6 CUMULATIVE AND GROWTH-INDUCING IMPACTS

A cumulative impact is created when two or more projects act in combination to cause related impacts that are greater than the subject project alone. Growth-inducing impacts are those impacts of the project that would remove obstacles to growth or otherwise promote growth. The focus of this section is an analysis of the cumulative and growth-inducing impacts associated with the proposed project.

6.1 CUMULATIVE IMPACTS

Section 15130 of the California Environmental Quality Act (CEQA) Guidelines requires that an environmental impact report (EIR) discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. According to State CEQA Guidelines Section 15065, "Cumulatively considerable means that the incremental effects of an individual 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 as defined in Section 15130." Sections 15130 and 15355 of the State CEQA Guidelines both stress cumulative impacts in the context of closely related projects and from projects causing related impacts.

The term "considerable" is subject to interpretation. The standards used herein to determine whether an effect is "considerable" are that either the impact of the proposed project would contribute to the existing significant cumulative impact, or the cumulative impact would exceed an established threshold of significance when the proposed project's incremental effects are combined with similar effects from other projects.

The State CEQA Guidelines also state that the cumulative impacts discussion does not need to provide as much detail as is provided in the analysis of project-only impacts and should be guided by the standards of practicality and reasonableness.

In addition, Section 15130(b) of the State CEQA Guidelines identifies that one of the following two may be used to complete an adequate cumulative analysis:

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the lead agency (i.e., the list approach), or

- A summary of projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency (i.e., the plan approach).

This EIR uses the list approach, with related past, present, and reasonably foreseeable future projects identified by the City of Merced (City) for use in cumulative analysis, as described in the balance of this section.

6.1.1 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE PROJECTS

This EIR uses the list method for its cumulative impact analysis. As directed in Section 15130(b)(1)(a) of the State CEQA Guidelines, the EIR must consider "past, present, and probable future projects producing related or cumulative impacts." The environmental influences of past projects and present projects that have been implemented already exist as a part of current conditions in the project area. Therefore, the contributions of past and present projects to environmental conditions are adequately captured in the description of the existing setting and need not be specifically listed here. This cumulative impact analysis focuses on the potential cumulative physical changes to the existing setting that could occur as a result of a combination of the proposed project and probable future projects, which are referred to as "related projects."

The cumulative impact analysis presented in this document is based on an examination of existing urban development in southeast Merced, near the proposed project, and a summary of anticipated projects identified by

City staff. The summary of projects presented in Tables 6-1 include a variety of land uses in various states of development; some are in the review process, others have been approved but have not started construction, while others are under construction or nearing completion. Each is expected to be operational by the time the proposed project is operational. These were the projects that, in staff's opinion, should be considered in the cumulative impact analysis of the Wal-Mart Distribution Center. Exhibit 6-1 shows the locations of these projects, keyed to numbers in the table.

Table 6-1
Residential, Commercial, and School Projects in Southeast Merced

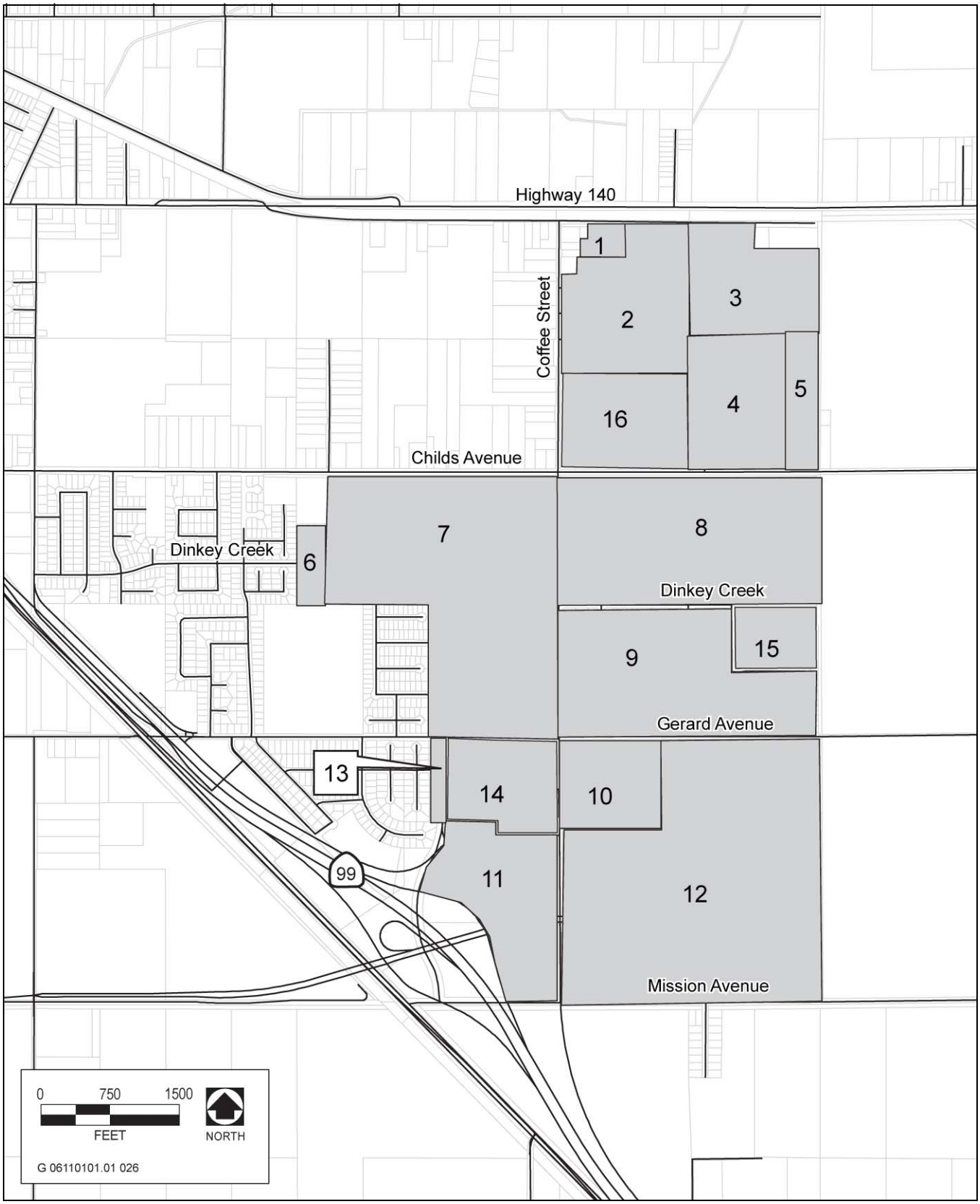
# on Map	Development Name	Acres	Approval Date	Retail Sq. Ft.	CUP Approval	# of Lots
1	Makinson	3.3	5/17/2006	—	—	18
2	Sierra Vista Subdivision	40	10/6/2004	—	—	224
3	Rennisance II	26.42	3/23/2005	—	—	158
4	Rennisance I	32	12/17/2003	—	—	166
5	Tuscany East	8.6	2/23/2005	—	—	47
6	Hartley Crossings	5.7	2/23/2005	—	—	28
7	Coffee Street Annexation	107	Not approved	—	—	240
8	Crossings at River Oaks	66.76	12/8/2004	5-acre C-N site	Is required	280
9	Sandcastle	78.47	4/23/2003	—	—	334
10	Matthew Homes Condos	16.8	10/4/2006	—	10/4/2006	296
11	Steiner Commercial Project (below)	27.3	6/18/2001	243,624	Is required	—
12	Merced Gateway Park (below)	160	Proposed	1.4 million	Is required	—
13	Alfarata Ranch #2	2.4	4/21/2004	—	—	12
14	Pioneer School and Park	—	—	—	—	—
15	Elementary School and Basin	—	—	—	—	—
16	Weaver School/Existing Homes	—	—	—	—	—

Source: City of Merced

This analysis assumes development of the projects summarized above in addition to the existing developed areas in the Merced Planning Area. Although the schedule for developing these projects is not known, it is assumed that buildout would coincide with or would occur prior to project buildout, and therefore be a part of the cumulative scenario examined here.

6.1.2 CUMULATIVE IMPACTS OF THE PROPOSED PROJECT

In the impact analysis that follows, the analysis for certain environmental topics is more detailed, or quantified, with regard to the cumulative scenario. Topics such as traffic and circulation involve measurement of vehicle trips, which can effect measurements of air and noise emissions. Other topics are addressed in a more qualitative manner, since exact numbers are not available to measure potential cumulative impacts. The following are descriptions of the project's potential cumulative impacts, by environmental topic.



Cumulative Projects **Exhibit 6-1**

AGRICULTURAL RESOURCES

CUMULATIVE IMPACT Cumulative Agricultural Land Impact. *The project would contribute to cumulative loss of farmland in the region. This is a cumulatively considerable incremental contribution, and the cumulative impact is therefore considered* ***significant.***

According to Department of Conservation (DOC), 565 acres of Prime Farmland, 177 acres of Farmland of Statewide Importance, 55 acres of Unique Farmland, and 231 acres of Farmland of Local Importance were converted to urban and built-up land between 2000 and 2002 in Merced County. As of 2004, there were 535,562 acres of Farmland in the County. In the period between 2000 and 2004, 7,149 acres of Prime Farmland and 3,345 acres of Farmland of Statewide Importance were lost, and 71 acres of Unique Farmland was gained for a net loss of 10,423 acres over this four-year period. The continued loss of high-quality farmland in the City and surrounding areas of Merced County is a significant cumulative impact.

The project would result in a loss of approximately 158.2 acres of Prime Farmland, 57.87 acres of Farmland of Statewide Importance, and 12.61 acres of Unique Farmland, which is considered a cumulatively considerable contribution to this cumulative impact when considered along with past farmland conversions identified above and planned future development proposed in the City of Merced, as shown in the list at the beginning of this section. The City has adopted a Statement of Overriding Considerations for conversion of agricultural land throughout the City's Specific Urban Development Plan (SUDP). Regardless, the impact represents a cumulatively considerable incremental contribution and is ***significant*** cumulative impact.

AIR QUALITY

CUMULATIVE IMPACT Cumulative Air Quality Impact (Construction and Operations). *The project would not contribute to cumulative degradation of air quality in the region as a result of construction (short term) and operational (long term) air emissions. This would not be a cumulatively considerable incremental contribution, and the project's cumulative impact would be* ***less than significant.***

Project implementation would result in significant air quality impacts from short-term, construction-related, and long-term operation-related (regional) emissions of reactive organic gases (ROG), oxides of nitrogen (NO_X), respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$). However, implementation of Mitigation Measures 4.2-1a, 4.2-1b, 4.2-1c, 4.2-1d, 4.2-1e, 4.2-2a, 4.2-2b, 4.2-2c, and 4.2-2d would reduce these project-level impacts to less than significant. Ozone impacts are the result of the cumulative emissions from numerous sources in the region and transport from outside the region. Ozone is formed in chemical reactions involving ROG, NO_X, and sunlight. All but the largest individual sources emit ROG and NOx in amounts too small to have a measurable effect on ambient ozone concentrations by themselves. However, when all sources throughout the region are combined, they result in severe ozone problems. For the evaluation of cumulative ozone impacts SJVAPCD recommends that lead agencies use the project-level significance standards to determine whether a project's construction or operational emissions of ROG and NO_X would not have a cumulatively considerable contribution to a significant cumulative impact (SJVAPCD 2002). The project-level impact of ROG and NO_X emissions associated with construction and operation of the project would not be cumulatively considerable with mitigation.

PM_{10} has a similar cumulative regional emphasis when particulates are entrained into the atmosphere and build to unhealthful levels over time. PM_{10}, however, has the potential to cause significant local problems during periods of dry conditions accompanied by high winds, and during periods of heavy earth disturbing activities. PM_{10} may have cumulative local impacts, if for example, several unrelated grading or earth moving projects are underway simultaneously at nearby sites. For cumulative analysis, SJVAPCD recommends that lead agencies examine the potential PM_{10} exposure to sensitive receptors near the project site from earth disturbing activities from the proposed project and any construction of nearby projects that may occur at the same time. For the sake of this analysis, it is not anticipated that other earth movement activities associated with other nearby projects would

occur at the same time as grading and earth movement for the proposed project. Furthermore, the project-level impact would be less than significant with mitigation with respect to PM_{10} emissions. As a result, PM_{10} emissions from proposed project would not be cumulatively considerable. Therefore, with mitigation, emissions of ROG and NO_X and PM_{10} associated with construction and operation of the project be a ***less-than-significant*** cumulative impact.

