'D
GREEN HOUSE:	20,191 SQ.FT.	/ 1000	=	21 STALLS REQ'D
LATH HOUSE:	26,835 SQ.FT.	/ 1000	=	27 STALLS REQ'D
OUTDOOR DISPLAY AREA:	75,463 SQ.FT.	/ 1000	=	76 STALLS REQ'D
TOTAL PARKING REQUIRED:				231 TOTAL STALLS REQ'D

TOTAL PARKING PROVIDED: 200 STANDARD STALLS
29 COMPACT STALLS
7 ACC. STALLS
15 EV STALLS
251 TOTAL STALLS PROVIDED

GREEN ACRES NURSERY & SUPPLY

SITE PLAN

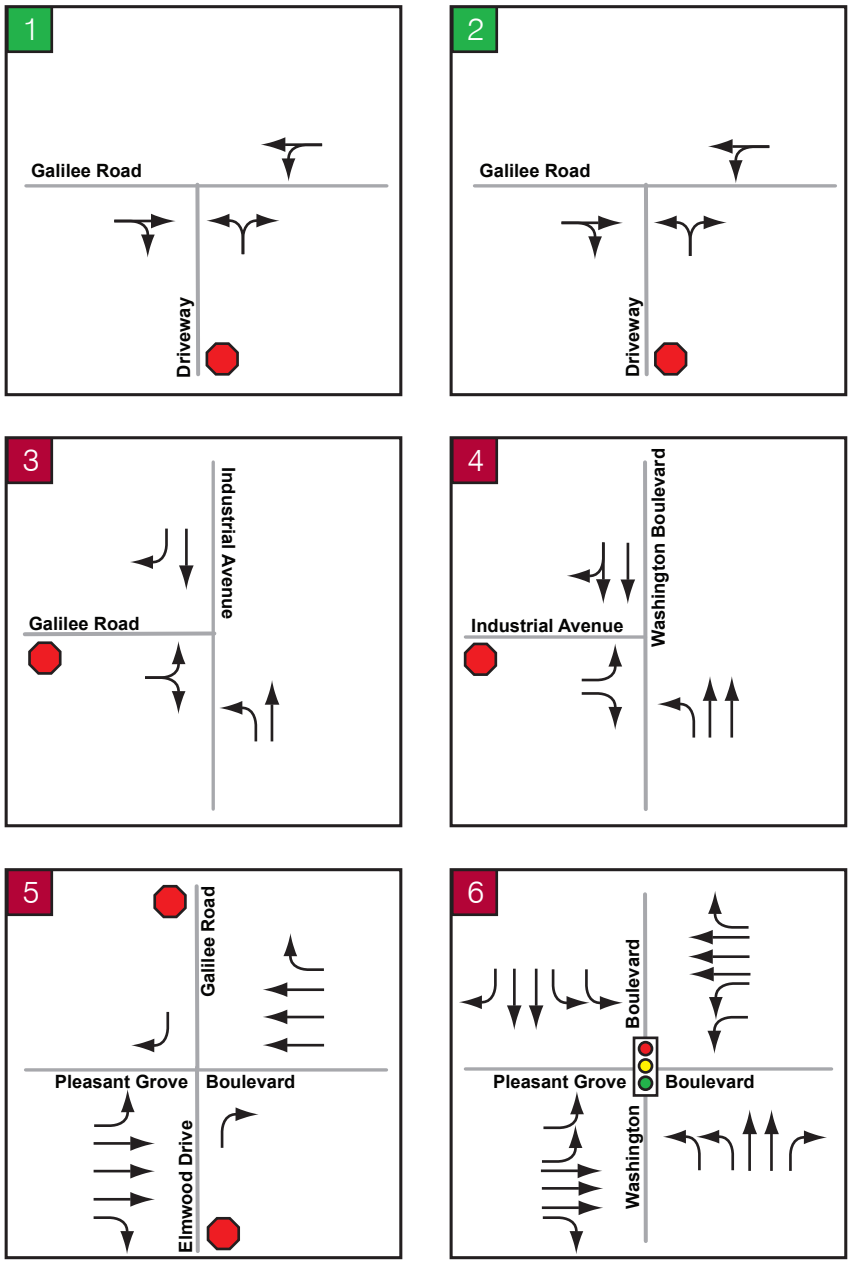
SA-1.0

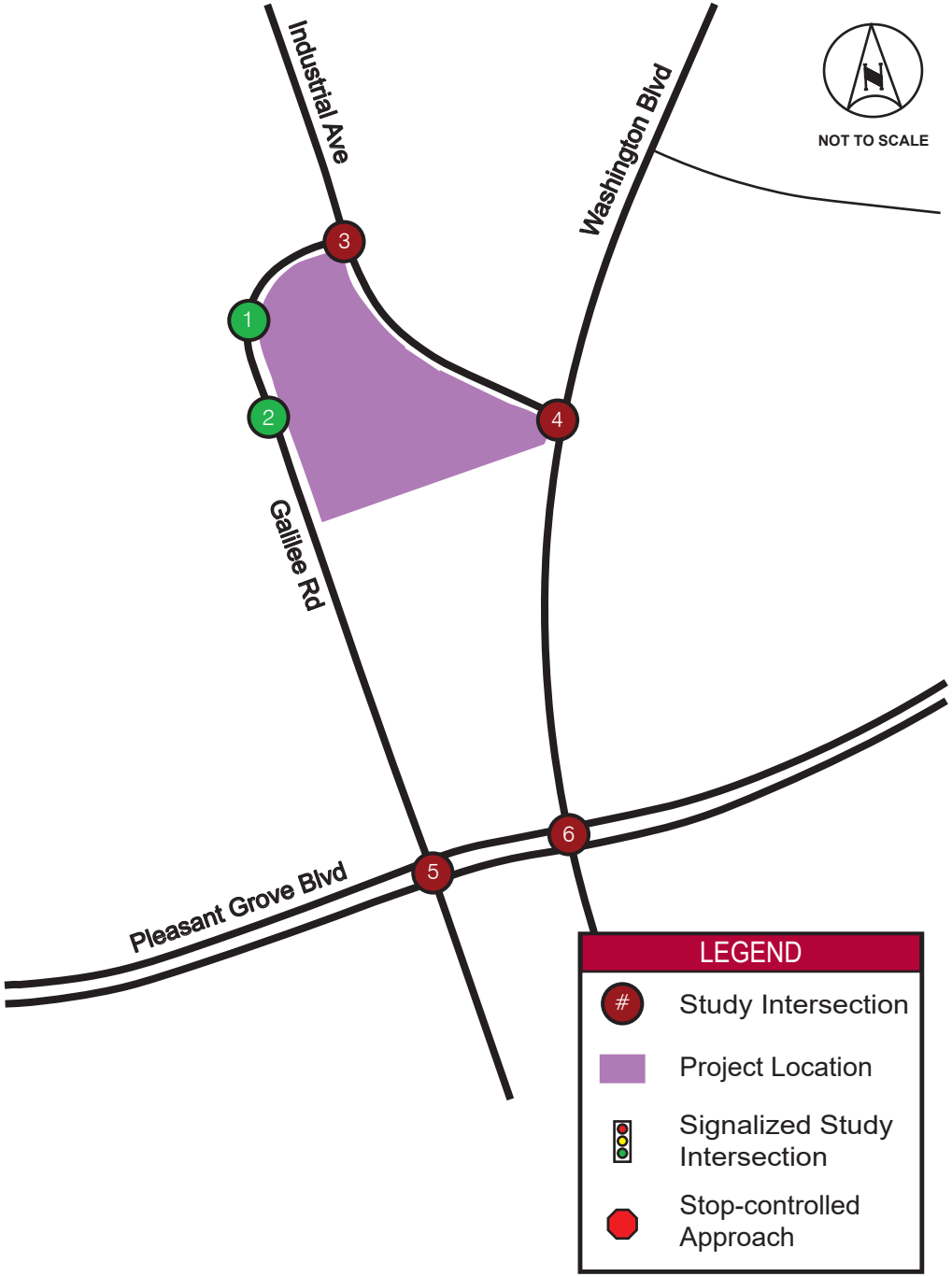
GALILEE ROAD, ROSEVILLE, CALIFORNIA 21001-02 02-19-2021