CUMULATIVE IMPACT Cumulative Air Quality Impact (Carbon Monoxide). *Traffic associated with project operations would not exceed standards for carbon monoxide concentrations at nearby intersections. This would not be a cumulatively considerable incremental contribution, and the project's cumulative impact would be less than significant.*

As described in Section 4.2, "Air Quality," implementation of the proposed project would result in less-than-significant air quality impacts related to carbon monoxide (CO) from local mobile sources. According to the traffic analysis prepared for this project, signalized intersections in the vicinity of the project site under existing plus project conditions would be anticipated to operate at level of service (LOS) D or better with implementation of the recommended traffic improvements (DKS 2008). Under cumulative plus project conditions, in the year 2030, two signalized intersections would be anticipated to operate at LOS E or F, as shown in Table 6-3 (DKS 2008). These LOS ratings would result from traffic generated by other future development in the area, including those reasonably anticipated future projects listed in the cumulative projects list shown in Table 6-1. First, the signalized intersection of SR 140 and Parsons Avenue would operate at LOS F and the signalized intersection of Childs Avenue and Parsons Avenue would operate at LOS E with or without implementation of the proposed project. The future concentrations of CO at these intersections are not anticipated to exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm because regulatory controls and anticipated technological improvements are anticipated to continue current trends of reductions in CO emissions from mobile sources. Moreover, because the delay at these two intersections would not be substantially worsened by the project-generated traffic. In the year 2030, project-generated traffic at the intersection of SR 140 and Parson Avenue would increase from 89.8 to 93.1 seconds and project-generated traffic at the intersection of Childs Avenue and Parson Avenue would increase from 66.0 to 66.4 seconds, as shown by Tables 6-3 and 6-6 (DKS 2008). Therefore, the contribution by project generated traffic to the poor LOS at these intersections is not cumulatively considerable. Consequently, the project's contribution to CO concentrations at future congested intersections is not cumulatively considerable, and the impact is ***less than significant***.

CUMULATIVE IMPACT Cumulative Air Quality Impact (Toxic Air Emissions). *Project operations would not result in the release of toxic air emissions that constitute a public health risk at existing or potential future sensitive receptors, based on SJVAPCD's thresholds. This would not be a cumulatively considerable incremental contribution, and the project's cumulative impact would be less than significant.*

The health risk assessment (HRA) performed to analyze the levels of health risk associated with operation toxic air contaminants (TAC) emissions determined that the maximum increase in cancer risk at a nearby sensitive receptor would be 7.3 in 1 million and the maximum increase noncancer chronic risk level would be an HI of 0.0086. Respectively, these levels of increased risk do not exceed SJVAPCD's threshold of 10 in 1 million for increased cancer risk (or an HI) of 1 for increased noncarcinogenic chronic risk. In addition to estimating the increased health risk at nearby existing receptors, the HRA also accounted for the increased health risk at future planned receptors that could potentially be approved by the City, developed, and then exposed to TAC emissions from project operations (as shown in Figure 2 on page 13 of the HRA in Appendix C). Based on an analysis of potential sources of toxic air emissions in the area, the project's contribution to health risk at existing and potential future (cumulative) nearby sensitive receptors is not cumulatively considerable and therefore the impact is ***less than significant***.

CUMULATIVE IMPACT Cumulative Air Quality Impact (Greenhouse Gas Emissions). *Project construction and operations would result in release of carbon dioxide and other greenhouse gases. Even with mitigation measures, the project would result in a net increase of greenhouse gasses and conflict with California's Assembly Bill (AB) 32 goals. This would potentially be a cumulatively considerable incremental contribution, and the cumulative impact would be therefore considered* ***significant****.*

Project implementation would also result in significant air quality impacts with respect to global climate change from both construction- and operation-related emissions of carbon dioxide (CO_2) and other greenhouse gases. Implementation of Mitigation Measures 4.2-6a, 4.2-6b, 4.2-6c, and 4.2-6d would lessen these impacts by requiring specific measures to reduce and/or offset CO_2 emissions. In addition, implementation of Mitigation Measures 4.2-1a and 4.2-2a, which require the project to comply with SJVAPCD's Indirect Source Review (ISR) rule, and Mitigation Measures 4.2-1c and 4.2-2e, which require implementation of an emissions reduction agreement with SJVAPCD, would also result in a reduction in operational CO_2 emissions. However, the extent of the reduction is not quantifiable at the time of writing of this EIR and the resultant contribution of CO_2 emissions by the project may potentially be substantial. Despite mitigation this net increase may potentially conflict with the state's AB 32 goal to reduce statewide GHG emissions to 1990 levels by 2020. Moreover, CO_2 emissions attributable to the project would contribute to the existing and projected global warming trend. Thus, the project's contribution to the significant impact of global climate change would be considered cumulatively considerable, and the project would result in a ***significant*** cumulative impact.

BIOLOGICAL RESOURCES

CUMULATIVE IMPACT Cumulative Biological Resources Impact (Special Status Species Foraging Habitat). *Project construction would result in the conversion of foraging habitat that supports Swainson's hawk and burrowing owl. However, because of proposed mitigation, the project's contribution to habitat loss would be mitigated to a less-than-significant level. However, there is a cumulatively considerable incremental contribution, and the project would result in a* ***significant*** *cumulative impact.*

Implementation of the proposed project would result in loss of approximately 150 acres of suitable foraging habitat for Swainson's hawk and could result in destruction and/or disturbance of occupied burrowing owl burrows. These special-status species are very susceptible to impacts as a result of land development activities occurring throughout the San Joaquin Valley. While it is possible to minimize impacts through avoidance and to preserve compensation habitat, a net loss nevertheless results from the impact. Mitigation included in Section 4.3, "Biological Resources," would be implemented to address potential direct effects on these resources. Preservation and management of Swainson's hawk foraging habitat at an off site location, and surveys and other avoidance measures for burrowing owl as described in Mitigation Measure 4.3-2 would reduce potential impacts to Swainson's hawk and burrowing owl to a ***less-than-significant*** level.

Implementation of the proposed project, with mitigation measures, would have less-than-significant impacts on sensitive habitats, federally protected wetlands, wildlife corridors, special-status plant species, and special-status wildlife species. However, although the project would preserve off-site habitat, the project's conversion of habitat, considered alongside the conversion of habitat associated with future development that will occur throughout the range of these raptors, would result in wide-spread loss of habitat, despite the preservation of habitat required by many of these projects. Therefore, the project would have a cumulatively considerable effect related to these resources, and the cumulative impact is considered ***significant***.

CULTURAL RESOURCES

CUMULATIVE IMPACT Cumulative Cultural Resources Impact. *As a result of research conducted and mitigation measures proposed, project construction would not contribute to the cumulative loss of cultural resources in the region. This is not a cumulatively considerable incremental contribution, and the project's cumulative impact is less than significant.*

Cultural resources in the project area vicinity and the surrounding region include evidence of early Native American occupation and historic-era agricultural and ranching activities. Particularly from the latter half of the 20th century to the present, historic buildings and structures and Native American sites have been disturbed and destroyed by development activities. During this period, the creation and enforcement of various regulations, such as CEQA protecting cultural resources, have substantially reduced the rate and intensity of these impacts; however, even with these regulations, cultural resources are still degraded or destroyed as cumulative development in the region proceeds.

Research conducted for the proposed project indicates that as-yet undiscovered cultural resources might be present in the project area. The cultural resources mitigation measures proposed would reduce impacts on prehistoric and historic-era resources and human interments to less-than-significant levels. Implementing these mitigation measures also would ensure that project-related activities would not incrementally contribute to any significant cumulative impacts on important cultural resources in the project area. These measures ensure compliance with State CEQA Guidelines California Code of Regulations Section 15064.5 and related provisions of the PRC. Consequently, the proposed project would not incrementally contribute to a significant cumulative effect on cultural resources. The project's impact is ***less than significant***.

GEOLOGY, SOILS, AND PALEONTOLOGY

Geology and Soils

CUMULATIVE IMPACT Cumulative Geology and Soils Impact. *Project construction would be subject to adopted construction standards, thus ensuring that impacts associated with soils and geology would not occur. This is a less-than-significant cumulative impact.*

The project site is not located on any known faults or traces of active faults. The nearest active/potentially active seismic sources are approximately 30 miles west of the project site. Construction of the proposed project would conform to the current California Building Standards Code, which contains specifications to minimize adverse effects on structures caused by ground shaking from earthquakes and to minimize secondary seismic hazards. Through conformance with the California Building Standards Code and implementation of site-specific engineering measures developed in compliance with this code, development of the proposed project would not result in exposure of people or structures to substantial adverse effects related to seismic hazards.

The project site is subject to high shrink-swell potential, and contains areas that could present hazards related to liquefaction and subsidence. Implementation of mitigation measures contained in Chapter 4.5, "Geology, Minerals, Soils, and Paleontological Resources," would reduce these impacts to less-than-significant levels through completion of site-specific geotechnical studies and implementation of construction and design measures developed in response to the studies.

Implementation of the various related projects and other projects in the region could expose additional structures and people to seismic and soils hazards. The potential seismic and soils hazards, therefore, could represent a significant cumulative impact if projects are not developed to the latest building standards and do not incorporate recommendations from site-specific geotechnical reports and grading/erosion plans prepared for these projects. However, each project considered in this cumulative analysis must individually meet building code requirements, and no additive effect would result from the combination of the related projects considered in this cumulative

analysis and the proposed project. Therefore, no significant cumulative impact related to seismic or soil hazards would occur. Implementation of the proposed project would not result in any cumulatively considerable incremental contributions to any significant cumulative impacts. The impact is ***less than significant***.

Paleontological Resources

CUMULATIVE IMPACT

Cumulative Paleontological Resources Impact. *As a result of research conducted and the anticipated low occurrence, project construction would not contribute to the cumulative loss of paleontological resources in the region. This is not a cumulatively considerable incremental contribution, and the project's cumulative impact is less than significant.*

Most of the project site is underlain by younger Pleistocene-age sediments of the Modesto Formation, which is considered a paleontologically sensitive rock unit under the Society of Vertebrate Paleontology guidelines. The fact that vertebrate fossils have been recovered near the project site and other recorded vertebrate fossil localities have been recorded throughout the San Joaquin Valley, and that all have been in sediments referable to the Modesto Formation, suggests that there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities at the project site. Mitigation measures are contained in Chapter 4.5, "Geology, Minerals, Soils, and Paleontological Resources," to reduce impacts on previously undiscovered paleontological resources to less-than-significant levels.

Fossil discoveries resulting from excavation and earth-moving activities associated with development are occurring with increasing frequency throughout the state. However, unique, scientifically-important fossil discoveries are relatively rare, and the likelihood of encountering them is based on the type of specific rock formations found underground. These rock formations vary from location to location. Furthermore, when unique, scientifically-important fossils are encountered by construction activities, the subsequent opportunities for data collection and study generally provide a benefit to the scientific community. Therefore, because of the low probability that any project would encounter unique, scientifically-important fossils, and the benefits that would occur from recovery and further study of those fossils if encountered, development of the related projects and other development in the region are not considered to result in a significant cumulative impact on paleontological resources. The impact is ***less than significant***.

HAZARDS AND HAZARDOUS MATERIALS

CUMULATIVE IMPACT

Cumulative Hazards and Hazardous Materials Impact. *Existing laws addressing storage, transport, and disposal of hazardous materials that may be stored and used at the project site are subject to existing regulations. This is not a cumulatively considerable incremental contribution, and the project's cumulative impact is less than significant.*

The proposed project and related projects would all involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. Existing laws and regulations address the storage, use, disposal, and transport of hazardous materials. The cumulative impact is ***less than significant***.

Impacts related to these activities for the project are not cumulatively considerable since routine application of federal, state, and local laws and regulations will address storage, use, disposal, and transport of hazardous materials to protect public and environmental health.

HYDROLOGY AND WATER QUALITY

CUMULATIVE IMPACT Cumulative Hydrology and Water Quality Impact. *Existing laws address water resources at the project site, and construction and operation of the proposed project would be subject to existing regulations. This is not a cumulatively considerable incremental contribution, and the project's cumulative impact is less than significant.*

As described in Section 4.6, "Hydrology and Water Quality," the proposed project would, after implementation of mitigation measures, result in less than significant impacts associated with degradation or depletion of ground or surface water quality; depletion of ground water resources; reduction of water quantity through groundwater recharge interference or demand in excess of available supplies; and creation of flooding or other water related hazards. In terms of hydrologic and water quality cumulative impacts, the City of Merced General Plan (City General Plan) has designated the proposed Project site for "Industrial" land use, and to that end has approved the Storm Drain Master Plan, which sets required drainage infrastructure recommendations for the proposed Project site. These recommendations, designed to accommodate stormwater runoff under buildout conditions per the *City of Merced Vision 2015 General Plan*, would be incorporated in the proposed project infrastructure. Because these standards would also apply to any related project, and because the water requirements for the proposed project would be less than the existing agricultural requirements, hydrology and water quality impacts are ***less than significant***.

LAND USE

CUMULATIVE IMPACT Cumulative Land Use Impact. *The proposed project is consistent with local land use regulations and would not result in an incremental contribution to potential division of an established community or adverse affects on adjacent land uses. The project's cumulative impact is less than significant.*

Planned projects in the City are consistent with environmental plans and policies, to the extent that proposed land uses have been identified. The impact is not cumulatively considerable.

As described in Section 4.7, "Land Use," of this document, implementing the proposed project would not physically divide a community. It therefore also would not contribute to a cumulative impact regarding this issue.

Development of the project would change the site from rural, undeveloped land to urban land uses. The project is located at the outer fringe area of existing development. The site currently contains agricultural uses, with adjacent agricultural land uses; however, the site is adjacent to existing industrial uses to the north. The project site is located within a larger area in Southeast Merced that is designated for industrial development. As such, development of the proposed distribution center would not act in conjunction with development of the surrounding lands to physically divide the community. There is no cumulative impact.

Impacts involving land use plans or policies and zoning generally would not combine to result in cumulative impacts. The determination of significance for impacts related to these issues, as considered in Appendix G of the State CEQA Guidelines, is whether a project would conflict with any applicable land use plan or policy adopted for the purpose of reducing or avoiding environmental impacts. Such a conflict is site-specific; it is addressed on a project-by-project basis. As described in Section 4.7 of this EIR, implementing the proposed project is consistent with the existing land use designation and zoning, and local land use plans, and policies.

The project's impact is ***less than significant***.

NOISE

CUMULATIVE IMPACT Cumulative Noise Impact. *Transportation source noise would extend beyond the project site along existing and future approved offsite roads. Project traffic can cause significant traffic noise impacts to sensitive uses along these roadways. This is a cumulatively considerable incremental contribution, and the project's cumulative impact would be* ***significant****.*

Because the City has not developed a noise ordinance (Espinosa, pers. comm. 2006), the City has elected to adopt the time-of-day exemption established by the Merced County Noise Ordinance for construction noise. Construction activities occurring during the daytime hours are exempt from the noise limits set forth in the Merced County Noise Ordinance (Merced County Code [Code 18.41.070]). Under the terms of the County Code, in order to qualify for this exemption, construction equipment must be fitted with factory installed muffling devices and maintained in good working order, and staging areas must be set back away from off-site sensitive receptors as much as possible.

For the proposed project, it was determined that adherence to the existing County noise regulations would be sufficient to avoid significant construction noise impacts. While the construction noise sources associated with the proposed project could be considered exempt if limited to the daytime, there is no guarantee that other noise in the area would be created only during the exempt daytime hours. Therefore, significant cumulative noise impacts associated with construction activities could occur. However, noise levels are not directly additive and attenuate rapidly with distance. Thus, if construction of nearby projects occurs simultaneously, these projects would likely not result in cumulative impacts unless sites are being developed in close proximity to one another and expose sensitive receptors to significant noise levels at the same time. Because the proposed project would not result in significant construction noise impacts after mitigation, it would not contribute to any such significant cumulative noise impacts.

Stationary noise associated with the proposed project would not result in exceedence of the City's general plan policies or Merced County's (County's) noise regulations at off-site sensitive receptors. While the noise from any stationary noise sources associated with the proposed project could be controlled at the source (via noise walls, enclosures, site planning), there is no guarantee that all other projects in the area would include such noise controls. Hence, significant cumulative noise impacts associated with stationary noise sources could occur. However, because the proposed project would not result in significant stationary noise impacts, it would result in a small contribution to any significant cumulative noise impacts.

While construction- and stationary-source noise can be controlled onsite at the point of origin, transportation-source noise may extend beyond a project site along existing and future approved offsite roads. Project traffic can cause significant traffic noise impacts to sensitive uses along these roadways. As described in Section 4.8, "Noise," implementation of the proposed project would result in significant and unavoidable long-term traffic-generated noise impacts under baseline plus project conditions at residences along the segment of Tower Road between State Route (SR) 140 and Childs Avenue, the segment of Tower Road between Childs Avenue and Gerard Avenue, and the segment of Gerard Avenue between Campus Parkway and the project site entrances. In addition, truck trips generated by the proposed project would result in significant and unavoidable single-event noise level (SENL) impacts at residential land uses located near affected road segments.

As explained in the traffic noise analysis of Section 4.8, traffic noise increases would result in significant and unavoidable impacts at the project level at residential receptors along some area roads, including the farm house located along the south side of the segment of Gerard Avenue between Campus Parkway and the project site entrances. Under cumulative conditions, project-generated traffic would cause the traffic noise level to increase 12.4 dBA along this road segment. A 14.7 dBA traffic noise level increase would occur along the segment of Gerard Avenue between the project site entrances and Tower Road; however, no sensitive receptors are located along this road segment.

The combined cumulative increase in traffic on local roadways anticipated from the proposed project and regional growth would result in a substantial number of additional existing and proposed sensitive receptors. Thus, the traffic noise impacts from the proposed project and related projects, taken together, are considered cumulatively significant.

Future development in the project area may generate additional traffic volume, including truck trips that pass by sensitive receptors, thereby increasing traffic noise, as shown in Table 4.8-10, and the frequency of exposure to SENLs. While some of the future planning projects in the area may result in removal and/or redevelopment of some existing affected receptors, and thereby serve as an opportunity to provide design features that reduce exposure to traffic noise and SENLs, there is no guarantee that these design features would be sufficient.

Because it is considered infeasible to sufficiently reduce noise at every existing and proposed sensitive receptor that would be affected, the project's cumulative contribution to exposure of sensitive receptors to traffic noise would remain cumulatively considerable and the impact would remain ***significant***.

Groundborne vibration generated by the project would not result in exceedence of vibration level standards from the California Department of Transportation (Caltrans) or Federal Transit Administration at off-site sensitive receptors. While the sources of groundborne vibration from any on-site stationary noise sources associated with the project operation or construction, or associated truck trips on area roads, would be set back far enough from off-site sensitive receptors, there is no guarantee that all other projects in the area would include such set back distances as part of their proposals. Hence, significant cumulative noise impacts associated with sources of groundborne vibration could occur. However, because the proposed project would not result in significant groundborne vibration impacts, it would not contribute to any such significant cumulative noise impacts.

POPULATION AND HOUSING

CUMULATIVE IMPACT — Cumulative Population and Housing Impact. *The project is consistent with existing local land use policies and regulations and would not result in a cumulatively considerable incremental contribution. The cumulative impact is therefore* ***less than significant****.*

Past, present, and probable future projects within the City, as described at the beginning of this section, are the basis for this cumulative analysis. These development projects would result in generation of approximately 1,336 dwelling units. Please refer to information presented under the heading "Past, Present, and Reasonably Foreseeable Future Projects."

The project would provide jobs in an area with relatively high unemployment. As of May 2006, the County had nearly double the unemployment rate of California as a whole (4.6% vs. 8.9%), and the number of families and individuals below the poverty level is higher in the City than in the County, on a 10-year average in 1989 and again in 1999. According to the California Employment Development Department, the County currently experiences a 10.9% unemployment rate, which is the fourth highest in California.

The proposed project would provide an estimated 1,200 jobs, which would primarily not require advanced degrees or specialized training. Due to the high unemployment rate and the level of education and training necessary, it is likely that the proposed project would employ mostly existing residents from the region.

The City's General Plan states that economic development and urban expansion is a City goal, and available commercial and industrial uses are currently limited in the City. The project's conformance with the existing land use designation and zoning would further ensure that the project would not cumulatively impact population and housing in Merced.

In the cumulative scenario, there is no potentially significant population and housing related cumulative impact. According to Appendix G of the CEQA Guidelines, a project could induce population growth in an area either directly (for example, by creating a demand for new homes and businesses) or indirectly (for example, through

extension of public infrastructure). In the case of the proposed distribution center, neither direct nor indirect population and housing growth is likely to result from the project because the project would employ mostly existing residents, thereby not increasing demand for new housing, and the project would not extend infrastructure sized to accommodate additional development in currently undeveloped areas. The project's contribution to any such cumulative effects is not cumulatively considerable and the project's cumulative impact is ***less than significant***.

UTILITIES AND PUBLIC SERVICES

As indicated in Section 4.12, "Utilities and Public Services," the proposed project would result in less-than-significant impacts associated with increased demands for water supply, wastewater conveyance and treatment, solid waste disposal, electricity and natural gas, fire protection services, police protection services, and school facilities and services.

In terms of cumulative impacts, the City and the appropriate service providers are responsible for ensuring adequate provision of utilities and public services within their jurisdictional boundaries. The City General Plan identifies goals and policies associated with providing water, wastewater, solid waste, electricity, natural gas, fire services, police services, and school facilities and services to new development, including many of the related projects identified in this chapter.

Utilities—Water

CUMULATIVE IMPACT Cumulative Water Supply Impact. *Based on a water supply assessment prepared for the proposed project, there are sufficient water resources to support the proposed project. . This is not a cumulatively considerable incremental contribution, and the project's cumulative impact is* ***less than significant.***

The City's 2005 Urban Water Management Plan (UWMP) projects future potable water demands to ensure that the future needs of residents and businesses in the SUDP are planned for and adequately addressed.

The City's total projected water supplies available during normal, single dry and multiple dry water years during a 20-year projection will meet the projected water demand associated with the project in addition to existing and planned future uses. As shown in Table 4.12-2 in this DEIR, buildout of the City would result in a water supply demand of 55,677 acre-feet per year (afy), and a sufficient water supply would be available to meet this demand under normal, single dry and multiple dry water years. Based upon the analysis undertaken by the City in its UWMP, and the groundwater management and planning efforts being undertaken by the City and MID, City has concluded that it can continue to provide potable water to future development included in the SUDP, including the project. Therefore, the proposed project and related projects would not result in cumulative impacts related to water supply. The impact is ***less than significant***.

As shown in Table 4.12-3 of this DEIR, the total domestic water demand for the proposed project is estimated to be 55,000 gallons per day (gpd) (61.6 acre-feet per year [afy]). It should be noted that the project facility would have two 300,000-gallon ground-level water storage tanks (0.9 afy) with a total water demand of 600,000 gallons (1.8 afy). Because it is not possible to predict when, if ever, these water tanks would be needed for fire protection, it is assumed that the amount of water necessary to fill the tanks is an annual water demand. A WSA has been prepared for the proposed project consistent with Water Code Section 10912 (Appendix F). This assessment includes a determination as to whether the projected water supplies available would meet the water demand associated with the proposed project, in addition to the existing and planned future uses. The projected water demand associated with industrial land use for the project site was accounted for in the most recently adopted UWMP. According to the water supply assessment, future water supplies would be adequate to meet water demands of the project and impacts on increased water demand would not be cumulatively considerable, and the project's cumulative impact is ***less than significant***.