1478 STONE POINT DRIVE SUITE 350 ROSEVILLE, CA 95661 T | 916 782 7200 borgesarch.com

Borges ARCHITECTURAL GROUP

Attachment 3





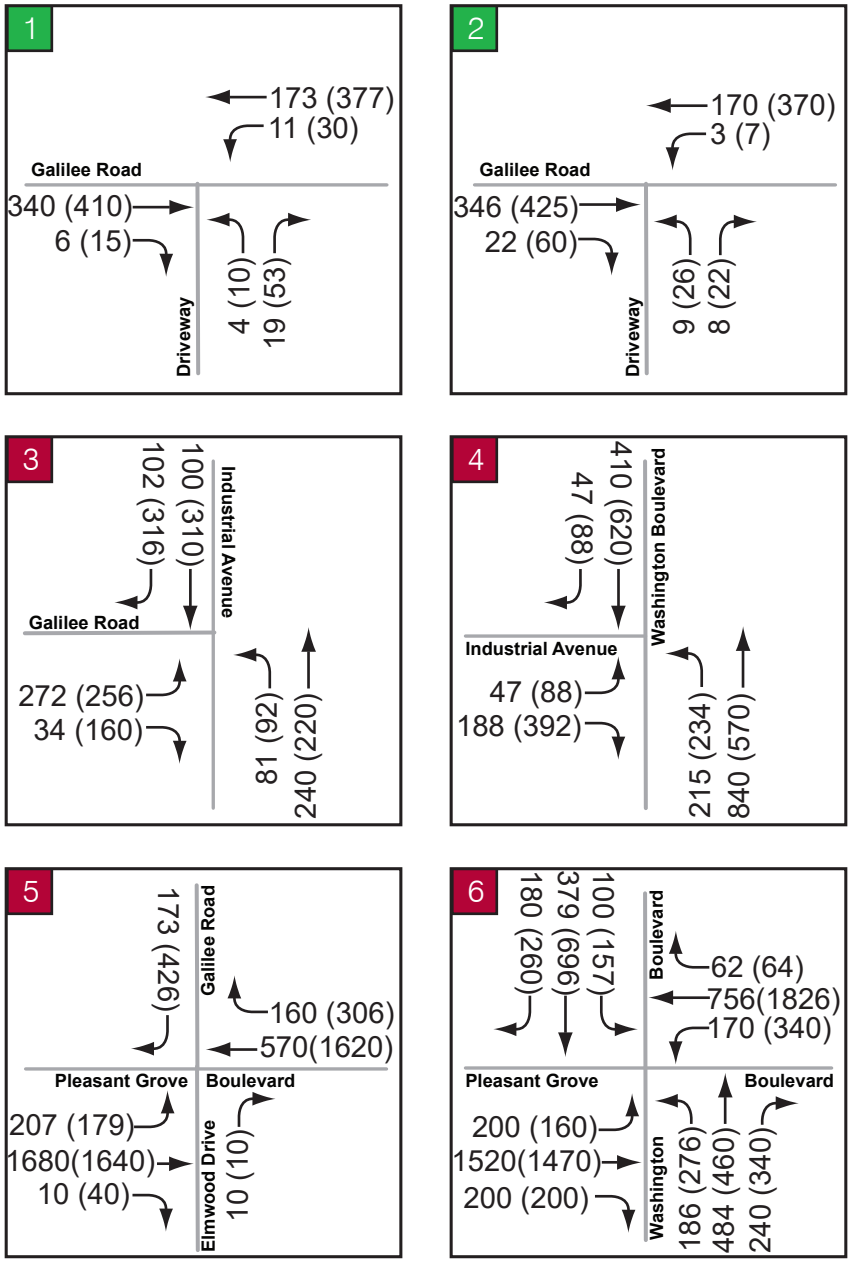
Kimley»Horn

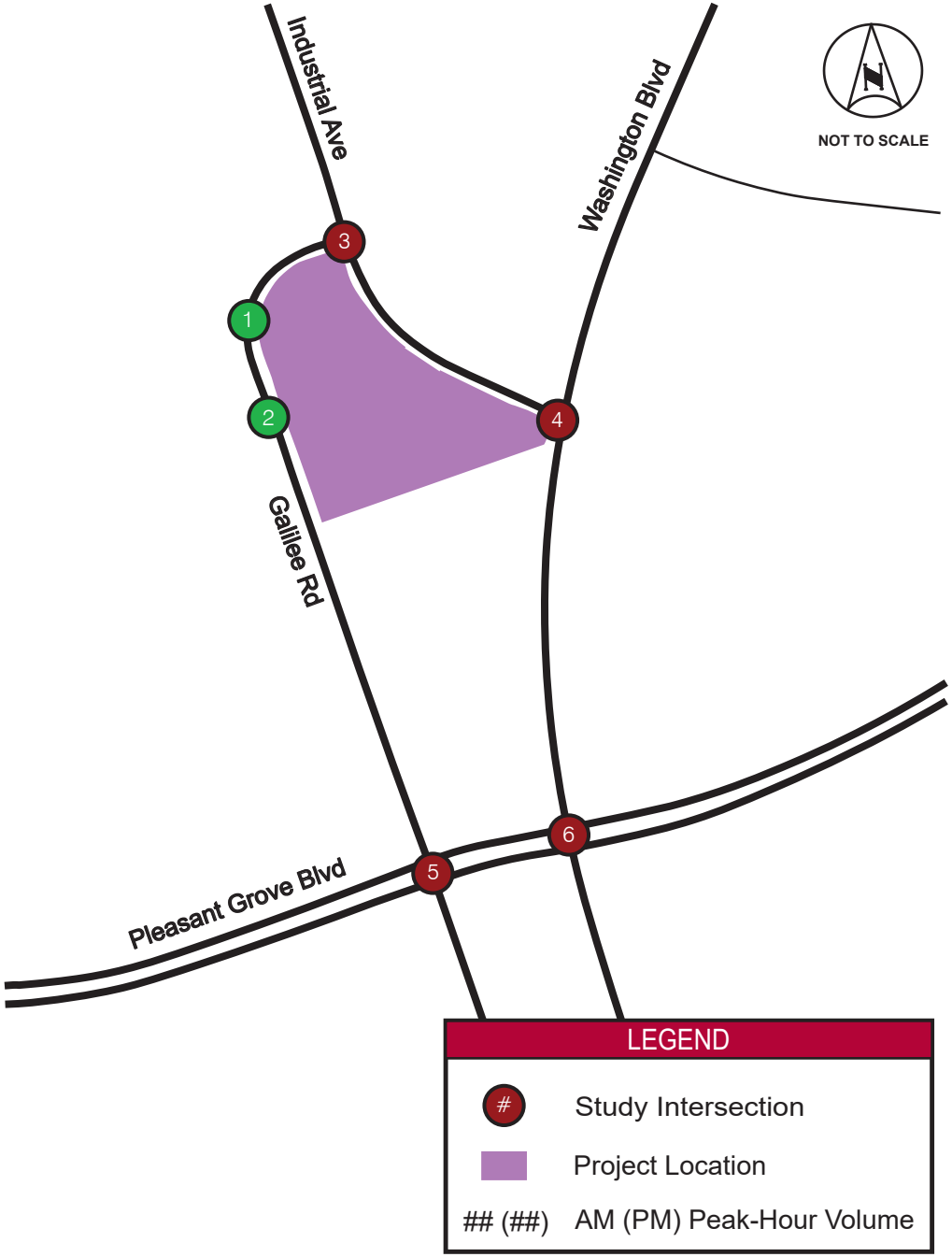
Exhibit 3

Study Intersections, Traffic Control, and Lane Geometries

Attachment 3

Existing (2020) plus Proposed Project





Kimley»Horn

Exhibit 4

Existing (2020) plus Proposed Project Peak-Hour Volumes

Attachment 3

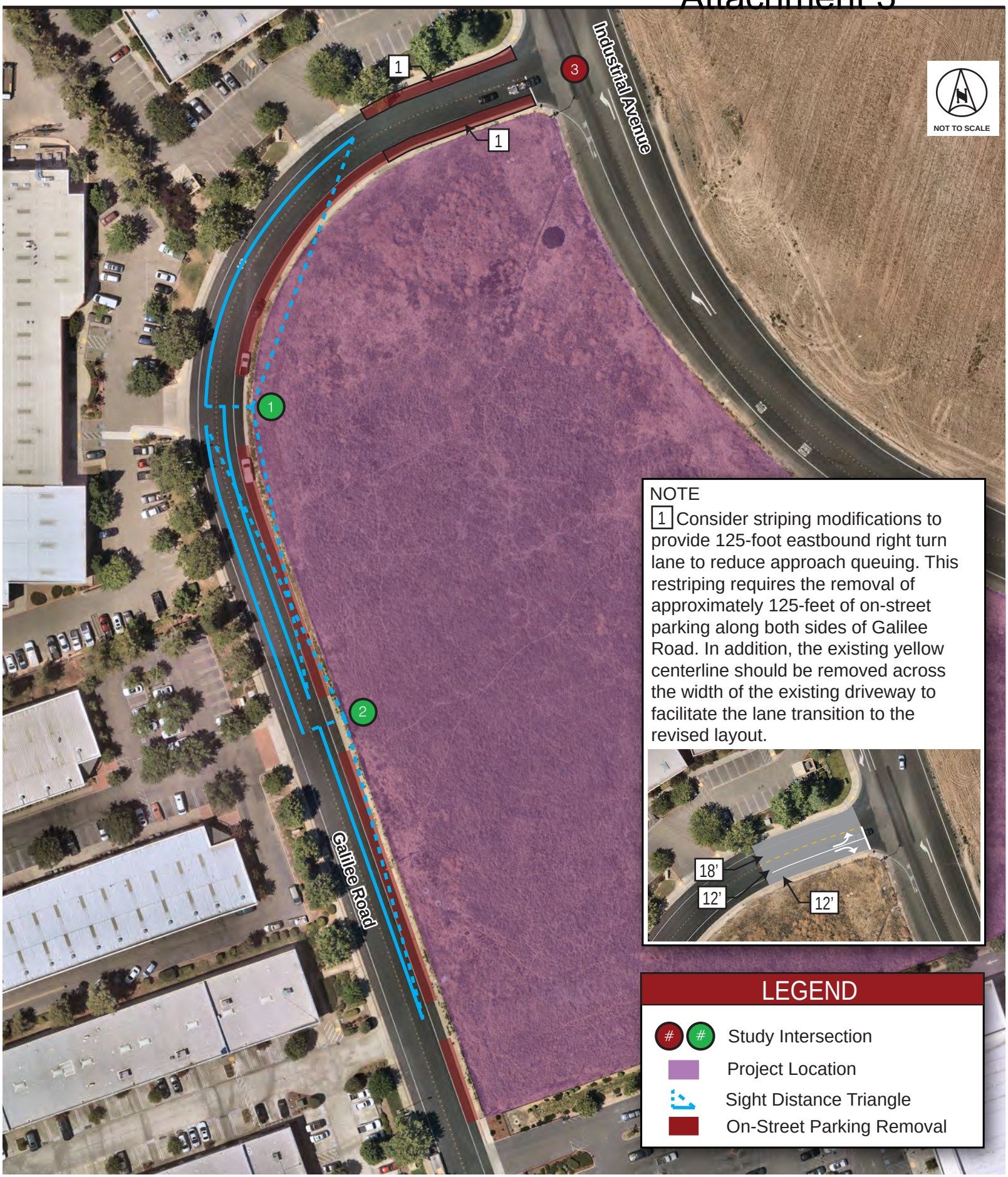


Exhibit 5
Driveway Sight Triangles

Kimley»Horn

Attachment A

Traffic Count Data Sheets

StreetLight Data

Day Type

1: Tue-Thur (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	Green Acres_INT 3_West_A			Green Acres_INT 3_East_A			Green Acres_INT 3_South_A						Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
0: All Day (12am-12am)	-	2,169	2,639	603	2,362	-	2,272	-	780	-	-	-	10,825
1: 6am-7am (6am-7am)	-	27	45	30	80	-	98	-	-	-	-	-	280
2: 7am-8am (7am-8am)	-	98	92	65	235	-	263	-	7	-	-	-	760
3: 8am-9am (8am-9am)	-	167	116	33	198	-	117	-	56	-	-	-	687
4: 4pm-5pm (4pm-5pm)	-	270	279	47	194	-	160	-	94	-	-	-	1,044
5: 5pm-6pm (5pm-6pm)	-	310	304	53	216	-	245	-	85	-	-	-	1,213
6: 6pm-7pm (6pm-7pm)	-	130	224	52	315	-	269	-	56	-	-	-	1,046
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TURNING MOVEMENT PERCENTAGE

Day Part	Green Acres_INT 3_West_A			Green Acres_INT 3_East_A			Green Acres_INT 3_South_A					
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
0: All Day (12am-12am)	0%	45%	55%	20%	80%	0%	74%	0%	26%	-	-	-
1: 6am-7am (6am-7am)	0%	38%	63%	27%	73%	0%	100%	0%	0%	-	-	-
2: 7am-8am (7am-8am)	0%	52%	48%	22%	78%	0%	97%	0%	3%	-	-	-
3: 8am-9am (8am-9am)	0%	59%	41%	14%	86%	0%	68%	0%	32%	-	-	-
4: 4pm-5pm (4pm-5pm)	0%	49%	51%	20%	80%	0%	63%	0%	37%	-	-	-
5: 5pm-6pm (5pm-6pm)	0%	50%	50%	20%	80%	0%	74%	0%	26%	-	-	-
6: 6pm-7pm (6pm-7pm)	0%	37%	63%	14%	86%	0%	83%	0%	17%	-	-	-
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StreetLight Data

Attachment 3

Day Type

1: Tue-Thur (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	Green Acres_INT 4_West_A						Green Acres_INT 4_South_A			Green Acres_INT 4_North_A			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
0: All Day (12am-12am)	533	-	2,534	-	-	-	2,441	5,784	-	-	6,198	603	18,093
1: 6am-7am (6am-7am)	-	-	26	-	-	-	94	89	-	-	179	19	407
2: 7am-8am (7am-8am)	12	-	100	-	-	-	260	434	-	-	599	54	1,459
3: 8am-9am (8am-9am)	34	-	169	-	-	-	202	834	-	-	414	35	1,688
4: 4pm-5pm (4pm-5pm)	58	-	309	-	-	-	190	471	-	-	656	64	1,748
5: 5pm-6pm (5pm-6pm)	61	-	336	-	-	-	218	564	-	-	614	62	1,855
6: 6pm-7pm (6pm-7pm)	31	-	160	-	-	-	304	442	-	-	455	74	1,466
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TURNING MOVEMENT PERCENTAGE

Day Part	Green Acres_INT 4_West_A						Green Acres_INT 4_South_A			Green Acres_INT 4_North_A		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
0: All Day (12am-12am)	17%	0%	83%	-	-	-	30%	70%	0%	0%	91%	9%
1: 6am-7am (6am-7am)	0%	0%	100%	-	-	-	51%	49%	0%	0%	90%	10%
2: 7am-8am (7am-8am)	11%	0%	89%	-	-	-	37%	63%	0%	0%	92%	8%
3: 8am-9am (8am-9am)	17%	0%	83%	-	-	-	19%	81%	0%	0%	92%	8%
4: 4pm-5pm (4pm-5pm)	16%	0%	84%	-	-	-	29%	71%	0%	0%	91%	9%
5: 5pm-6pm (5pm-6pm)	15%	0%	85%	-	-	-	28%	72%	0%	0%	91%	9%
6: 6pm-7pm (6pm-7pm)	16%	0%	84%	-	-	-	41%	59%	0%	0%	86%	14%
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StreetLight Data

Day Type

1: Tue-Thur (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	Green Acres_INT 5_West_A			Green Acres_INT 5_East_A			Green Acres_INT 5_South_A			Green Acres_INT 5_North_A			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
0: All Day (12am-12am)	2,256	20,421	184	41	18,779	2,314	8	-	337	363	13	3,143	47,859
1: 6am-7am (6am-7am)	97	802	4	-	348	58	-	-	-	-	-	57	1,366
2: 7am-8am (7am-8am)	301	2,355	17	-	785	138	-	-	49	5	-	86	3,736
3: 8am-9am (8am-9am)	193	1,674	3	-	569	139	-	-	7	15	-	136	2,736
4: 4pm-5pm (4pm-5pm)	151	1,633	31	-	1,614	250	-	-	7	40	-	348	4,074
5: 5pm-6pm (5pm-6pm)	200	1,727	-	-	1,955	214	-	-	21	37	-	364	4,518
6: 6pm-7pm (6pm-7pm)	217	1,601	4	13	1,754	152	-	-	20	37	-	221	4,019
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TURNING MOVEMENT PERCENTAGE

Day Part	Green Acres_INT 5_West_A			Green Acres_INT 5_East_A			Green Acres_INT 5_South_A			Green Acres_INT 5_North_A		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
0: All Day (12am-12am)	10%	89%	1%	0%	89%	11%	2%	0%	98%	10%	0%	89%
1: 6am-7am (6am-7am)	11%	89%	0%	0%	86%	14%	-	-	-	0%	0%	100%
2: 7am-8am (7am-8am)	11%	88%	1%	0%	85%	15%	0%	0%	100%	5%	0%	95%
3: 8am-9am (8am-9am)	10%	90%	0%	0%	80%	20%	0%	0%	100%	10%	0%	90%
4: 4pm-5pm (4pm-5pm)	8%	90%	2%	0%	87%	13%	0%	0%	100%	10%	0%	90%
5: 5pm-6pm (5pm-6pm)	10%	90%	0%	0%	90%	10%	0%	0%	100%	9%	0%	91%
6: 6pm-7pm (6pm-7pm)	12%	88%	0%	1%	91%	8%	0%	0%	100%	14%	0%	86%
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Attachment 3

Turning Movement Volume Report

Report Date: 3/9/2021 9:00:28 AM

From 2/18/2020 to 2/18/2020

Pleasant Grove & Washington

Intersection: 82

	N				S				E				W				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int Total
18/02/20 00:00-01:00	5	8	17	30	8	24	10	42	9	35	2	46	25	97	2	124	242
18/02/20 01:00-02:00	4	7	4	15	8	15	7	30	1	24	3	28	7	41	4	52	125
18/02/20 02:00-03:00	1	6	5	12	3	17	3	23	3	20	2	25	3	38	0	41	101
18/02/20 03:00-04:00	3	9	8	20	0	7	4	11	4	44	3	51	4	18	2	24	106
18/02/20 04:00-05:00	6	29	17	52	6	15	4	25	16	83	9	108	5	38	5	48	233
18/02/20 05:00-06:00	21	78	41	140	10	47	27	84	50	227	12	289	13	83	7	103	616
18/02/20 06:00-07:00	50	178	68	296	23	161	67	251	98	567	65	730	68	297	19	384	1661
18/02/20 07:00-08:00	122	291	190	603	38	369	121	528	118	1275	304	1697	124	694	27	845	3673
18/02/20 08:00-09:00	157	426	239	822	90	341	154	585	206	1500	166	1872	168	744	81	993	4272
18/02/20 09:00-10:00	164	283	191	638	82	326	141	549	118	1389	144	1651	142	744	57	943	3781
18/02/20 10:00-11:00	132	194	216	542	102	229	109	440	103	1274	122	1499	168	859	59	1086	3567
18/02/20 11:00-12:00	162	203	242	607	144	241	130	515	75	1319	138	1532	195	1143	44	1382	4036
18/02/20 12:00-13:00	193	277	261	731	151	285	143	579	139	1288	145	1572	235	1308	74	1617	4499
18/02/20 13:00-14:00	194	235	207	636	116	306	167	589	105	1269	143	1517	239	1354	51	1644	4386
18/02/20 14:00-15:00	261	323	252	836	135	373	212	720	159	1207	157	1523	245	1322	51	1618	4697
18/02/20 15:00-16:00	234	386	283	903	128	535	257	920	159	1368	175	1702	305	1423	65	1793	5318
18/02/20 16:00-	246	379	284	909	152	566	218	936	151	1459	172	1782	298	1625	41	1964	5591

Attachment 3

Turning Movement Volume Report

Report Date: 3/9/2021 9:00:28 AM

From 2/18/2020 to 2/18/2020

Pleasant Grove & Washington

Intersection: 82

	N				S				E				W				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int Total
17:00																	
18/02/20 17:00-18:00	281	422	324	1027	135	572	244	951	129	1426	203	1758	353	1713	44	2110	5846
18/02/20 18:00-19:00	207	335	278	820	94	363	142	599	107	1221	139	1467	264	1540	77	1881	4767
18/02/20 19:00-20:00	134	175	173	482	76	201	89	366	78	804	70	952	196	1171	27	1394	3194
18/02/20 20:00-21:00	78	131	117	326	50	158	64	272	70	465	32	567	165	919	20	1104	2269
18/02/20 21:00-22:00	70	103	72	245	41	119	59	219	41	308	26	375	122	648	5	775	1614
18/02/20 22:00-23:00	28	52	47	127	18	57	39	114	25	212	12	249	75	342	2	419	909
18/02/20 23:00-00:00	17	30	17	64	10	58	26	94	11	99	7	117	42	209	9	260	535
Summary	2770	4560	3553	10883	1620	5385	2437	9442	1975	18883	2251	23109	3461	18370	773	22604	66038

Attachment 3

Turning Movement Volume Report

Report Date: 3/9/2021 9:01:01 AM

From 2/19/2020 to 2/19/2020

Pleasant Grove & Washington

Intersection: 82

	N				S				E				W				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int Total
19/02/20 00:00-01:00	4	11	13	28	6	31	13	50	9	39	4	52	17	86	2	105	235
19/02/20 01:00-02:00	6	11	11	28	3	24	8	35	3	28	1	32	10	45	1	56	151
19/02/20 02:00-03:00	1	7	6	14	3	9	4	16	3	25	2	30	5	41	1	47	107
19/02/20 03:00-04:00	7	6	7	20	1	5	4	10	8	47	2	57	7	23	2	32	119
19/02/20 04:00-05:00	9	28	15	52	2	16	9	27	20	90	1	111	10	26	2	38	228
19/02/20 05:00-06:00	20	70	41	131	7	57	22	86	56	245	8	309	14	91	7	112	638
19/02/20 06:00-07:00	50	164	79	293	24	144	59	227	69	593	57	719	63	289	22	374	1613
19/02/20 07:00-08:00	123	324	163	610	41	364	145	550	122	1270	320	1712	133	713	27	873	3745
19/02/20 08:00-09:00	166	468	230	864	90	340	148	578	226	1496	193	1915	175	746	83	1004	4361
19/02/20 09:00-10:00	153	288	208	649	110	313	126	549	115	1387	152	1654	149	751	68	968	3820
19/02/20 10:00-11:00	135	200	206	541	109	229	96	434	86	1292	131	1509	175	927	46	1148	3632
19/02/20 11:00-12:00	159	232	250	641	145	289	121	555	76	1329	160	1565	187	1133	55	1375	4136
19/02/20 12:00-13:00	182	219	252	653	141	302	130	573	114	1401	151	1666	208	1241	60	1509	4401
19/02/20 13:00-14:00	182	251	263	696	105	284	166	555	115	1192	127	1434	233	1371	57	1661	4346
19/02/20 14:00-15:00	192	278	260	730	118	386	187	691	152	1189	149	1490	277	1418	50	1745	4656
19/02/20 15:00-16:00	233	467	294	994	175	579	261	1015	165	1409	191	1765	308	1439	65	1812	5586
19/02/20 16:00-	248	422	308	978	145	561	257	963	143	1365	160	1668	283	1638	47	1968	5577

Attachment 3

Turning Movement Volume Report

Report Date: 3/9/2021 9:01:01 AM

From 2/19/2020 to 2/19/2020

Pleasant Grove & Washington

Intersection: 82

	N				S				E				W				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int Total
17:00																	
19/02/20 17:00-18:00	260	442	336	1038	130	665	254	1049	159	1469	200	1828	334	1774	52	2160	6075
19/02/20 18:00-19:00	224	338	281	843	112	417	157	686	131	1280	156	1567	306	1583	52	1941	5037
19/02/20 19:00-20:00	133	214	166	513	70	193	89	352	77	856	74	1007	206	1213	33	1452	3324
19/02/20 20:00-21:00	122	162	114	398	57	150	64	271	48	576	51	675	145	931	22	1098	2442
19/02/20 21:00-22:00	61	120	81	262	72	128	54	254	32	305	28	365	127	796	24	947	1828
19/02/20 22:00-23:00	31	63	48	142	24	76	34	134	31	196	12	239	58	353	3	414	929
19/02/20 23:00-00:00	18	20	20	58	15	47	31	93	19	96	12	127	42	209	7	258	536
Summary	2719	4805	3652	11176	1705	5609	2439	9753	1979	19175	2342	23496	3472	18837	788	23097	67522

Attachment 3

Turning Movement Volume Report

Report Date: 3/9/2021 9:01:17 AM

From 2/20/2020 to 2/20/2020

Pleasant Grove & Washington

Intersection: 82

	N				S				E				W				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int Total
20/02/20 00:00-01:00	3	20	15	38	7	33	11	51	8	44	7	59	19	110	2	131	279
20/02/20 01:00-02:00	6	10	6	22	7	20	7	34	3	32	3	38	15	53	3	71	165
20/02/20 02:00-03:00	2	14	11	27	8	10	5	23	2	18	4	24	4	37	0	41	115
20/02/20 03:00-04:00	4	8	12	24	6	9	3	18	4	44	1	49	6	29	6	41	132
20/02/20 04:00-05:00	7	30	17	54	4	10	6	20	21	88	4	113	4	33	1	38	225
20/02/20 05:00-06:00	18	74	32	124	13	47	20	80	60	216	11	287	15	93	8	116	607
20/02/20 06:00-07:00	50	161	81	292	14	153	57	224	87	584	65	736	57	308	19	384	1636
20/02/20 07:00-08:00	125	305	166	596	39	344	124	507	108	1241	328	1677	138	659	36	833	3613
20/02/20 08:00-09:00	172	478	239	889	85	369	172	626	197	1517	194	1908	166	737	58	961	4384
20/02/20 09:00-10:00	137	269	196	602	101	314	134	549	147	1378	152	1677	150	723	62	935	3763
20/02/20 10:00-11:00	138	203	235	576	124	236	86	446	98	1276	125	1499	160	873	53	1086	3607
20/02/20 11:00-12:00	174	251	271	696	135	268	113	516	84	1424	143	1651	223	1148	51	1422	4285
20/02/20 12:00-13:00	193	238	279	710	136	278	143	557	111	1332	161	1604	252	1315	77	1644	4515
20/02/20 13:00-14:00	205	255	240	700	135	294	157	586	121	1311	169	1601	262	1350	65	1677	4564
20/02/20 14:00-15:00	198	300	247	745	122	437	186	745	122	1219	164	1505	298	1460	54	1812	4807
20/02/20 15:00-16:00	259	432	337	1028	148	538	245	931	148	1359	178	1685	291	1538	71	1900	5544
20/02/20 16:00-	253	367	315	935	168	547	247	962	133	1444	192	1769	320	1672	57	2049	5715