Utilities—Wastewater

CUMULATIVE IMPACT Cumulative Wastewater Impact. *The approved WWTP expansion would accommodate wastewater demand of the project and related projects. Therefore the project's increase in demand is not a cumulatively considerable incremental contribution, and the project's cumulative impact is less than significant.*

Wastewater from the project site would be conveyed to the Merced Wastewater Treatment Plant (WWTP). As described in Section 4.12, "Utilities and Public Services," the proposed project is estimated to generate a 49,500 gpd (0.049 million gallons per day [mgd]) of wastewater. The wastewater treatment plant is currently operating at an average dry weather flow of 7.8 mgd), or 78% of the plant's permitted average dry-weather flow capacity of 10 mgd. The plant's current wet-weather flow is 8.15 mgd.

The City is planning to increase wastewater treatment capacity and improve treated effluent quality of the existing City of Merced WWTP facility, and the City has evaluated the environmental impacts of the expansion and improvement to the WWTP in the certified *City of Merced Wastewater Treatment Plant Expansion Project, Final Environmental Impact Report* (City of Merced 2006a). Expansion of the WWTP will accommodate planned wastewater loads generated within its SUDP area, including the project site, and will comply with current and anticipated effluent quality regulatory limits. The WWTP project would initially increase the capacity of the WWTP from the currently permitted 10 mgd to 11.5 mgd, and this initial upgrade is scheduled to begin immediately after certification of the final EIR. Following this initial upgrade a series of improvements would be made to the WWTP enabling the capacity of the treatment system to be rated at 12 mgd by 2012 by adding a series of tertiary-treatment facility improvements. The WWTP would reach a capacity of 16 mgd between 2017 and 2025 with additional improvements as needed to meet future wastewater loads with ultimate capacity eventually reaching 20 mgd.

In addition, it should be noted that the wastewater generated by a distribution center is far less than that generated by other industrial types of uses (such as food processing facilities). The wastewater demand assumed for this site in determining the regional wastewater demand for the WWTP expansion is therefore higher than what the distribution center would actually generate.

Because the WWTP expansion will appropriately accommodate the project's wastewater demand (which is less than assumed for the site), as well as the demand of other future projects in the region, the impact is ***less than significant***.

Utilities—Electricity

CUMULATIVE IMPACT Cumulative Electrical Impact. *Because sufficient electricity supplies are available to support cumulative development and cumulative electricity impacts from the proposed project and related projects, the cumulative impact of the project would not result in a cumulatively considerable incremental contribution, and the project's cumulative impact would be less than significant.*

Pacific Gas and Electric Company (PG&E) and Merced Irrigation District (MID) facilities are located in the project area, and either utility provider could provide electrical service to the project site, and cumulative development would also increase the amount of demand for electrical supply. PG&E or MID would be able to provide electricity to the project site, and the increase in demand for electricity would not be substantial in relation to the existing electricity consumption in PG&E's or MID's service area. Therefore, sufficient electricity supplies are available to support cumulative development and cumulative electricity impacts from the proposed project and related projects. In addition, because future development would be required to comply with all existing City, PG&E or MID, and California Public Utilities Commission requirements, and applicable California Building Standard Code requirements, it is anticipated that electrical service and infrastructure would be available.

The project would therefore not result in a cumulatively considerable incremental contribution, and the impact is ***less than significant***.

Utilities—Natural Gas

CUMULATIVE IMPACT Cumulative Natural Gas Impact. *Sufficient natural gas supplies are available to support cumulative development and cumulative natural gas demands from the proposed project and related projects. . This is not a cumulatively considerable incremental contribution, and the project's cumulative impact is less than significant.*

PG&E is the natural gas supplier for the City. The energy demands that would be created by the project would not be considered substantial in relation to the total demand for energy. Cumulative development would increase the amount of demand for natural-gas supply. The total amount of natural gas supplied by PG&E in its northern and central California service area was estimated to be 887 million cubic feet per day in 2000. Additional energy supplies are expected to be available in the future. In addition, because future development would be required to comply with all existing City and PG&E requirements as well as applicable California Building Standard Code requirements, gas infrastructure would be available. Therefore, cumulative natural-gas impacts are expected to be less than significant. The project would not result in a cumulatively considerable incremental contribution to this cumulatively significant impact from the proposed project and related projects. The cumulative impact is ***less than significant***.

Public Services—Solid Waste

CUMULATIVE IMPACT Cumulative Solid Waste Impact. *Existing storage and conveyance capacity would be adequate to serve the project and other development in its service area. . This is not a cumulatively considerable incremental contribution, and the project's cumulative impact is less than significant.*

The SR 59 Landfill, which would receive project waste, has remaining capacity of 2.9 million cubic yards and is expected to remain open over the next two decades. The Highway 59 Landfill is permitted to accept a maximum of 1,500 tpd of solid waste, and the average daily rate of solid waste tonnage accepted at the facility is approximately 488 tpd. On a daily basis, the estimated 6.3 tpd of solid waste generated by the proposed project would represent approximately 0.4% of the maximum daily disposal and approximately 1.4% of the average daily disposal. Because this landfill would have adequate capacity to serve the project and other development in its service area, cumulative impacts related to solid waste are ***less than significant***.

Public Services—Police, Fire, and Schools

CUMULATIVE IMPACT *Existing fire and police protection services would be adequate to serve the proposed project. . This is not a cumulatively considerable incremental contribution, and the project's cumulative impact is less than significant.*

Development of the proposed project would result in increased demand for fire and police protection facilities and services. The City of Merced Fire Department and the City of Merced Police Department would be capable of providing fire and polices services, respectively, to the proposed project. In addition, it is the City's policy to ensure that new development pays its fair share of costs for increased demands in fire and police services through payment of the Public Facilities Impact Fees. Currently, the parks and recreational facilities, school facilities and services, and other public services in the City are adequate to serve the existing City residents. The proposed project is not expected to result in substantial, direct population growth; therefore, the project would not increase long-term demand for these services. Cumulative impacts related to public services are ***less than significant***.

TRANSPORTATION/TRAFFIC

2030 Cumulative No Project Condition

This section discusses the traffic operating conditions of the study intersections and roadway segments under the 2030 Cumulative Condition. The forecasted intersection and roadway segment traffic volumes were obtained from a traffic analysis and report prepared by DKS Associates in December, 2008. The 2030 Cumulative No Project Condition traffic volumes were developed from the forecasted traffic from the Merced County Association of Governments travel demand forecast model plus the addition of net-new trips expected to be generated by the approved projects within the study area. Please see Exhibit 6-2 for 2030 Cumulative No Project peak hour intersection volumes.

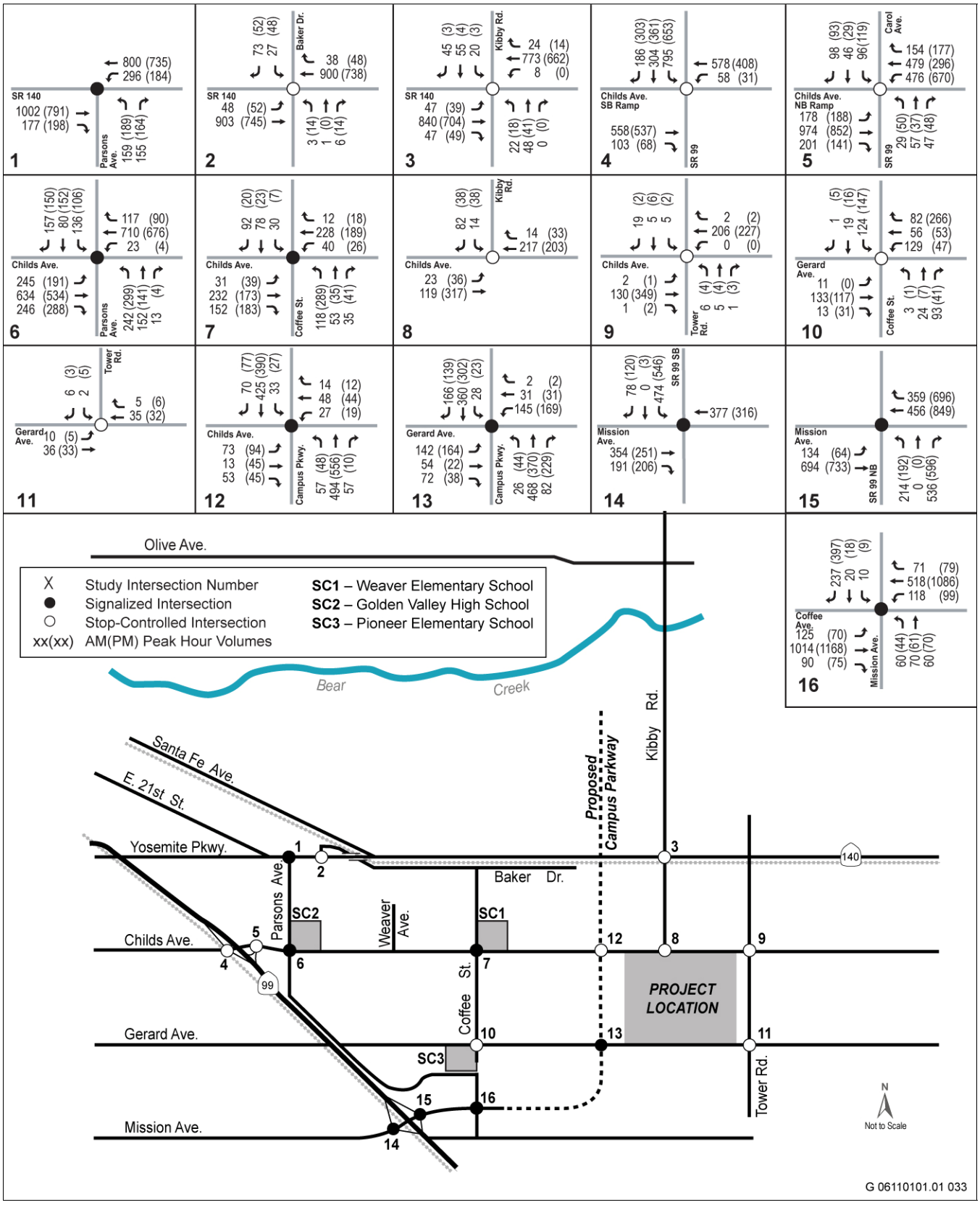
Roadway Improvements

In addition to the roadway improvement discussed in Section 4.11, "Traffic and Transportation," of this EIR, the following roadway improvements were assumed to be implemented after the anticipated completion date of the proposed project, and thus were included in this analysis:

- Extension of Campus Parkway north of Childs Avenue to connect to SR 140 by providing two loop ramps on the north side of SR 140.
- Access from Campus Parkway to the new University of California Merced and the development areas north of Merced.
- New traffic signal at the intersection of Childs Avenue and Campus Parkway.
- SR 99 would be upgraded to a six-lane facility with three lanes in each direction.
- Replacement of Bradley Overhead Bridge on SR 140 with a four-lane facility with a continuous left-turn lane including SR 140 from Parsons Avenue to past Santa Fe Avenue.
- Realignment and upgrading of Baker Drive and Santa Fe Avenue with signals at Kelly Avenue and Santa Fe Avenue.