Attachment 3

Turning Movement Volume Report

Report Date: 3/9/2021 9:01:17 AM

From 2/20/2020 to 2/20/2020

Pleasant Grove & Washington

Intersection: 82

	N				S				E				W				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int Total
17:00																	
20/02/20 17:00-18:00	268	416	307	991	132	678	220	1030	140	1533	185	1858	331	1715	42	2088	5967
20/02/20 18:00-19:00	224	351	296	871	90	370	156	616	142	1310	133	1585	295	1593	49	1937	5009
20/02/20 19:00-20:00	145	198	186	529	62	196	73	331	77	864	89	1030	230	1217	28	1475	3365
20/02/20 20:00-21:00	103	134	114	351	54	148	71	273	58	563	40	661	152	964	13	1129	2414
20/02/20 21:00-22:00	77	113	87	277	48	138	51	237	46	340	35	421	124	739	10	873	1808
20/02/20 22:00-23:00	29	46	36	111	20	86	37	143	42	252	19	313	93	419	5	517	1084
20/02/20 23:00-00:00	13	29	26	68	11	60	30	101	12	101	16	129	35	235	2	272	570
Summary	2803	4702	3751	11256	1669	5583	2354	9606	1971	19490	2418	23879	3640	19020	772	23432	68173

Kimley»Horn

Attachment B

Analysis Worksheets

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	340	0	0	170
Future Vol, veh/h	0	0	340	0	0	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	370	0	0	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	555	370	0	0	370	0
Stage 1	370	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	493	676	-	-	1189	-
Stage 1	699	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	493	676	-	-	1189	-
Mov Cap-2 Maneuver	493	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	847	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1189	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	340	0	0	170
Future Vol, veh/h	0	0	340	0	0	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	370	0	0	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	555	370	0	0	370	0
Stage 1	370	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	493	676	-	-	1189	-
Stage 1	699	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	493	676	-	-	1189	-
Mov Cap-2 Maneuver	493	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	847	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1189	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	270	10	70	240	100	100
Future Vol, veh/h	270	10	70	240	100	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	220
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	11	76	261	109	109

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	522	109	218	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	515	945	1352	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	486	945	1352	-	-	-
Mov Cap-2 Maneuver	486	-	-	-	-	-
Stage 1	865	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.2	1.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1352	-	495	-	-
HCM Lane V/C Ratio	0.056	-	0.615	-	-
HCM Control Delay (s)	7.8	-	23.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	4.1	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	170	210	840	410	40
Future Vol, veh/h	40	170	210	840	410	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	245	0	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	185	228	913	446	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1381	245	489	0	-	0
Stage 1	468	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	135	755	1070	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	106	755	1070	-	-	-
Mov Cap-2 Maneuver	106	-	-	-	-	-
Stage 1	470	-	-	-	-	-
Stage 2	352	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.7	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1070	-	106	755	-	-
HCM Lane V/C Ratio	0.213	-	0.41	0.245	-	-
HCM Control Delay (s)	9.3	-	60.8	11.3	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	1.7	1	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	200	1680	10	0	570	140	0	0	10	0	0	160
Future Vol, veh/h	200	1680	10	0	570	140	0	0	10	0	0	160
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	50	-	-	200	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	217	1826	11	0	620	152	0	0	11	0	0	174

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	772	0	0	-	-	0	-	-	913	-	-	310
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	504	-	-	0	-	-	0	0	237	0	0	585
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	504	-	-	-	-	-	-	-	237	-	-	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	20.9	13.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	237	504	-	-	-	-	585
HCM Lane V/C Ratio	0.046	0.431	-	-	-	-	0.297
HCM Control Delay (s)	20.9	17.5	-	-	-	-	13.7
HCM Lane LOS	C	C	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	2.1	-	-	-	-	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	217	1652	217	185	804	65	196	522	261	98	402	196
v/c Ratio	0.64	0.82	0.29	0.31	0.33	0.04	0.56	0.64	0.16	0.45	0.59	0.42
Control Delay	60.7	37.3	7.2	44.8	21.4	0.1	45.7	34.9	0.1	60.0	47.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	37.3	7.2	44.8	21.4	0.1	45.7	34.9	0.1	60.0	47.7	8.5
Queue Length 50th (ft)	85	418	17	64	141	0	70	155	0	38	147	0
Queue Length 95th (ft)	122	#546	74	100	197	0	m81	m186	m0	65	200	62
Internal Link Dist (ft)		314			367			1030			326	
Turn Bay Length (ft)	225			275		275	250		250	250		250
Base Capacity (vph)	457	2019	738	600	2407	1583	457	833	1583	457	737	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.82	0.29	0.31	0.33	0.04	0.43	0.63	0.16	0.21	0.55	0.40

Intersection Summary

Description: Pleasant Grove & Washington

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1520	200	170	740	60	180	480	240	90	370	180
Future Volume (veh/h)	200	1520	200	170	740	60	180	480	240	90	370	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	217	1652	217	185	804	0	196	522	0	98	402	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	1787	555	883	2681		257	772		151	592	264
Arrive On Green	0.08	0.35	0.35	0.26	0.53	0.00	0.07	0.22	0.00	0.04	0.17	0.17
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	217	1652	217	185	804	0	196	522	0	98	402	196
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	7.4	37.3	12.4	5.1	10.6	0.0	6.7	16.2	0.0	3.3	12.8	10.9
Cycle Q Clear(g_c), s	7.4	37.3	12.4	5.1	10.6	0.0	6.7	16.2	0.0	3.3	12.8	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	1787	555	883	2681		257	772		151	592	264
V/C Ratio(X)	0.78	0.92	0.39	0.21	0.30		0.76	0.68		0.65	0.68	0.74
Avail Cap(c_a), veh/h	461	1787	555	883	2681		461	772		461	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.51	0.51	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	37.5	29.4	35.1	16.1	0.0	54.5	43.1	0.0	56.5	47.0	28.6
Incr Delay (d2), s/veh	1.8	9.6	2.1	0.0	0.3	0.0	0.9	1.4	0.0	1.7	2.5	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	16.2	4.8	2.1	3.9	0.0	2.9	7.0	0.0	1.4	5.6	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	47.1	31.4	35.2	16.3	0.0	55.4	44.5	0.0	58.2	49.5	37.1
LnGrp LOS	E	D	C	D	B		E	D		E	D	D
Approach Vol, veh/h		2086			989	A		718	A		696	
Approach Delay, s/veh		46.4			19.9			47.5			47.2	
Approach LOS		D			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	30.1	34.7	46.0	15.3	24.0	13.7	67.0
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0
Max Green Setting (Gmax), s	16.0	22.6	19.0	40.0	16.0	* 23	16.0	45.0
Max Q Clear Time (g_c+I1), s	5.3	18.2	7.1	39.3	8.7	14.8	9.4	12.6
Green Ext Time (p_c), s	0.1	2.6	0.3	0.7	0.3	2.8	0.3	16.8

Intersection Summary	
HCM 6th Ctrl Delay	40.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	410	0	0	370
Future Vol, veh/h	0	0	410	0	0	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	446	0	0	402

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	848	446	0	0	446	0
Stage 1	446	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	332	612	-	-	1114	-
Stage 1	645	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	332	612	-	-	1114	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1114	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	410	0	0	370
Future Vol, veh/h	0	0	410	0	0	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	446	0	0	402

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	848	446	0	0	446	0
Stage 1	446	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	332	612	-	-	1114	-
Stage 1	645	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	332	612	-	-	1114	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1114	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	13.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	250	90	60	220	310	310
Future Vol, veh/h	250	90	60	220	310	310
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	220
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	272	98	65	239	337	337

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	706	337	674	0	-	0
Stage 1	337	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	402	705	917	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	373	705	917	-	-	-
Mov Cap-2 Maneuver	373	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	48.4	2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	917	-	426	-	-
HCM Lane V/C Ratio	0.071	-	0.868	-	-
HCM Control Delay (s)	9.2	-	48.4	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	8.8	-	-

Intersection	
Int Delay, s/veh	11.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	70	340	220	570	620	70
Future Vol, veh/h	70	340	220	570	620	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	245	0	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	370	239	620	674	76

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1500	375	750	0	-	0
Stage 1	712	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	113	623	855	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	623	855	-	-	-
Mov Cap-2 Maneuver	81	-	-	-	-	-
Stage 1	322	-	-	-	-	-
Stage 2	409	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	45.2	3	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	855	-	81	623	-	-
HCM Lane V/C Ratio	0.28	-	0.939	0.593	-	-
HCM Control Delay (s)	10.8	-	173.5	18.8	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	1.1	-	5	3.9	-	-

Intersection	
Int Delay, s/veh	46.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	160	1640	40	0	1620	250	0	0	10	0	0	390
Future Vol, veh/h	160	1640	40	0	1620	250	0	0	10	0	0	390
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	50	-	-	200	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	174	1783	43	0	1761	272	0	0	11	0	0	424

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2033	0	0	-	-	0	-	-	892	-	-	881
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	~ 120	-	-	0	-	-	0	0	245	0	0	~ 249
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 120	-	-	-	-	-	-	-	245	-	-	~ 249
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.8	0	20.4	$ 367.4
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	245	~ 120	-	-	-	-	249
HCM Lane V/C Ratio	0.044	1.449	-	-	-	-	1.702
HCM Control Delay (s)	20.4	$ 308.7	-	-	-	-	$ 367.4
HCM Lane LOS	C	F	-	-	-	-	F
HCM 95th %tile Q(veh)	0.1	12.1	-	-	-	-	27.6

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	1598	217	370	1935	65	283	489	370	141	728	283
v/c Ratio	0.59	0.85	0.31	0.62	0.83	0.04	0.72	0.56	0.23	0.54	0.99	0.52
Control Delay	60.6	40.6	6.9	50.8	33.2	0.1	48.8	32.4	0.2	60.6	77.9	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	40.6	6.9	50.8	33.2	0.1	48.8	32.4	0.2	60.6	77.9	9.7
Queue Length 50th (ft)	68	416	14	138	473	0	103	141	0	55	298	9
Queue Length 95th (ft)	102	494	70	189	#589	0	m123	m181	m0	87	#428	87
Internal Link Dist (ft)		314			367			1030			326	
Turn Bay Length (ft)	225			275		275	250		250	250		250
Base Capacity (vph)	457	1876	702	600	2327	1583	457	870	1583	457	737	541
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.85	0.31	0.62	0.83	0.04	0.62	0.56	0.23	0.31	0.99	0.52

Intersection Summary

Description: Pleasant Grove & Washington

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	1470	200	340	1780	60	260	450	340	130	670	260
Future Volume (veh/h)	160	1470	200	340	1780	60	260	450	340	130	670	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	1598	217	370	1935	0	283	489	0	141	728	283
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	1787	555	653	2405		344	960		200	740	330
Arrive On Green	0.07	0.35	0.35	0.19	0.47	0.00	0.10	0.27	0.00	0.06	0.21	0.21
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	174	1598	217	370	1935	0	283	489	0	141	728	283
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.9	35.5	12.4	11.7	38.7	0.0	9.6	14.0	0.0	4.8	24.5	16.1
Cycle Q Clear(g_c), s	5.9	35.5	12.4	11.7	38.7	0.0	9.6	14.0	0.0	4.8	24.5	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	1787	555	653	2405		344	960		200	740	330
V/C Ratio(X)	0.74	0.89	0.39	0.57	0.80		0.82	0.51		0.71	0.98	0.86
Avail Cap(c_a), veh/h	461	1787	555	653	2405		461	960		461	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.51	0.51	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	36.9	29.4	44.2	27.0	0.0	53.0	37.1	0.0	55.5	47.3	27.8
Incr Delay (d2), s/veh	1.7	7.4	2.1	0.7	3.0	0.0	3.5	0.4	0.0	1.7	28.9	20.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	15.2	4.8	4.9	15.1	0.0	4.2	5.9	0.0	2.1	13.2	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	44.3	31.4	44.9	30.0	0.0	56.5	37.4	0.0	57.3	76.2	48.0
LnGrp LOS	E	D	C	D	C		E	D		E	E	D
Approach Vol, veh/h		1989			2305	A		772	A		1152	
Approach Delay, s/veh		44.0			32.4			44.4			67.0	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	36.4	26.7	46.0	18.3	29.0	12.1	60.5
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0
Max Green Setting (Gmax), s	16.0	22.6	19.0	40.0	16.0	* 23	16.0	45.0
Max Q Clear Time (g_c+I1), s	6.8	16.0	13.7	37.5	11.6	26.5	7.9	40.7
Green Ext Time (p_c), s	0.2	3.5	0.5	2.4	0.3	0.0	0.2	4.2

Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	19	340	6	11	173
Future Vol, veh/h	4	19	340	6	11	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	21	370	7	12	188

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	586	374	0	0	377	0
Stage 1	374	-	-	-	-	-
Stage 2	212	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	473	672	-	-	1181	-
Stage 1	696	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	468	672	-	-	1181	-
Mov Cap-2 Maneuver	468	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	625	1181	-
HCM Lane V/C Ratio	-	-	0.04	0.01	-
HCM Control Delay (s)	-	-	11	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	8	346	22	3	170
Future Vol, veh/h	9	8	346	22	3	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	9	376	24	3	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	579	388	0	0	400	0
Stage 1	388	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	477	660	-	-	1159	-
Stage 1	686	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	476	660	-	-	1159	-
Mov Cap-2 Maneuver	476	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	548	1159	-
HCM Lane V/C Ratio	-	-	0.034	0.003	-
HCM Control Delay (s)	-	-	11.8	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	272	34	81	240	100	102
Future Vol, veh/h	272	34	81	240	100	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	220
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	296	37	88	261	109	111

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	546	109	220	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	499	945	1349	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	467	945	1349	-	-	-
Mov Cap-2 Maneuver	467	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.9	2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1349	-	495	-	-
HCM Lane V/C Ratio	0.065	-	0.672	-	-
HCM Control Delay (s)	7.9	-	25.9	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	4.9	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	188	215	840	410	47
Future Vol, veh/h	47	188	215	840	410	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	245	0	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	204	234	913	446	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1397	249	497	0	-	0
Stage 1	472	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	132	751	1063	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	103	751	1063	-	-	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	347	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.3	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1063	-	103	751	-	-
HCM Lane V/C Ratio	0.22	-	0.496	0.272	-	-
HCM Control Delay (s)	9.3	-	70.3	11.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	2.2	1.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	207	1680	10	0	570	160	0	0	10	0	0	173
Future Vol, veh/h	207	1680	10	0	570	160	0	0	10	0	0	173
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	50	-	-	200	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	225	1826	11	0	620	174	0	0	11	0	0	188

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	794	0	0	-	-	0	-	-	913	-	-	310
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	492	-	-	0	-	-	0	0	237	0	0	585
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	492	-	-	-	-	-	-	-	237	-	-	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	20.9	14
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	237	492	-	-	-	-	585
HCM Lane V/C Ratio	0.046	0.457	-	-	-	-	0.321
HCM Control Delay (s)	20.9	18.3	-	-	-	-	14
HCM Lane LOS	C	C	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	2.4	-	-	-	-	1.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	217	1652	217	185	822	67	202	526	261	109	412	196
v/c Ratio	0.64	0.83	0.30	0.31	0.34	0.04	0.57	0.64	0.16	0.47	0.60	0.42
Control Delay	60.7	38.0	7.2	44.8	21.8	0.0	45.5	34.7	0.1	60.2	47.7	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	38.0	7.2	44.8	21.8	0.0	45.5	34.7	0.1	60.2	47.7	8.4
Queue Length 50th (ft)	85	421	17	64	146	0	72	157	0	42	151	0
Queue Length 95th (ft)	122	#546	74	100	203	0	m84	m192	m0	71	205	62
Internal Link Dist (ft)		314			367			1030			326	
Turn Bay Length (ft)	225			275		275	250		250	250		250
Base Capacity (vph)	457	1998	732	600	2386	1583	457	836	1583	457	737	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.83	0.30	0.31	0.34	0.04	0.44	0.63	0.16	0.24	0.56	0.40

Intersection Summary

Description: Pleasant Grove & Washington

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1520	200	170	756	62	186	484	240	100	379	180
Future Volume (veh/h)	200	1520	200	170	756	62	186	484	240	100	379	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	217	1652	217	185	822	0	202	526	0	109	412	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	1787	555	868	2659		263	774		164	601	268
Arrive On Green	0.08	0.35	0.35	0.25	0.52	0.00	0.08	0.22	0.00	0.05	0.17	0.17
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	217	1652	217	185	822	0	202	526	0	109	412	196
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	7.4	37.3	12.4	5.1	11.0	0.0	6.9	16.3	0.0	3.7	13.1	10.9
Cycle Q Clear(g_c), s	7.4	37.3	12.4	5.1	11.0	0.0	6.9	16.3	0.0	3.7	13.1	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	1787	555	868	2659		263	774		164	601	268
V/C Ratio(X)	0.78	0.92	0.39	0.21	0.31		0.77	0.68		0.66	0.69	0.73
Avail Cap(c_a), veh/h	461	1787	555	868	2659		461	774		461	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.51	0.51	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	37.5	29.4	35.5	16.4	0.0	54.4	43.1	0.0	56.2	46.8	28.4
Incr Delay (d2), s/veh	1.8	9.6	2.1	0.0	0.3	0.0	0.9	1.4	0.0	1.7	2.7	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	16.2	4.8	2.1	4.1	0.0	3.0	7.1	0.0	1.6	5.7	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	47.1	31.4	35.6	16.7	0.0	55.3	44.5	0.0	57.9	49.5	36.3
LnGrp LOS	E	D	C	D	B		E	D		E	D	D
Approach Vol, veh/h		2086			1007	A		728	A		717	
Approach Delay, s/veh		46.4			20.2			47.5			47.2	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	30.1	34.2	46.0	15.5	24.3	13.7	66.5
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0
Max Green Setting (Gmax), s	16.0	22.6	19.0	40.0	16.0	* 23	16.0	45.0
Max Q Clear Time (g_c+I1), s	5.7	18.3	7.1	39.3	8.9	15.1	9.4	13.0
Green Ext Time (p_c), s	0.1	2.6	0.3	0.7	0.3	2.8	0.3	17.1

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	53	410	15	30	377
Future Vol, veh/h	10	53	410	15	30	377
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	58	446	16	33	410

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	930	454	0	0	462	0
Stage 1	454	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	297	606	-	-	1099	-
Stage 1	640	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	285	606	-	-	1099	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	601	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	514	1099	-
HCM Lane V/C Ratio	-	-	0.133	0.03	-
HCM Control Delay (s)	-	-	13.1	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	22	425	60	7	370
Future Vol, veh/h	26	22	425	60	7	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	24	462	65	8	402

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	913	495	0	0	527	0
Stage 1	495	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	304	575	-	-	1040	-
Stage 1	613	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	301	575	-	-	1040	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	385	1040	-
HCM Lane V/C Ratio	-	-	0.136	0.007	-
HCM Control Delay (s)	-	-	15.8	8.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	33.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	256	160	92	220	310	316
Future Vol, veh/h	256	160	92	220	310	316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	220
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	278	174	100	239	337	343

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	776	337	680	0	-	0
Stage 1	337	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	366	705	912	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	326	705	912	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	105.9	2.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	912	-	411	-	-
HCM Lane V/C Ratio	0.11	-	1.1	-	-
HCM Control Delay (s)	9.4	-	105.9	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0.4	-	15.8	-	-

Intersection	
Int Delay, s/veh	19.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	88	392	234	570	620	88
Future Vol, veh/h	88	392	234	570	620	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	245	0	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	426	254	620	674	96

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1540	385	770	0	-	0
Stage 1	722	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	106	613	840	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 74	613	840	-	-	-
Mov Cap-2 Maneuver	~ 74	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	394	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	74	3.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	840	-	74	613	-	-
HCM Lane V/C Ratio	0.303	-	1.293	0.695	-	-
HCM Control Delay (s)	11.1	-	$ 300.1	23.2	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	1.3	-	7.5	5.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	62.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	179	1640	40	0	1620	306	0	0	10	0	0	426
Future Vol, veh/h	179	1640	40	0	1620	306	0	0	10	0	0	426
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	50	-	-	200	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	195	1783	43	0	1761	333	0	0	11	0	0	463

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2094	0	0	-	-	0	-	-	892	-	-	881
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	~ 112	-	-	0	-	-	0	0	245	0	0	~ 249
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 112	-	-	-	-	-	-	-	245	-	-	~ 249
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	41.6	0	20.4	$ 435.4
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	245	~ 112	-	-	-	-	249
HCM Lane V/C Ratio	0.044	1.737	-	-	-	-	1.86
HCM Control Delay (s)	20.4	$ 432.4	-	-	-	-	$ 435.4
HCM Lane LOS	C	F	-	-	-	-	F
HCM 95th %tile Q(veh)	0.1	15.1	-	-	-	-	32.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	1598	217	370	1985	70	300	500	370	171	757	283
v/c Ratio	0.59	0.86	0.31	0.62	0.86	0.04	0.74	0.59	0.23	0.58	1.03	0.53
Control Delay	60.6	41.3	7.0	50.8	34.8	0.0	49.3	33.4	0.2	60.6	87.0	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	41.3	7.0	50.8	34.8	0.0	49.3	33.4	0.2	60.6	87.0	10.0
Queue Length 50th (ft)	68	419	15	138	498	0	110	148	0	67	~329	11
Queue Length 95th (ft)	102	494	70	189	#649	0	m131	m193	m0	101	#455	90
Internal Link Dist (ft)		314			367			1030			326	
Turn Bay Length (ft)	225			275		275	250		250	250		250
Base Capacity (vph)	457	1860	698	600	2311	1583	457	850	1583	457	737	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.86	0.31	0.62	0.86	0.04	0.66	0.59	0.23	0.37	1.03	0.53