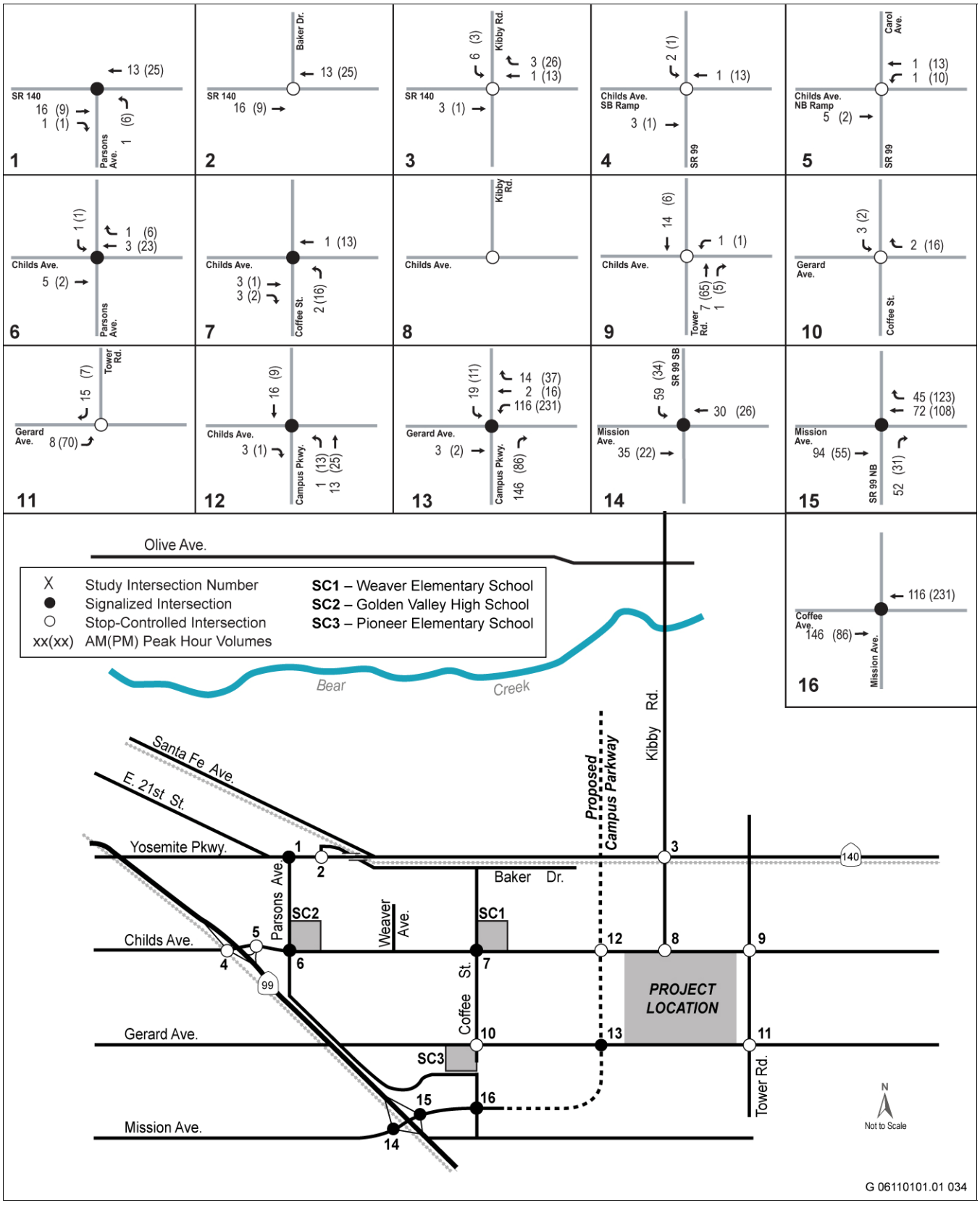
2030 Cumulative Background Trip Generation

In addition to the approved projects described in Traffic and Transportation section of this EIR, Section 4.11, it was assumed the Merced Gateway Park project would be developed by year 2030 and, therefore, included in the 2030 Cumulative Condition. Merced Gateway Park is a proposed shopping center for which the City is currently processing applications and having EIRs prepared. The project actually consists of two separate projects involving over 130 acres of Regional Commercial development at the northeast and southeast corners of Campus Parkway and Coffee Street. The trip generation for the Merced Gateway Park was determined based on the standard trip rates published in the Institute of Transportation Engineers, *Trip Generation, 7th Edition* (2003), for weekday conditions, as summarized in Table 6-2. In table 6-2 trip reductions are shown in italics. Dashes shown for a.m. mean there were no trips generated during that time period and/or there was no trip reduction during that time period. Retail typically opens after the a.m. peak hour, so it generally has no or very little trip generation. Please see Exhibit 6-3 for 2030 Project Trips and Exhibit 6-4 for 2030 Cumulative with Project peak hour intersection volumes.



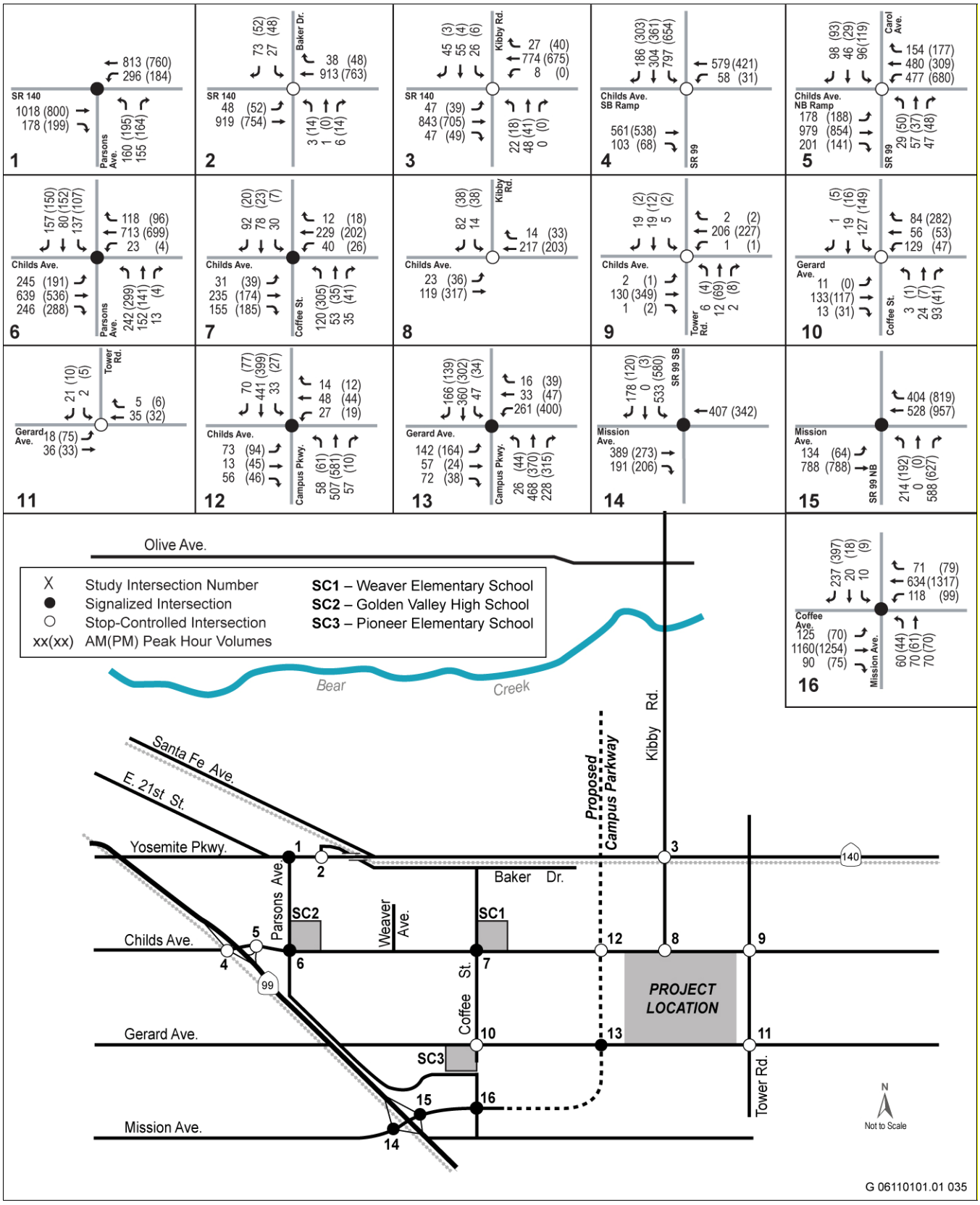
Source: DKS Associates

2030 Cumulative No Project Peak Hour Intersection Volumes (G 33) **Exhibit 6-2**



Source: DKS Associates

2030 Project Trips **Exhibit 6-3**



Source: DKS Associates

2030 Cumulative with Project Peak Hour Intersection Volumes **Exhibit 6-4**

2030 Cumulative Trip Generation

It was assumed that the trip distribution patterns of Merced Gateway Park would be similar to Steiner Commercial Development project, as described in Section 4.11, "Traffic and Transportation," of this EIR. For more information on existing, 2010, and cumulative traffic conditions, please refer to Appendix E.

Intersection Operating Conditions

Table 6-3 summarizes the results of the intersection level of service calculations for the 2030 Cumulative No Project Condition. Cumulative traffic growth without the project would cause six and five of the 16 study intersections to operate at an unacceptable LOS (LOS E or F) during the respective a.m. or p.m. peak hours as summarized below. Additional information regarding the traffic impact is contained in the Traffic Study (Appendix E).

Table 6-2
Merced Gateway Park—Trip Generation

Land Use	Size	Unit	Daily Trip	A.M. Trip			P.M. Trip		
				Total	Inbound	Outbound	Total	Inbound	Outbound
North Site									
Retail[1]	553,000	sf	24,509	–	–	–	1,499	660	839
Internal Trip Reduction				–	–	–	*-120*	*-59*	*-61*
Net External Trip							1,379	601	778
Restaurant[2]	56,000	sf	7,120	645	335	310	612	373	239
Hotel[3]	42,000	sf	760	52	32	20	55	29	26
Theatre[4]	3600	Seats	–	–	–	–	252	98	154
Subtotal	**651,000**	sf	**32,389**	**697**	**367**	**330**	**2,298**	**1,101**	**1,197**
South Site									
Retail[1]	150,000	sf	6,648	–	–	–	*407*	*179*	*228*
Internal Trip Reduction				–	–	–	*-93*	*-40*	*-53*
Net External Trip							314	139	175
Restaurant[2]	18,000	sf	2,289	207	108	99	197	120	*77*
Office[2]	472,000	sf	5,197	732	644	88	703	120	583
Internal Trip Reduction				–	–	–	*-49*	*-32*	*-17*
Net External Trip				–	–	–	654	88	566
Hotel[2]	83,500	sf	1,520	104	63	41	110	58	52
Subtotal	**723,500**	sf	**15,654**	**1043**	**815**	**228**	**1,275**	**405**	**870**
Total	**1,374,500**		**48,043**	**1,740**	**1,182**	**558**	**3,573**	**1,506**	**2,067**

Note:
sf = square feet
[1] The project descriptions were provided by the City of Merced
[2] Trip generations were determined based on Institute of Transportation Engineers Land Use 814 (Special Retail Center) for Retail, Land Use 932 (High-Turnover [Sit-down] Restaurant) for Restaurant, Land Use 310 (Hotel) for Hotel, Land Use 444 (Movie Theater with Matinee) for Theatre and Land Use 710 (General Office) for Office.
Source: Institute of Transportation Engineers 2003

Cumulative traffic growth would cause five of the sixteen study intersections to operate at an unacceptable LOS (LOS E or F) during both a.m. and p.m. peak hours. These intersections are:

- SR 140 at Baker Drive
- SR 140 at Kibby Road
- Childs Avenue at SR 99 southbound off-ramp
- Childs Avenue at SR 99 northbound off-ramp
- Childs Avenue at Parsons Avenue

In addition, the intersection of SR 140 and Parsons Avenue operates at an unacceptable LOS F during the a.m. peak hour only.

All other intersections would continue to operate at acceptable LOS (LOS D or better).

It is recommended that improvement measures be implemented at the intersections that currently (or are projected to) operate at LOS E or F, in order to maintain traffic operation at LOS D or better. While the proposed project may not cause the impacts at these intersections to occur, it would contribute to impaired operations that already exist. Accordingly, the City may wish to calculate and require the project to contribute on a pro-rata basis to the improvements (Improvement Measures) described below and based on the information in Table 6-7 "Project's Share of Traffic" on page 6-29. (These are distinguished from mitigation measures, which address potential impacts directly caused by the proposed project.) Some of the intersections in Table 6-3 are not in the impact fee program; therefore, fees paid by the project do not contribute to needed improvements.