Intersection Summary

Description: Pleasant Grove & Washington

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	1470	200	340	1826	64	276	460	340	157	696	260
Future Volume (veh/h)	160	1470	200	340	1826	64	276	460	340	157	696	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	1598	217	370	1985	0	300	500	0	171	757	283
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	1787	555	636	2381		360	944		231	740	330
Arrive On Green	0.07	0.35	0.35	0.18	0.47	0.00	0.10	0.27	0.00	0.07	0.21	0.21
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	174	1598	217	370	1985	0	300	500	0	171	757	283
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.9	35.5	12.4	11.7	40.7	0.0	10.2	14.4	0.0	5.8	25.0	16.1
Cycle Q Clear(g_c), s	5.9	35.5	12.4	11.7	40.7	0.0	10.2	14.4	0.0	5.8	25.0	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	1787	555	636	2381		360	944		231	740	330
V/C Ratio(X)	0.74	0.89	0.39	0.58	0.83		0.83	0.53		0.74	1.02	0.86
Avail Cap(c_a), veh/h	461	1787	555	636	2381		461	944		461	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.51	0.51	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	36.9	29.4	44.7	28.0	0.0	52.7	37.6	0.0	55.0	47.5	27.8
Incr Delay (d2), s/veh	1.7	7.4	2.1	0.9	3.6	0.0	4.3	0.4	0.0	1.8	38.9	20.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	15.2	4.8	4.9	16.0	0.0	4.5	6.1	0.0	2.5	14.5	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	44.3	31.4	45.6	31.6	0.0	57.0	38.1	0.0	56.7	86.4	48.0
LnGrp LOS	E	D	C	D	C		E	D		E	F	D
Approach Vol, veh/h		1989			2355	A		800	A		1211	
Approach Delay, s/veh		44.0			33.8			45.2			73.2	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	35.9	26.1	46.0	18.9	29.0	12.1	60.0
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0
Max Green Setting (Gmax), s	16.0	22.6	19.0	40.0	16.0	* 23	16.0	45.0
Max Q Clear Time (g_c+I1), s	7.8	16.4	13.7	37.5	12.2	27.0	7.9	42.7
Green Ext Time (p_c), s	0.2	3.4	0.5	2.4	0.3	0.0	0.2	2.2

Intersection Summary	
HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	19	340	6	11	173
Future Vol, veh/h	4	19	340	6	11	173
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	21	370	7	12	188

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	586	374	0	0	377	0
Stage 1	374	-	-	-	-	-
Stage 2	212	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	473	672	-	-	1181	-
Stage 1	696	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	468	672	-	-	1181	-
Mov Cap-2 Maneuver	468	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	625	1181	-
HCM Lane V/C Ratio	-	-	0.04	0.01	-
HCM Control Delay (s)	-	-	11	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	8	346	22	3	170
Future Vol, veh/h	9	8	346	22	3	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	9	376	24	3	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	579	388	0	0	400	0
Stage 1	388	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	477	660	-	-	1159	-
Stage 1	686	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	476	660	-	-	1159	-
Mov Cap-2 Maneuver	476	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	548	1159	-
HCM Lane V/C Ratio	-	-	0.034	0.003	-
HCM Control Delay (s)	-	-	11.8	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	272	34	81	240	100	102
Future Vol, veh/h	272	34	81	240	100	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	200	-	-	220
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	296	37	88	261	109	111

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	546	109	220	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	499	945	1349	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	467	945	1349	-	-	-
Mov Cap-2 Maneuver	467	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.3	2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1349	-	467	945	-	-
HCM Lane V/C Ratio	0.065	-	0.633	0.039	-	-
HCM Control Delay (s)	7.9	-	25.1	9	-	-
HCM Lane LOS	A	-	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	4.3	0.1	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	188	215	840	410	47
Future Vol, veh/h	47	188	215	840	410	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	245	0	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	204	234	913	446	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1397	249	497	0	-	0
Stage 1	472	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	132	751	1063	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	103	751	1063	-	-	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	347	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.3	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1063	-	103	751	-	-
HCM Lane V/C Ratio	0.22	-	0.496	0.272	-	-
HCM Control Delay (s)	9.3	-	70.3	11.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	2.2	1.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	207	1680	10	0	570	160	0	0	10	0	0	173
Future Vol, veh/h	207	1680	10	0	570	160	0	0	10	0	0	173
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	50	-	-	200	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	225	1826	11	0	620	174	0	0	11	0	0	188

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	794	0	0	-	-	0	-	-	913	-	-	310
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	492	-	-	0	-	-	0	0	237	0	0	585
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	492	-	-	-	-	-	-	-	237	-	-	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	20.9	14
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	237	492	-	-	-	-	585
HCM Lane V/C Ratio	0.046	0.457	-	-	-	-	0.321
HCM Control Delay (s)	20.9	18.3	-	-	-	-	14
HCM Lane LOS	C	C	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	2.4	-	-	-	-	1.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	217	1652	217	185	822	67	202	526	261	109	412	196
v/c Ratio	0.64	0.83	0.30	0.31	0.34	0.04	0.57	0.64	0.16	0.47	0.60	0.42
Control Delay	60.7	38.0	7.2	44.8	21.8	0.0	45.5	34.7	0.1	60.2	47.7	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	38.0	7.2	44.8	21.8	0.0	45.5	34.7	0.1	60.2	47.7	8.4
Queue Length 50th (ft)	85	421	17	64	146	0	72	157	0	42	151	0
Queue Length 95th (ft)	122	#546	74	100	203	0	m84	m192	m0	71	205	62
Internal Link Dist (ft)		314			367			1030			326	
Turn Bay Length (ft)	225			275		275	250		250	250		250
Base Capacity (vph)	457	1998	732	600	2386	1583	457	836	1583	457	737	484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.83	0.30	0.31	0.34	0.04	0.44	0.63	0.16	0.24	0.56	0.40

Intersection Summary

Description: Pleasant Grove & Washington

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1520	200	170	756	62	186	484	240	100	379	180
Future Volume (veh/h)	200	1520	200	170	756	62	186	484	240	100	379	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	217	1652	217	185	822	0	202	526	0	109	412	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	1787	555	868	2659		263	774		164	601	268
Arrive On Green	0.08	0.35	0.35	0.25	0.52	0.00	0.08	0.22	0.00	0.05	0.17	0.17
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	217	1652	217	185	822	0	202	526	0	109	412	196
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	7.4	37.3	12.4	5.1	11.0	0.0	6.9	16.3	0.0	3.7	13.1	10.9
Cycle Q Clear(g_c), s	7.4	37.3	12.4	5.1	11.0	0.0	6.9	16.3	0.0	3.7	13.1	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	1787	555	868	2659		263	774		164	601	268
V/C Ratio(X)	0.78	0.92	0.39	0.21	0.31		0.77	0.68		0.66	0.69	0.73
Avail Cap(c_a), veh/h	461	1787	555	868	2659		461	774		461	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.51	0.51	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	37.5	29.4	35.5	16.4	0.0	54.4	43.1	0.0	56.2	46.8	28.4
Incr Delay (d2), s/veh	1.8	9.6	2.1	0.0	0.3	0.0	0.9	1.4	0.0	1.7	2.7	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	16.2	4.8	2.1	4.1	0.0	3.0	7.1	0.0	1.6	5.7	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	47.1	31.4	35.6	16.7	0.0	55.3	44.5	0.0	57.9	49.5	36.3
LnGrp LOS	E	D	C	D	B		E	D		E	D	D
Approach Vol, veh/h		2086			1007	A		728	A		717	
Approach Delay, s/veh		46.4			20.2			47.5			47.2	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	30.1	34.2	46.0	15.5	24.3	13.7	66.5
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0
Max Green Setting (Gmax), s	16.0	22.6	19.0	40.0	16.0	* 23	16.0	45.0
Max Q Clear Time (g_c+I1), s	5.7	18.3	7.1	39.3	8.9	15.1	9.4	13.0
Green Ext Time (p_c), s	0.1	2.6	0.3	0.7	0.3	2.8	0.3	17.1

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	53	410	15	30	377
Future Vol, veh/h	10	53	410	15	30	377
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	58	446	16	33	410

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	930	454	0	0	462	0
Stage 1	454	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	297	606	-	-	1099	-
Stage 1	640	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	285	606	-	-	1099	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	601	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	514	1099	-
HCM Lane V/C Ratio	-	-	0.133	0.03	-
HCM Control Delay (s)	-	-	13.1	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	22	425	60	7	370
Future Vol, veh/h	26	22	425	60	7	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	24	462	65	8	402

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	913	495	0	0	527	0
Stage 1	495	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	304	575	-	-	1040	-
Stage 1	613	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	301	575	-	-	1040	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	385	1040	-
HCM Lane V/C Ratio	-	-	0.136	0.007	-
HCM Control Delay (s)	-	-	15.8	8.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	12.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	256	160	92	220	310	316
Future Vol, veh/h	256	160	92	220	310	316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	200	-	-	220
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	278	174	100	239	337	343

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	776	337	680	0	-	0
Stage 1	337	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	366	705	912	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	326	705	912	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	39.1	2.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	912	-	326	705	-	-
HCM Lane V/C Ratio	0.11	-	0.854	0.247	-	-
HCM Control Delay (s)	9.4	-	56.1	11.8	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.4	-	7.7	1	-	-

Intersection	
Int Delay, s/veh	19.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	88	392	234	570	620	88
Future Vol, veh/h	88	392	234	570	620	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	245	0	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	426	254	620	674	96

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1540	385	770	0	-	0
Stage 1	722	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	106	613	840	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 74	613	840	-	-	-
Mov Cap-2 Maneuver	~ 74	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	394	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	74	3.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	840	-	74	613	-	-
HCM Lane V/C Ratio	0.303	-	1.293	0.695	-	-
HCM Control Delay (s)	11.1	-	$ 300.1	23.2	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	1.3	-	7.5	5.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	62.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	179	1640	40	0	1620	306	0	0	10	0	0	426
Future Vol, veh/h	179	1640	40	0	1620	306	0	0	10	0	0	426
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	50	-	-	200	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	195	1783	43	0	1761	333	0	0	11	0	0	463

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2094	0	0	-	-	0	-	-	892	-	-	881
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	~ 112	-	-	0	-	-	0	0	245	0	0	~ 249
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	~ 112	-	-	-	-	-	-	-	245	-	-	~ 249
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	41.6	0	20.4	$ 435.4
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	245	~ 112	-	-	-	-	249
HCM Lane V/C Ratio	0.044	1.737	-	-	-	-	1.86
HCM Control Delay (s)	20.4	$ 432.4	-	-	-	-	$ 435.4
HCM Lane LOS	C	F	-	-	-	-	F
HCM 95th %tile Q(veh)	0.1	15.1	-	-	-	-	32.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	1598	217	370	1985	70	300	500	370	171	757	283
v/c Ratio	0.59	0.86	0.31	0.62	0.86	0.04	0.74	0.59	0.23	0.58	1.03	0.53
Control Delay	60.6	41.3	7.0	50.8	34.8	0.0	49.3	33.4	0.2	60.6	87.0	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	41.3	7.0	50.8	34.8	0.0	49.3	33.4	0.2	60.6	87.0	10.0
Queue Length 50th (ft)	68	419	15	138	498	0	110	148	0	67	~329	11
Queue Length 95th (ft)	102	494	70	189	#649	0	m131	m193	m0	101	#455	90
Internal Link Dist (ft)		314			367			1030			326	
Turn Bay Length (ft)	225			275		275	250		250	250		250
Base Capacity (vph)	457	1860	698	600	2311	1583	457	850	1583	457	737	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.86	0.31	0.62	0.86	0.04	0.66	0.59	0.23	0.37	1.03	0.53

Intersection Summary

Description: Pleasant Grove & Washington

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	1470	200	340	1826	64	276	460	340	157	696	260
Future Volume (veh/h)	160	1470	200	340	1826	64	276	460	340	157	696	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	1598	217	370	1985	0	300	500	0	171	757	283
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	1787	555	636	2381		360	944		231	740	330
Arrive On Green	0.07	0.35	0.35	0.18	0.47	0.00	0.10	0.27	0.00	0.07	0.21	0.21
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	174	1598	217	370	1985	0	300	500	0	171	757	283
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.9	35.5	12.4	11.7	40.7	0.0	10.2	14.4	0.0	5.8	25.0	16.1
Cycle Q Clear(g_c), s	5.9	35.5	12.4	11.7	40.7	0.0	10.2	14.4	0.0	5.8	25.0	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	1787	555	636	2381		360	944		231	740	330
V/C Ratio(X)	0.74	0.89	0.39	0.58	0.83		0.83	0.53		0.74	1.02	0.86
Avail Cap(c_a), veh/h	461	1787	555	636	2381		461	944		461	740	330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.51	0.51	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	36.9	29.4	44.7	28.0	0.0	52.7	37.6	0.0	55.0	47.5	27.8
Incr Delay (d2), s/veh	1.7	7.4	2.1	0.9	3.6	0.0	4.3	0.4	0.0	1.8	38.9	20.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	15.2	4.8	4.9	16.0	0.0	4.5	6.1	0.0	2.5	14.5	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	44.3	31.4	45.6	31.6	0.0	57.0	38.1	0.0	56.7	86.4	48.0
LnGrp LOS	E	D	C	D	C		E	D		E	F	D
Approach Vol, veh/h		1989			2355	A		800	A		1211	
Approach Delay, s/veh		44.0			33.8			45.2			73.2	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	35.9	26.1	46.0	18.9	29.0	12.1	60.0
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0
Max Green Setting (Gmax), s	16.0	22.6	19.0	40.0	16.0	* 23	16.0	45.0
Max Q Clear Time (g_c+I1), s	7.8	16.4	13.7	37.5	12.2	27.0	7.9	42.7
Green Ext Time (p_c), s	0.2	3.4	0.5	2.4	0.3	0.0	0.2	2.2

Intersection Summary	
HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Summary of All Intervals

Run Number	1	10	2	3	4	5	6
Start Time	3:50	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	7312	7269	7394	7472	7314	7432	7365
Vehs Exited	7236	7236	7401	7313	7236	7363	7288
Starting Vehs	276	254	261	226	267	279	276
Ending Vehs	352	287	254	385	345	348	353
Travel Distance (mi)	6010	6030	6121	6111	6046	6116	6052
Travel Time (hr)	298.2	282.6	279.7	311.0	315.6	300.9	308.1
Total Delay (hr)	153.3	137.2	132.1	163.9	170.0	153.3	161.9
Total Stops	8641	8441	8299	8778	8995	8781	8955
Fuel Used (gal)	243.9	240.7	244.1	249.5	248.4	248.9	247.9

Summary of All Intervals

Run Number	7	8	9	Avg
Start Time	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	5	5	5	5
# of Recorded Intervals	4	4	4	4
Vehs Entered	7347	7261	7325	7348
Vehs Exited	7260	7314	7283	7294
Starting Vehs	283	354	246	268
Ending Vehs	370	301	288	327
Travel Distance (mi)	6042	6021	6028	6058
Travel Time (hr)	323.8	282.8	289.6	299.2
Total Delay (hr)	178.0	137.4	144.2	153.1
Total Stops	9161	8538	8612	8717
Fuel Used (gal)	249.9	242.1	244.4	246.0

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1866	1797	1926	1909	1846	1817	1888
Vehs Exited	1845	1766	1901	1844	1801	1838	1887
Starting Vehs	276	254	261	226	267	279	276
Ending Vehs	297	285	286	291	312	258	277
Travel Distance (mi)	1543	1486	1567	1560	1506	1485	1572
Travel Time (hr)	68.6	70.1	69.1	67.0	71.9	64.4	72.8
Total Delay (hr)	31.3	34.2	31.4	29.3	35.7	28.6	34.7
Total Stops	2062	2093	2049	1985	2199	1929	2210
Fuel Used (gal)	60.8	59.3	61.7	61.3	60.5	58.9	62.8

Interval #1 Information

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1770	1774	1818	1841
Vehs Exited	1792	1896	1776	1836
Starting Vehs	283	354	246	268
Ending Vehs	261	232	288	274
Travel Distance (mi)	1467	1520	1484	1519
Travel Time (hr)	66.6	68.2	65.3	68.4
Total Delay (hr)	31.2	31.4	29.4	31.7
Total Stops	2016	2037	1948	2053
Fuel Used (gal)	58.4	61.1	58.7	60.4

Interval #2 Information

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1791	1805	1814	1831	1779	1869	1859
Vehs Exited	1798	1780	1821	1808	1771	1850	1821
Starting Vehs	297	285	286	291	312	258	277
Ending Vehs	290	310	279	314	320	277	315
Travel Distance (mi)	1489	1488	1513	1500	1473	1549	1529
Travel Time (hr)	71.0	70.8	70.8	69.3	74.6	75.6	73.7
Total Delay (hr)	35.0	34.9	34.3	33.0	39.1	38.2	36.8
Total Stops	2087	2102	2097	2067	2087	2185	2232
Fuel Used (gal)	60.3	59.4	61.0	60.3	60.4	63.1	61.9

Interval #2 Information

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1913	1835	1807	1829
Vehs Exited	1804	1753	1809	1801
Starting Vehs	261	232	288	274
Ending Vehs	370	314	286	304
Travel Distance (mi)	1538	1486	1496	1506
Travel Time (hr)	84.5	66.8	73.9	73.1
Total Delay (hr)	47.2	31.0	37.9	36.7
Total Stops	2495	2028	2166	2154
Fuel Used (gal)	64.2	58.6	61.2	61.0

Interval #3 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1886	1825	1825	1891	1826	1868	1819
Vehs Exited	1865	1854	1810	1873	1854	1849	1815
Starting Vehs	290	310	279	314	320	277	315
Ending Vehs	311	281	294	332	292	296	319
Travel Distance (mi)	1529	1532	1494	1547	1526	1534	1473
Travel Time (hr)	79.2	71.2	68.7	85.6	79.8	74.9	74.8
Total Delay (hr)	42.4	34.5	32.8	48.5	42.9	37.9	39.3
Total Stops	2353	2124	2056	2384	2270	2232	2176
Fuel Used (gal)	62.6	61.0	59.3	64.4	62.6	62.1	60.5

Interval #3 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1809	1855	1856	1846
Vehs Exited	1878	1914	1846	1857
Starting Vehs	370	314	286	304
Ending Vehs	301	255	296	295
Travel Distance (mi)	1533	1556	1520	1524
Travel Time (hr)	86.2	76.5	71.2	76.8
Total Delay (hr)	49.3	38.8	34.7	40.1
Total Stops	2342	2302	2134	2239
Fuel Used (gal)	63.8	63.4	61.0	62.1

Interval #4 Information Recording

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	10	2	3	4	5	6
Vehs Entered	1769	1842	1829	1841	1863	1878	1799
Vehs Exited	1728	1836	1869	1788	1810	1826	1765
Starting Vehs	311	281	294	332	292	296	319
Ending Vehs	352	287	254	385	345	348	353
Travel Distance (mi)	1448	1524	1547	1504	1541	1548	1478
Travel Time (hr)	79.4	70.5	71.0	89.1	89.4	85.9	86.8
Total Delay (hr)	44.6	33.7	33.6	53.2	52.3	48.6	51.1
Total Stops	2139	2122	2097	2342	2439	2435	2337
Fuel Used (gal)	60.2	60.9	62.0	63.5	64.9	64.9	62.7

Interval #4 Information Recording

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	7	8	9	Avg
Vehs Entered	1855	1797	1844	1831
Vehs Exited	1786	1751	1852	1803
Starting Vehs	301	255	296	295
Ending Vehs	370	301	288	327
Travel Distance (mi)	1504	1460	1528	1508
Travel Time (hr)	86.6	71.3	79.1	80.9
Total Delay (hr)	50.3	36.2	42.3	44.6
Total Stops	2308	2171	2364	2276
Fuel Used (gal)	63.5	59.0	63.5	62.5

5: Pleasant Grove & Galilee Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	2.3	2.0	0.0	2.8	0.5	0.1	0.7	8.3
Total Del/Veh (s)	45.7	3.9	1.1	5.1	4.4	41.6	5.6	6.2
Stop Delay (hr)	2.1	0.3	0.0	0.1	0.0	0.1	0.4	3.0
Stop Del/Veh (s)	42.4	0.5	0.2	0.1	0.1	41.5	3.0	2.2

6: Washington & Pleasant Grove Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.8	0.9
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.9	15.2	12.5
Total Delay (hr)	2.7	16.8	0.7	4.9	18.7	0.1	3.7	4.5	0.6	4.2	23.0	3.5
Total Del/Veh (s)	61.7	41.0	12.2	49.5	36.7	5.8	47.6	34.6	6.4	96.7	119.8	50.1
Stop Delay (hr)	2.5	13.0	0.6	4.3	13.4	0.0	3.2	3.4	0.0	3.9	20.7	3.2
Stop Del/Veh (s)	56.8	31.7	11.8	43.7	26.3	1.4	40.8	25.8	0.1	90.3	108.1	45.8

6: Washington & Pleasant Grove Performance by movement

Movement	All
Denied Delay (hr)	4.2
Denied Del/Veh (s)	2.4
Total Delay (hr)	83.4
Total Del/Veh (s)	47.8
Stop Delay (hr)	68.3
Stop Del/Veh (s)	39.1

Total Zone Performance

Denied Delay (hr)	4.2
Denied Del/Veh (s)	105.5
Total Delay (hr)	91.8
Total Del/Veh (s)	2730.6
Stop Delay (hr)	71.3
Stop Del/Veh (s)	2119.9

Intersection: 5: Pleasant Grove & Galilee

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	T	R	T	T	T	R	R	R
Maximum Queue (ft)	236	197	175	151	60	18	20	27	32	41	106
Average Queue (ft)	114	21	22	22	2	1	1	1	4	11	60
95th Queue (ft)	205	99	99	97	22	10	11	13	19	36	89
Link Distance (ft)		434	434	434		301	301	301		142	1290
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	250				50				200		
Storage Blk Time (%)	1	0		3	0						
Queuing Penalty (veh)	4	0		1	0						

Intersection: 6: Washington & Pleasant Grove

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	121	250	323	329	327	138	205	299	420	423	443	300
Average Queue (ft)	61	119	257	267	269	54	110	181	294	304	325	53
95th Queue (ft)	107	261	335	336	337	106	180	330	413	418	443	242
Link Distance (ft)			301	301	301	301			362	362	362	
Upstream Blk Time (%)			3	4	5				3	4	6	
Queuing Penalty (veh)			16	19	22				0	0	0	
Storage Bay Dist (ft)	225	225					275	275				275
Storage Blk Time (%)		0	14					0	9		17	0
Queuing Penalty (veh)		0	22					0	30		11	0

Intersection: 6: Washington & Pleasant Grove

Movement	B75	B75	B75	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	T	L	L	T	T	L	L	T	T	R
Maximum Queue (ft)	44	42	92	177	186	206	181	127	275	404	409	275
Average Queue (ft)	4	4	8	76	106	114	101	62	210	363	365	250
95th Queue (ft)	38	35	51	138	163	178	162	110	367	449	454	346
Link Distance (ft)	2188	2188	2188			998	998			313	313	
Upstream Blk Time (%)										53	54	
Queuing Penalty (veh)										270	271	
Storage Bay Dist (ft)				250	250			250	250			250
Storage Blk Time (%)				0	0	0			0	61	60	1
Queuing Penalty (veh)				0	0	0			0	96	156	4

Intersection: 6: Washington & Pleasant Grove

Movement	B74	B74	B12	B12
Directions Served	T	T	T	T
Maximum Queue (ft)	296	294	336	349
Average Queue (ft)	163	166	110	112
95th Queue (ft)	362	364	398	403
Link Distance (ft)	212	212	503	503
Upstream Blk Time (%)	29	30	1	1
Queuing Penalty (veh)	146	150	5	7
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 1232

Attachment 4

CITY OF ROSEVILLE CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT – PLANNING DIVISION
311 Vernon Street, Roseville, CA 95678 (916) 774-5276

MITIGATION MONITORING AND REPORTING PROGRAM

Project Title/File Number:	NIPA PCL 29 – Green Acres/PL21-0067
Project Location:	7300 Galilee, Roseville CA
Project Description:	Request for a Design Review Permit for a new retail store including indoor retail space (31,787 Sq. Ft.), an open sided green house (20,191 Sq. Ft.), lath house (26,835 Sq. Ft.), and outdoor retail area (75,463 Sq. Ft.) for Green Acres, a minor grading plan for the overall property, and a merger of 3 lots into a single lot, and associated easement abandonments. The grading will include export.
Environmental Document	Initial Study/Mitigated Negative Declaration
Project Applicant:	Karenda MacDonald, Borges Architectural Group, Inc.
Property Owner:	TAM Roseville, LLC
Lead Agency Contact Person:	Charity Gold, Associate Planner, (916) 774-5247

Section 21081.6 of the California Public Resources Code requires public agencies to "adopt a reporting and monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." This Mitigation Monitoring and Reporting Program has been adopted for the purpose of avoiding environmental impacts

MONITORING PROCESS: Existing monitoring mechanisms are in place that assist the City of Roseville in meeting the intent of CEQA. These existing monitoring mechanisms eliminate the need to develop new monitoring processes for each mitigation measure. These mechanisms include grading plan review and approval, improvement/building plan review and approval and on-site inspections by City Departments. Given that these monitoring processes are requirements of the project, they are not included in the mitigation monitoring program.