Table 6-3
2030 Cumulative No Project Condition Intersection Level of Service Analysis

No	Intersection Location	Control	AM Peak Hour		PM Peak Hour	
			Delay [a]	LOS [b]	Delay	LOS
1	SR 140 / Parsons Avenue	Signalized	89.8	F	37.7	D
2	SR 140 / Baker Drive	Unsignalized	5.4		6.1	
	SB Approach		>50.0 [c]	F	>50.0	F
	EB Left		10.2	B	9.6	B
3	SR 140 / Kibby Road	Unsignalized	39.1		3.1	
	NB Approach		>50.0 [c]	F	>50.0	F
	SB Approach		>50.0 [c]	F	36.6	E
	EB Left		9.6	A	9.1	A
	WB Left		9.7	A	0.0	A
4	Childs Avenue / SR 99 Southbound Off-Ramp	AWSC [d]	>50.0	F	>50.0	F
5	Childs Avenue / SR 99 Northbound Off-Ramp	AWSC	>50.0	F	>50.0	F
6	Childs Avenue / Parsons Avenue	Signalized	66.0	E	61.8	E
7	Childs Avenue / Coffee Street	Signalized	28.6	C	32.2	C

Table 6-3
2030 Cumulative No Project Condition Intersection Level of Service Analysis

No	Intersection Location	Control	AM Peak Hour		PM Peak Hour	
			Delay [a]	LOS [b]	Delay	LOS
8	Childs Avenue / Kibby Road	Unsignalized	2.5		1.8	
	SB Approach		10.3	B	12.1	B
	EB Left		7.7	A	7.8	A
9	Childs Avenue / Tower Road	Unsignalized	1.2		0.5	
	NB Approach		11.1	B	12.8	B
	SB Approach		10.1	B	12.8	B
	EB Left		7.6	A	7.7	A
	WB Left		0.0	A	0.0	A
10	Gerard Avenue / Coffee Street	AWSC	9.5	A	9.8	A
11	Gerard Avenue / Tower Road	Unsignalized	7.1		7.1	
	SB Approach		6.7	A	7.0	A
	EB Left		7.2	A	7.1	A
12	Childs Avenue / Campus Parkway	Signalized	26.3	C	26.4	C
13	Gerard Avenue / Campus Parkway	Signalized	28.8	C	29.8	C
14	Mission Avenue / SR 99 Southbound	Signalized	20.6	C	21.5	B
15	Mission Avenue / SR 99 Northbound	Signalized	28.3	C	39.6	D
16	Mission Avenue / Coffee Street	Signalized	37.1	D	45.8	D

Notes:
a. Delay is in seconds per vehicle. For signalized intersections, delay is based on average stopped delay. For unsignalized intersections, delay is based at the worst approach for two-way stop controlled intersection.
b. LOS = Level of Service
c. For unsignalized intersections, delays >50 are beyond the upper limits of LOS delay estimation equations under the HCM 2000 methodologies.
d. AWSC = All-way stop control
Source: DKS Associates 2008

CUMULATIVE IMPACT Cumulative Traffic Impact— *SR 140 and Parsons Avenue* Intersection Operation (2030 No Project). *Cumulative traffic growth without the project would cause the SR 140 and Parsons Avenue intersection to operate at an unacceptable LOS (LOS E or F) during the a.m. and p.m. peak hour. This is a cumulatively considerable impact that would occur without the proposed project.*

Mitigation Measure 6-1: Intersection of SR 140 and Parsons Avenue. Under the 2030 Cumulative No Project Conditions, traffic on SR 140 would operate at deficient LOS F due to high traffic volumes along SR 140. In order to achieve acceptable levels of service, the intersection would have to have a revised traffic signal timing plan as part of a regular signal maintenance routine. This would improve the intersection to operate at an acceptable LOS of D during the a.m. peak hour for the 2030 Cumulative No Project Condition.

CUMULATIVE IMPACT Cumulative Traffic Impact— *SR 140 and Baker Drive* Intersection Operation (2030 No Project). *Cumulative traffic growth without the project would cause the SR 140 and Baker Drive intersection to operate at an unacceptable LOS (LOS E or F) during both a.m. and p.m. peak hours. This is a cumulatively considerable impact that would occur without the proposed project.*

Mitigation Measure 6-2: Intersection of SR 140 and Baker Drive**.** Under the 2010 Background and 2030 Cumulative No Project Conditions, traffic on Baker Drive would operate at deficient LOS (LOS E or F) due to high traffic volumes on SR 140. The intersection would also meet the traffic signal warrant under both 2010 Background and 2030 Cumulative No Project Conditions. In order to achieve acceptable levels of service, the intersection would have to be signalized to accommodate the southbound left-turn traffic. This would improve the intersection to LOS C during both a.m. and p.m. peak hours under the 2010 Background Conditions and the 2030 Cumulative No Project Conditions.

CUMULATIVE IMPACT Cumulative Traffic Impact— *SR 140 and Kibby Road* Intersection Operation (2030 No Project). *Cumulative traffic growth without the project would cause the SR 140 and Kibby Road Intersection to operate at an unacceptable LOS (LOS E or F) during both a.m. and p.m. peak hours. This is a cumulatively considerable impact that would occur without the proposed project.*

Mitigation Measure 6-3: Intersection of SR 140 and Kibby Road**.** Under the 2030 Cumulative No Project Conditions, the northbound and southbound traffic on Kibby Road would deteriorate to deficient LOS. Even though the peak hour traffic volumes on SR 140 would be relatively light, the operating condition would not be improved by lane re-striping or adding a lane in any direction. The intersection would also meet the traffic signal warrant under the 2030 Cumulative No Project Conditions. In order to achieve acceptable levels of service, the intersection would have to be signalized and the signal would need to be synchronized with the railroad signal just south of the intersection. This would improve the operating condition on Kibby Road approaches to acceptable LOS (LOS D or better) and maintain the intersection operating conditions at LOS B during both a.m. and p.m. peak hours.

CUMULATIVE IMPACT Cumulative Traffic Impact— *Childs Avenue and SR 99 Northbound Off-ramp* Operations (2030 No Project). *Cumulative traffic growth without the project would cause the Childs Avenue and SR 99 Northbound Off-ramp to operate at an unacceptable LOS (LOS E or F) during both a.m. and p.m. peak hours.* This is a *cumulatively considerable impact that would occur without the proposed project.*

Mitigation Measure 6-4: Intersection of Childs Avenue and SR 99 Northbound Off-Ramp**.** This intersection would operate at LOS F under the 2010 Background and 2030 Cumulative No Project Conditions during both a.m. and p.m. peak hours. The intersection would also meet the peak hour traffic signal warrant under both 2010 Background and 2030 Cumulative No Project Conditions. In order to achieve acceptable levels of service under 2010 Background Conditions, the intersection would have to be signalized and the eastbound approach would have to widened to two lanes. The intersection would operate at acceptable levels of service under 2030 Cumulative No Project Conditions by adding the second westbound left-turn lane in addition to widening the eastbound approach. The improvement, however, may not be feasible within the existing right-of-way due to the overcross structure. The measures would improve the intersection to LOS C during the a.m. and p.m. peak hours under both the 2010 Background Conditions and the 2030 Cumulative No Project Conditions.

CUMULATIVE IMPACT Cumulative Traffic Impact— *Childs Avenue at SR 99 Southbound Off-ramp* Operations (2030 No Project). *Cumulative traffic growth without the project would cause the Childs Avenue at SR 99 Southbound Off-ramp to operate at an unacceptable LOS (LOS E or F) during both a.m. and p.m. peak hours.* This is a *cumulatively considerable impact that would occur without the proposed project.*

Mitigation Measure 6-5: Intersection of Childs Avenue and SR 99 Southbound Off-Ramp**.** This intersection would operate at LOS F during the p.m. peak hour and would meet a peak hour signal warrant under the 2010

Background Conditions. This intersection would operate at LOS F the 2030 Cumulative No Project Conditions during the both a.m. and p.m. peak hours.

The improvement would include adding a second left-turn lane to the southbound approach, adding a westbound left-turn lane, and that the intersection be signalized and coordinated with the intersection of Childs Avenue at SR 99 northbound off-ramp. This would improve the intersection to LOS C during the p.m. peak hour under the 2010 Background Conditions and for both peak hours for the 2030 Cumulative No Project Condition.

CUMULATIVE IMPACT Cumulative Traffic Impact—Childs Avenue at Parsons Avenue Intersection Operation (2030 No Project). *Cumulative traffic growth without the project would cause the Childs Avenue at Parsons Avenue intersection to operate at an unacceptable LOS (LOS E or F) during both a.m. and p.m. peak hours. This is a cumulatively considerable impact that would occur without the proposed project.*

Mitigation Measure 6-6: Intersection of Childs Avenue and Parsons Avenue**.** Under 2030 Cumulative No Project Conditions, traffic at the intersection would deteriorate to LOS E for both of the a.m. and p.m. peak hours. In order to achieve acceptable levels of service, the signalized intersection would need a revised signal timing plan as part of a regular signal maintenance routine. This would improve the intersection to operate at an acceptable LOS D during the a.m. and p.m. peak hours for the 2030 Cumulative No Project Condition.

All other intersections would continue to operate at acceptable LOS (LOS D or better).

Roadway Segment Operating Conditions

Table 6-4 summarizes the roadway segment operating level of service under the 2030 Cumulative No Project Condition. For more information on existing, 2010, and cumulative traffic conditions, please refer to Appendix E.

The addition of cumulative growth traffic would cause the roadway segment of SR 140 between Santa Fe Avenue and Kibby Road to deteriorate from LOS D to LOS E during the a.m. peak hour. All other study roadway segments would continue to operate at an acceptable LOS (LOS D or better).

CUMULATIVE IMPACT Cumulative Traffic Impact—Roadway Segment Operations (2030 No Project). *SR 140 between Santa Fe Avenue and Kibby Road.*

Mitigation Measure 6-7: SR 140 between Santa Fe Avenue and Kibby Road **.** It was determined that the roadway segment of SR 140 between Santa Fe Avenue and Kibby Road would deteriorate to LOS E under the 2030 Cumulative No Project Condition. Currently, the roadway is classified as a two-lane highway. By adding one lane in each direction in this segment, the roadway would be improved to operate at an acceptable LOS A. The widening of the roadway, however, may require right of way acquisition, the need for utility relocation, and approval by Caltrans.

CUMULATIVE IMPACT Cumulative Traffic Impact—Roadway Segment Operations (2030 No Project). *Tower Road between SR 140 and Gerard Avenue.*

Mitigation Measure 6-8: Tower Road between SR 140 and Gerard Avenue**.** Tower Road would be one of the truck access routes to the proposed Wal-Mart Distribution Center. Based on field observations, this roadway segment has poor pavement conditions, and the pavement markings along the middle of the road are faded. It is recommended that the roadway segment between SR 140 and Gerard Avenue be improved to address these issues.

Table 6-4
2030 Cumulative No Project Condition Roadway Segment-Level of Service Analysis

	Roadway Segment	Type of Facilities	Location	Measure of Effectiveness (MOE)	AM Peak Hour			PM Peak Hour		
					Volume (veh/hr)	MOE [a]	LOS [b]	Volume (veh/hr)	MOE	LOS
1.	SR 99	Freeway	from Mission Ave. to SR 140	Density (pc/mi/ln)	2531	17.4	C	3164	21.7	C
			from SR 140 to Mission Ave.	Density (pc/mi/ln)	2712	18.6	C	4173	28.7	D
2.	SR 140	Urban Class III	from SR 99 to Parsons Ave.	Travel Speed (mi/hr)	1179	29.2	B	989	31.9	A
			from Parsons Ave. to SR 99	Travel Speed (mi/hr)	959	32.2	A	924	32.6	A
		Urban Class II	from Parsons Ave. to Santa Fe Ave.	Travel Speed (mi/hr)	1096	39.1	A	919	39.6	A
			from Santa Fe Ave. to Parsons Ave.	Travel Speed (mi/hr)	1157	38.8	A	955	39.6	A
		Two-lane Highway Class I	between Santa Fe Ave. and Kibby Rd	Percent Time-Spent-Following	1871	82.3	E	1729	79.8	D
3.	Parson Avenue	Urban Class III	from Childs Avenue and SR 140	Travel Speed (mi/hr)	514	34.8	A	422	34.9	A
			from SR 140 and Childs Ave.	Travel Speed (mi/hr)	473	34.8	A	408	34.9	A
4.	Coffee Street	Urban Class IV	from Baker Dr. to Childs Ave.	Travel Speed (mi/hr)	96	30.0	A	92	30.0	A
			from Childs Ave. to Baker Dr.	Travel Speed (mi/hr)	200	30.0	A	50	30.0	A
		Urban Class IV	from Childs Ave. to Gerard Ave.	Travel Speed (mi/hr)	206	30.0	A	365	29.8	A
			from Gerard Ave. and Childs Ave.	Travel Speed (mi/hr)	270	29.9	A	232	30.0	A
5.	Gerard Avenue	Urban Class III	from Parson Ave. and Coffee Str.	Travel Speed (mi/hr)	157	35.0	A	148	35.0	A
			from Coffee Str. to Parson Ave.	Travel Speed (mi/hr)	60	35.0	A	59	35.0	A
		Urban Class II	from Coffee Str. to Project Site	Travel Speed (mi/hr)	350	40.0	A	305	40.0	A
			from Project Site to Coffee Str.	Travel Speed (mi/hr)	267	40.0	A	366	40.0	A
6.	Kibby Road	Urban Class II	from SR 140 to Childs Ave.	Travel Speed (mi/hr)	70	45.0	A	69	45.0	A
			from Childs Ave. to SR 140	Travel Speed (mi/hr)	110	45.0	A	76	45.0	A

Table 6-4
2030 Cumulative No Project Condition Roadway Segment-Level of Service Analysis

	Roadway Segment	Type of Facilities	Location	Measure of Effectiveness (MOE)	AM Peak Hour			PM Peak Hour		
					Volume (veh/hr)	MOE [a]	LOS [b]	Volume (veh/hr)	MOE	LOS
7.	Childs Avenue	Urban Class III	from SR 99 to Parsons Ave	Travel Speed (mi/hr)	1125	30.1	A	1013	31.6	A
			from Parsons Ave to SR 99	Travel Speed (mi/hr)	1109	30.3	A	1125	30.1	A
		Urban Class III	from Parsons Ave to Coffee Str	Travel Speed (mi/hr)	783	33.7	A	644	34.4	A
			from Coffee Str to Parsons Ave	Travel Speed (mi/hr)	850	33.2	A	770	33.8	A
		Urban Class II	from Coffee Str to Kibby Rd	Travel Speed (mi/hr)	297	40.0	A	221	40.0	A
			from Kibby Rd to Coffee Str	Travel Speed (mi/hr)	280	40.0	A	233	40.0	A
		Urban Class II	from Kibby Rd to Tower Rd	Travel Speed (mi/hr)	133	40.0	A	355	40.0	A
			from Tower Rd to Kibby Rd	Travel Speed (mi/hr)	231	40.0	A	236	40.0	A
8.	Campus Pkwy	Urban Class III	from Coffee Str to Gerard Ave	Travel Speed (mi/hr)	576	35.0	A	643	35.0	A
			from Gerard Ave to Coffee Str	Travel Speed (mi/hr)	707	34.9	A	1264	34.4	A
		Urban Class III	from Gerard Ave to Childs Ave	Travel Speed (mi/hr)	612	35.0	A	536	35.0	A
			from Childs Ave to Gerard Ave	Travel Speed (mi/hr)	554	35.0	A	464	35.0	A
		Urban Class III	from Childs Ave to SR 140	Travel Speed (mi/hr)	581	35.0	A	662	35.0	A
			from SR 140 to Childs Ave	Travel Speed (mi/hr)	528	35.0	A	494	35.0	A

Notes: a. MOE= Measures of Effectiveness. For freeway facilities, MOE is measured in density (passenger cars per mile per lane). For urban facilities, MOE is measured in travel speed (miles per hour). For two-lane highway facilities, MOE is measured in percent time-spent following (percent).
b. LOS = Level of Service is based on Transportation Research Board, Highway Capacity Manual 2000.

Source: DKS Associates

In addition, the Tower Road approaches to the intersection at Gerard Avenue (and the approaches along Gerard Avenue to Tower Road) should be improved to provide proper turning radii for standard trucks as classified under the Surface Transportation Assistance Act (STAA). It is also recommended that the intersection of Tower Road and SR 140 be widened to accommodate truck turning activities (such as providing turn bays and acceleration lane). The improvement would help maintain traffic flow on SR 140. As a Caltrans facility, the roadway widening on SR 140 would be required to follow Caltrans design standards and would need to be approved by Caltrans.2030 Cumulative No Project Condition Traffic Signal Warrant Analysis

CUMULATIVE IMPACT Cumulative Traffic Impact—Traffic Signal Operations (2030 No Project). *Based on the signal warrant analysis results, five study area intersections would meet the signal warrant during the a.m. and while four would meet the signal warrant during the p.m. peak hour.* This is a *cumulatively considerable impact that would occur without the proposed project.*

Table 6-5 summarizes the traffic signal warrant analysis performed at the five unsignalized intersections that would operate at unacceptable level of service under the 2030 Cumulative No Project Condition. Detailed traffic signal warrant analysis sheets are included in Appendix E. Based on the signal warrant analysis results; all of the five intersections would meet the signal warrant during the a.m. peak hour while four intersections would meet the signal warrant during the p.m. peak hour.

Table 6-5
2030 Cumulative No Project Condition Signal Warrant Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Criteria 1	Criteria 2	Warrant met?	Criteria 1	Criteria 2	Warrant met?
SR 140 / Baker Drive	No	**Yes**	**Yes**	No	**Yes**	**Yes**
SR 140 / Kibby Road	**Yes**	**Yes**	**Yes**	No	No	No
Childs Avenue / SR 99 Southbound Off-Ramp	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Childs Avenue / SR 99 Northbound Off-Ramp	No	**Yes**	**Yes**	No	**Yes**	**Yes**
Mission Avenue / Coffee Street	No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Source: DKS Associates 2008

2030 Cumulative with Project Condition

This section evaluates the 2030 Cumulative with Project Condition. In addition, all roadway improvements mentioned in the 2030 Cumulative Project Condition are assumed to be implemented and thus were included in this analysis.

An adjustment was made to the distribution and assignment of trips to account for the extension of the Campus Parkway corridor and to allow for more circulation via Campus Parkway rather than via Parsons Avenue. The truck trips were also adjusted to allow for circulation via Campus Parkway between SR 140 and Gerard Avenue rather than Tower Road.

Intersection Operating Conditions

Intersection operational levels of service along with their associated delays are summarized in Table 6-6. Appendix E includes the detailed calculation level of service analysis sheets, including the weekday a.m. and p.m.

peak hours. For more information on existing, 2010, and cumulative traffic conditions, please refer to Appendix E.

The study intersections that would operate at acceptable LOS (LOS D or better) under the 2030 Cumulative No Project Condition would continue to operate at acceptable LOS under the 2030 Cumulative with Project Condition with the exception of one intersection. At the intersection of Mission Avenue at SR 99 northbound off-ramp, the LOS would deteriorate from D to E.

For the intersections that would operate at LOS E or F under the 2030 Cumulative No Project Condition, the proposed project would not contribute more than five percent of the intersection total volume at any of the intersections during either the a.m. or p.m. peak hours. Overall, the proposed project would result in significant cumulative impacts at one intersection during the p.m. peak hour.

Table 6-6
2030 Cumulative with Project Condition Intersection Level of Service Analysis

No	Intersection Location	Control	AM Peak Hour				PM Peak Hour			
			Delay[a]	LOS[b]	% Vol Incr[c]	Project Impact	Delay	LOS	% Vol Incr[c]	Project Impact
1	SR 140 / Parsons Avenue	Signalized	93.1	F	1.2	No	38.7	D		No
2	SR 140 / Baker Drive	Unsignalized	5.8		1.5	No	6.6		2.0	No
	SB Approach		>50.0 [d]	F			>50.0	F		
	EB Left		10.3	B			9.7	A		
3	SR 140 / Kibby Road	Unsignalized	46.2		0.7	No	3.3		2.8	No
	NB Approach		>50.0	F			>50.0	F		
	SB Approach		>50.0	F			44.8	E		
	EB Left		9.6	A			9.2	A		
	WB Left		9.7	A			0.0	A		
4	Childs Avenue / SR 99 Southbound Off-Ramp	AWSC	>50.0	F	0.2	No	>50.0	F	0.6	No
5	Childs Avenue / SR 99 Northbound Off-Ramp	AWSC	>50.0	F	0.2	No	>50.0	F	0.9	No
6	Childs Avenue / Parsons Avenue	Signalized	66.4	E	0.4	No	64.8	E	1.2	No
7	Childs Avenue / Coffee Street	Signalized	28.6	C		No	32.7	C		No
8	Childs Avenue / Kibby Road	Unsignalized	2.5			No	1.8			No
	SB Approach		10.3	B			12.1	B		
	EB Left		7.7	A			7.8	A		
9	Childs Avenue / Tower Road	Unsignalized	1.7			No	2.1			No
	NB Approach		11.2	B			15.0	B		
	SB Approach		10.7	B			13.5	B		
	EB Left		7.6	A			7.7	A		
	WB Left		7.5	A			8.0	A		
10	Gerard Avenue / Coffee Street	AWSC [e]	9.5	A		No	10.0	A		No
11	Gerard Avenue / Tower Road	Unsignalized	7.1			No	7.5			No
	SB Approach		6.6	A			6.9	A		
	EB Left		7.3	A			7.7	A		
12	Childs Avenue / Campus Parkway	Signalized	25.5	C		No	27.8	C		No
13	Gerard Avenue / Campus Parkway	Signalized	31.0	C		No	51.2	D		No

Table 6-6
2030 Cumulative with Project Condition Intersection Level of Service Analysis

No	Intersection Location	Control	AM Peak Hour				PM Peak Hour			
			Delay[a]	LOS[b]	% Vol Incr[c]	Project Impact	Delay	LOS	% Vol Incr[c]	Project Impact
14	Mission Avenue / SR 99 Southbound Off-Ramp	Signalized	30.8	C		No	83.4	F	7.6	**Yes**
15	Mission Avenue / SR 99 Northbound Off-Ramp	Signalized	30.6	C		No	55.1	E		**Yes**
16	Mission Avenue / Coffee Street	Signalized	37.7	D		No	48.5	D		No

Notes: a. Delay is in seconds per vehicle. For signalized intersections, delay is based on average stopped delay. For unsignalized intersections, delay is based at the worst approach for two-way stop controlled intersection.
b. LOS = Level of Service
c. % Vol Incr = percent increase in the intersection traffic volumes due to the project trips. Percent increase is reported only at any of the intersections that would already operate at an unacceptable LOS without the project.
d. For unsignalized intersections, delays >50 are beyond the upper limits of LOS delay estimation equations under the HCM 2000 methodologies.
e. AWSC = All-way stop control
Source: DKS Associates 2008

PROJECT'S SHARE OF TRAFFIC

Table 6-7 provides a breakdown of project traffic for the purposes of calculating the fair share contribution towards any mitigation measures.

CUMULATIVE IMPACT Cumulative Traffic Impact—Intersection Operations (2030 with Project). *The study intersections that would operate at acceptable LOS (LOS D or better) under the 2030 Cumulative No Project Condition would continue to operate at acceptable LOS under the 2030 Cumulative with Project Condition with the exception of one intersection. At the intersection of Mission Avenue at SR 99 northbound off-ramp, the LOS would deteriorate from D to E.*

For the intersections that would operate at LOS E or F under the 2030 Cumulative No Project Condition, the proposed project would not contribute more than 5% of the intersection total volume. Therefore, the proposed project would result one significant impact at the study intersections. The impact to the intersection of Mission Avenue at SR 99 northbound off-ramp is a cumulatively considerable incremental contribution, and the project's cumulative impact would be ***significant****.*

Mitigation Measure 6-9: Mission Avenue at SR 99 northbound off-ramp. Restriping the northbound and westbound approaches would mitigate the impact at this intersection. It is proposed to restripe the northbound approach from a left-through turning movement and a right-only turning movement to a left-through-right turning movement and a right-only turning movement. The westbound approach would be restriped from two through lanes and one right-turn only lane to one through lane, one through-right lane, and one right-turn only lane. Restriping could be accomplished within the existing right-of-way.