It shall be the responsibility of the project applicant/owner to provide written notification to the City using the Mitigation Verification Cover Sheet and Forms, in a timely manner, of the completion of each Mitigation Measure as identified on the following pages. The City will verify that the project is in compliance with the adopted Mitigation Monitoring and Reporting Program. Any non-compliance will be reported by the City to the applicant/owner, and it shall be the project applicant's/owner's responsibility to rectify the situation by bringing the project into compliance. The purpose of this program is to ensure diligent and good faith compliance with the Mitigation Measures which have been adopted as part of the project.

TABLE OF MITIGATION MEASURES

Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
Mitigation Measure BIO-1: If project activities such as vegetation removal, clearance, grubbing, or other ground disturbance were to commence during the avian breeding season (February 1 through August 31), a qualified biologist should conduct a pre-construction nesting bird survey no more than 14 days prior to initiation of project activities. The survey area should include suitable nesting habitat on the project site and within 500 feet of the project boundary (inaccessible areas offsite can be surveyed from the site or from public roads using binoculars or spotting scopes). Pre-construction surveys are not required in areas where project activities have been continuous since prior to February 1, as determined by a qualified biologist. Areas that have been inactive for more than 14 days during the avian breeding season must be re-surveyed prior to resumption of project activities. If no active nests are identified a summary report should be preparing documenting the results of the survey and no further mitigation is required. If active nests are identified, the following measure should be implemented: • A suitable buffer should be established around any active nest as determined by a qualified biologist depending on species and surrounding land uses. No construction activities should occur within the buffer until a qualified biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest, or the nest has failed). Limited encroachment into the buffer may occur at the discretion of a qualified biologist depending on type of activity and potential level of disturbance and sensitivity of the avian species in question. Any encroachment into the buffer should be monitored by a qualified biologist to determine whether nesting birds are being impacted.	Results of preconstruction surveys shall be submitted prior to the issuance of a grading permit or Improvement Plans. Applicable construction restrictions shall be reflected within plans.	*Pre-Construction and Construction*: Surveys required prior to construction. If surveys are positive for birds, then remainder of mitigation steps are required prior to construction. Add as note on Improvement Plans.	Planning and Engineering	Nesting bird surveys	
Mitigation Measure CUL-1 Inadvertent Discoveries: If subsurface deposits believed to be cultural or human in origin, or tribal cultural resources, are discovered during construction, all work shall halt within a 100-foot radius of the discovery, and the Construction Manager shall immediately notify the City of Roseville Development Services Director by phone. The Construction Manager shall also immediately coordinate with the monitoring archeologist or project archaeologist and (if present) tribal monitor, or, in the absence of either, contact consulting tribes and a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for archaeology and subject to approval by the City, to evaluate the significance of the find and develop appropriate management recommendations. All management recommendations shall be provided to the City in writing for the City's review and approval. If recommended by the qualified professional and consulting tribes and approved by the City, this may include modification of the no-work radius. The professional archaeologist must make a determination, based on professional judgement and supported by substantial evidence, within one business day of being notified, as to whether or not the find represents a cultural resource or has the potential to be a tribal cultural resource. The subsequent actions will be determined by the type of discovery, as described below. These include: 1) a work pause that, upon further investigation, is not actually a discovery and the work pause was simply needed in order to allow for closer examination of soil (a "false alarm"); 2) a work pause and subsequent action for discoveries that are clearly not related to tribal resources, such as can and bottle dumps, artifacts of European origin, and remnants of built environment features; and 3) a work pause and subsequent action for discoveries that are likely related to tribal resources, such as midden soil, bedrock mortars, groundstone, or other similar expressions.	The applicant shall notify the Planning Division of the pre-construction meeting is date.	Add as note on Improvement Plans	Planning		

Whenever there is question as to whether or not the discovery represents a tribal resource, culturally affiliated tribes shall be consulted in making the determination. Whenever a tribal monitor is present, the monitor shall be consulted. The following processes shall apply, depending on the nature of the find, subject to the review and approval of the City: Response to False Alarms: If the professional archaeologist determines that the find is negative for any cultural indicators, then work may resume immediately upon notice to proceed from the City's representative. No further notifications or tribal consultation is necessary, because the discovery is not a cultural resource of any kind. The professional archaeologist shall provide written documentation of this finding to the City. Response to Non-Tribal Discoveries: If a tribal monitor is not present at the time of discovery and a professional archaeologist determines that the find represents a non-tribal cultural resource from any time period or cultural affiliation, the City shall be notified immediately, to consult on a finding of eligibility and implementation of appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. The professional archaeologist shall provide a photograph of the find and a written description to the City of Roseville. The City of Roseville will notify any [tribe(s)] who, in writing, requested notice of unanticipated discovery of non-tribal resources. Notice shall include the photograph and description of the find, and a tribal representative shall have the opportunity to determine whether or not the find represents a tribal cultural resource. If a response is not received within 24 hours of notification (none of which time period may fall on weekends or City holidays), the City will deem this portion of the measure completed in good faith as long as the notification was made and documented. If requested by a [tribe(s)], the City may extend this timeframe, which shall be documented in writing (electronic communication may be used to satisfy this measure). If a notified tribe responds within 24 hours to indicate that the find represents a tribal cultural resource, then the Response to Tribal Discoveries portion of this measure applies. If the tribe does not respond or concurs that the discovery is non-tribal, work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to its satisfaction. Response to Tribal Discoveries: If the find represents a tribal or potentially tribal cultural resource that does not include human remains, the tribe and City shall be notified. The City will consult with the tribe(s) on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be either a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines, or a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code. Preservation in place is the preferred treatment, if feasible. Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) not a Tribal Cultural Resource, as defined in Section 21074 of the Public Resources Code; or 3) that the treatment measures have been completed to its satisfaction. Response to Human Remains: If the find includes human remains, or remains that are potentially human, the construction supervisor or on-site archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641) and shall notify the City and Placer County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code, and Assembly Bill 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the Public					

Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. Public Resources Code § 5097.94 provides structure for mediation through the NAHC if necessary. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains in a respectful manner where they will not be further disturbed (§ 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.					

Attachment 4

CITY OF ROSEVILLE CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT
311 Vernon Street, Roseville, CA 95678 (916) 774-5276

MITIGATION VERIFICATION SUBMITTAL COVER SHEET

Project Title/Planning File #	NIPA PCL 29 – Green Acres/PL21-0067
Project Address	7300 Galilee, Roseville CA
Property Owner	TAM Roseville, LLC
Planning Division Contact	Charity Gold, Associate Planner, (916) 774-5247

SUMMARY OF VERIFICATION MATERIALS INCLUDED IN THIS SUBMITTAL

Mitigation Measure	Supporting Attachments Included	Date Complete

I HAVE ATTACHED THE FOLLOWING REQUIRED ITEMS:

☐ Table of Applicable Mitigation Measures

☐ Mitigation Verification Form(s)

☐ Specific supporting documentation required by measure(s), if applicable (e.g. biologist's report)

I hereby certify under penalty of perjury under the laws of the State of California that I am the property owner or an agent of the property owner and am authorized to submit this Mitigation Verification Form. I also certify that the above-listed mitigation measures have been completed in the manner required, and that all of the information in this submittal is true and correct, to the best of my knowledge:

Signature and Date	Print Name	Contact Number

Attachment 4

MITIGATION VERIFICATION FORM

Mitigation Measure_____

Description of Monitoring and Verification Work Performed. The following information is a required part of the description: dates, personnel names or titles, and the stage/phase of construction work. Additional notes sheets may be attached, if necessary, or the below may simply reference a separate attachment that provides the required information.

Attachment 4

INSTRUCTIONS

COVER SHEET:

A Cover Sheet for the project/development is prepared by City staff, with the top portion filled out. Each time Mitigation Verification Forms(s) are being submitted, a Cover Sheet completed by the Developer, Contractor, or Designee is required. An example of a completed summary table is provided below. The signature on the Cover Sheet must be *original wet ink*.

EXAMPLE MITIGATION VERIFICATION SUBMITTAL COVER SHEET

Project Title/Planning File #	New Coffee Shop, PL15-0000
Project Address	10 Justashort Street
Property Owner	Jane Owner
Planning Division Contact	Joe Planner, Associate Planner, (916) 774-####

SUMMARY OF VERIFICATION MATERIALS INCLUDED IN THIS SUBMITTAL

Mitigation Measure	Supporting Attachments Included	Date Complete
MM-3	Copy of survey report signed by biologist	5/10/2016
MM-4	All information included in Mitigation Verification Form	5/12/2016
MM-5	E-mail from Air District approving Dust Control Plan	5/05/2016

MITIGATION VERIFICATION FORM:

A Mitigation Verification Form is provided by City staff, along with the Cover Sheet and Table of Applicable Mitigation Measures. A form is filled in and submitted for each mitigation measure by the Developer, Contractor, or Designee. The form needs only the mitigation number to be filled in, along with the Description of Monitoring and Verification Work Performed. Multiple forms may be submitted simultaneously, under one cover sheet. It is also permissible to submit a form for each part of a measure, on separate dates. For instance, in the example measure MM-4 in the table above, the actual mitigation requires informing construction workers *and* retaining a qualified archeologist if resources are uncovered. Thus, a developer may submit a form in May certifying that construction workers have been informed, and also submit a second copy of the form in July because resources were discovered and additional actions had to be undertaken.

Each mitigation measure specifies the type of supporting documentation required; this must be submitted in order for the City to accept the mitigation as complete. An example of a completed Mitigation Verification Form is provided below.

EXAMPLE
MITIGATION VERIFICATION FORM

Mitigation Measure MM3

Description of Monitoring and Verification Work Performed. The following information is a required part of the description: dates, personnel names or titles, and the stage/phase of construction work. Additional notes sheets may be attached, if necessary, or the below may simply reference a separate attachment that provides the required information.

The mitigation measure text is included on the Improvement Plans General Notes page (Improvement Plan EN15-0001). On May 4, 2016, prior to any ground-disturbing activities (the pre-construction phase), a site meeting was held. At this meeting, workers on the site were informed of the potential to unearth remains, and were instructed to cease work and notify their supervisor immediately if any resources were observed.