With these mitigation measures, the intersection of Mission Avenue at SR 99 northbound off-ramps would operate under LOS C conditions, fully mitigating the impact occurring in the p.m. peak hour under 2030 Cumulative with Project Conditions.

Table 6-7
Project's Share of Traffic
2030 Cumulative with Project Condition

No	Study Intersection	Trips (veh/hr)						Percentages(%)					
		Project		2030 Cumulative		Total		Project		2030 Cumulative		Total	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	SR 140 / Parsons Avenue	31	41	2620	2302	2651	2343	1.2%	1.7%	98.8%	98.3%	100.0%	100.0%
2	SR 140 / Baker Drive	29	34	2028	1745	2057	1779	1.4%	1.9%	98.6%	98.1%	100.0%	100.0%
3	SR 140 / Kibby Road	13	43	1942	1580	1955	1623	0.7%	2.6%	99.3%	97.4%	100.0%	100.0%
4	Childs Avenue / SR 99 SB Off-Ramp	6	15	2588	2376	2594	2391	0.2%	0.6%	99.8%	99.4%	100.0%	100.0%
5	Childs Avenue / SR 99 NB Off-Ramp	7	25	2842	2725	2849	2750	0.2%	0.9%	99.8%	99.1%	100.0%	100.0%
6	Childs Avenue / Parsons Avenue	10	32	2765	2667	2775	2699	0.4%	1.2%	99.6%	98.8%	100.0%	100.0%
7	Childs Avenue / Coffee Street	9	32	1110	1075	1119	1107	0.8%	2.9%	99.2%	97.1%	100.0%	100.0%
8	Childs Avenue / Kibby Road	0	0	469	665	469	665	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%
9	Childs Avenue / Tower Road	23	77	405	679	428	756	5.4%	10.2%	94.6%	89.8%	100.0%	100.0%
10	Gerard Avenue / Coffee Street	5	18	693	749	698	767	0.7%	2.3%	99.3%	97.7%	100.0%	100.0%
11	Gerard Avenue / Tower Road	23	77	117	161	140	238	16.4%	32.4%	83.6%	67.6%	100.0%	100.0%
12	Mission Avenue / SR 99 SB Off-Ramps	165	165	2032	2332	2197	2497	7.5%	6.6%	92.5%	93.4%	100.0%	100.0%
13	Mission Avenue / SR 99 NB Off-Ramps	263	317	2656	3447	2919	3764	9.0%	8.4%	91.0%	91.6%	100.0%	100.0%
14	Mission Avenue / Coffee Street	262	317	2665	3493	2927	3810	9.0%	8.3%	91.0%	91.7%	100.0%	100.0%
15	Campus Parkway / Childs Avenue	300	383	1876	1916	2176	2299	13.8%	16.7%	86.2%	83.3%	100.0%	100.0%
16	Campus Parkway / Childs Avenue	33	48	1397	1415	1430	1463	2.3%	3.3%	97.7%	96.7%	100.0%	100.0%

Roadway Segment Operating Conditions

Table 6-8 provides a summary of the roadway segments operation conditions. For more information on existing, 2010, and cumulative traffic conditions, please refer to Appendix E.

CUMULATIVE IMPACT

Cumulative Traffic Impact—SR 140 Between Santa Fe Avenue and Kibby Road Roadway Segment Operations (2030 with Project). *The addition of project traffic would cause the segment of SR 140 between Santa Fe Avenue and Kibby Road to deteriorate from LOS D under the 2030 Cumulative No Project Condition to LOS E during the p.m. peak hour. All other study roadway segments would operate at an acceptable LOS (LOS D or better). The impact to SR 140 is a cumulatively considerable incremental contribution, and the project's cumulative impact would be* ***significant****.*

Mitigation Measure 6-10: SR 140 between Santa Fe Avenue and Kibby Road. The addition of project traffic would cause the segment of SR 140 between Santa Fe Avenue and Kibby Road to deteriorate from LOS D under the 2030 Cumulative No Project Condition to LOS E during the p.m. peak hour. All other study roadway segments would operate at an acceptable LOS (LOS D or better). The level of service on SR 140 between Santa Fe Avenue and Kibby Road is a significant cumulative impact. The project's contribution to this significant impact is cumulatively considerable; therefore, the project's cumulative impact would be ***significant***.

By adding one lane in each direction in this segment, the roadway would be improved to operate at an acceptable LOS A. The widening of the roadway, however, may require right of way acquisition, the need for utility relocation and, approval by Caltrans.

With implementation of this mitigation measure, the cumulative impact would be reduced to a ***less-than-significant*** level.

2030 Cumulative with Project Condition Traffic Signal Warrant Analysis

CUMULATIVE IMPACT

Cumulative Traffic Impact—Traffic Signal Operations (2030 with Project). Based on the signal warrant analysis results, all of five study area intersections would meet the signal warrant during the a.m. peak hour while four intersection would meet the signal warrant during the p.m. peak hour. The project's contribution to these intersections is a cumulatively considerable incremental contribution, and the project's cumulative impact would be ***significant****.*

Table 6-9 summarizes the traffic signal warrant analysis performed at the five unsignalized intersections that would operate at an unacceptable level of service under the 2030 Cumulative No Project Condition. For more information on existing, 2010, and cumulative traffic conditions, please refer to Appendix E. Similar to the 2030 Cumulative No Project Condition, a signal warrant would be met at all five of these intersections during the a.m. peak hour and four intersections during the p.m. peak hour.

Impacts to these intersections will be reduced to a ***less-than-significant*** level by mitigation measures 6-9, 6-10, and 6-11.

Table 6-9
2030 Cumulative with Project Condition Signal Warrant Analysis

Intersection	AM Peak Hour			PM Peak Hour		
	Criteria 1	Criteria 2	Warrant met?	Criteria 1	Criteria 2	Warrant met?
SR 140 / Baker Drive	No	**Yes**	**Yes**	No	**Yes**	**Yes**
SR 140 / Kibby Road	**Yes**	**Yes**	**Yes**	No	No	No
Childs Avenue / SR 99 Southbound Off-Ramp	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Childs Avenue / SR 99 Northbound Off-Ramp	No	**Yes**	**Yes**	No	**Yes**	**Yes**
Mission Avenue/ Coffee Street	No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Source: DKS Associates 2008

Table 6-8
2030 Cumulative with Project Condition Roadway Segment-Level of Service Analysis

	Roadway Segment	Type of Facilities	Location	Measure of Effectiveness (MOE)	AM Peak Hour			PM Peak Hour		
					Volume (veh/hr)	MOE [a]	LOS [b]	Volume (veh/hr)	MOE	LOS
1.	SR 99	Freeway	from Mission Ave. to SR 140	Density (pc/mi/ln)	2531	17.4	C	3164	21.7	C
			from SR 140 to Mission Ave.	Density (pc/mi/ln)	2773	19.0	C	4208	29.0	D
2.	SR 140	Urban Class III	from SR 99 to Parsons Ave.	Travel Speed (mi/hr)	1196	28.9	B	999	31.8	A
			from Parsons Ave. to SR 99	Travel Speed (mi/hr)	973	32.1	A	955	32.3	A
		Urban Class II	from Parsons Ave. to Santa Fe Ave.	Travel Speed (mi/hr)	1109	39.1	A	944	39.6	A
			from Santa Fe Ave. to Parsons Ave.	Travel Speed (mi/hr)	1173	38.8	A	964	39.5	A
		Two-lane Highway Class I	from Santa Fe Ave. to Kibby Rd	Percent Time-Spent-Following	1899	82.7	E	1766	80.5	E
3.	Parson Avenue	Urban Class III	from Childs Avenue and SR 140	Travel Speed (mi/hr)	515	34.7	A	428	34.9	A
			from SR 140 and Childs Ave.	Travel Speed (mi/hr)	474	34.8	A	409	34.9	A
4.	Coffee Street	Urban Class IV	from Baker Dr. to Childs Ave.	Travel Speed (mi/hr)	96	30.0	A	92	30.0	A
			from Childs Ave. to Baker Dr.	Travel Speed (mi/hr)	200	30.0	A	50	30.0	A
		Urban Class IV	from Childs Ave. to Gerard Ave.	Travel Speed (mi/hr)	208	30.0	A	381	29.8	A
			from Gerard Ave. and Childs Ave.	Travel Speed (mi/hr)	273	29.9	A	234	30.0	A
5.	Gerard Avenue	Urban Class III	from Parson Ave. and Coffee Str.	Travel Speed (mi/hr)	157	35.0	A	148	35.0	A
			from Coffee Str. to Parson Ave.	Travel Speed (mi/hr)	60	35	A	59	35	A
		Urban Class II	from Coffee Str. to Project Site	Travel Speed (mi/hr)	353	40.0	A	307	40.0	A
			from Project Site to Coffee Str.	Travel Speed (mi/hr)	269	40.0	A	382	40.0	A
6.	Kibby Road	Urban Class II	from SR 140 to Childs Ave.	Travel Speed (mi/hr)	70	45.0	A	69	45.0	A
			from Childs Ave. to SR 140	Travel Speed (mi/hr)	110	45.0	A	76	45.0	A

Table 6-8
2030 Cumulative with Project Condition Roadway Segment-Level of Service Analysis

	Roadway Segment	Type of Facilities	Location	Measure of Effectiveness (MOE)	AM Peak Hour			PM Peak Hour		
					Volume (veh/hr)	MOE [a]	LOS [b]	Volume (veh/hr)	MOE	LOS
7.	Childs Avenue	Urban Class III	from SR 99 to Parsons Ave	Travel Speed (mi/hr)	1130	30.0	B	1015	31.6	A
			from Parsons Ave to SR 99	Travel Speed (mi/hr)	1112	30.3	A	1148	29.7	B
		Urban Class III	from Parsons Ave to Coffee Str	Travel Speed (mi/hr)	789	33.7	A	647	34.4	A
			from Coffee Str to Parsons Ave	Travel Speed (mi/hr)	854	33.2	A	799	33.6	A
		Urban Class II	from Coffee Str to Kibby Rd	Travel Speed (mi/hr)	300	40.0	A	222	40.0	A
			from Kibby Rd to Coffee Str	Travel Speed (mi/hr)	281	40.0	A	246	40.0	A
		Urban Class II	from Kibby Rd to Tower Rd	Travel Speed (mi/hr)	133	40.0	A	355	40.0	A
			from Tower Rd to Kibby Rd	Travel Speed (mi/hr)	231	40.0	A	236	40.0	A
8.	Campus Pkwy	Urban Class III	from Coffee Str to Gerard Ave	Travel Speed (mi/hr)	722	34.9	A	729	34.9	A
			from Gerard Ave to Coffee Str	Travel Speed (mi/hr)	823	34.9	A	1495	33.9	A
		Urban Class III	from Gerard Ave to Childs Ave	Travel Speed (mi/hr)	626	35.0	A	573	35.0	A
			from Childs Ave to Gerard Ave	Travel Speed (mi/hr)	573	35.0	A	475	35.0	A
		Urban Class III	from Childs Ave to SR 140	Travel Speed (mi/hr)	594	35.0	A	687	35.0	A
			from SR 140 to Childs Ave	Travel Speed (mi/hr)	544	35.0	A	503	35.0	A

Notes: a. MOE= Measures of Effectiveness. For freeway facilities, MOE is measured in density (passenger cars per mile per lane). For urban facilities, MOE is measured in travel speed (miles per hour). For two-lane highway facilities, MOE is measured in percent time-spent following (percent).
b. LOS = Level of Service is based on Transportation Research Board, Highway Capacity Manual 2000.
Source: DKS Associates 2008

CUMULATIVE IMPACT *Cumulative Traffic Impact -Tower Road between SR 140 and Gerard Avenue. Tower Road would be one of the truck access routes to the proposed Wal-Mart Distribution Center. Based on field observations, this roadway segment currently has poor pavement conditions, and the pavement markings along the middle of the road are faded. The project's contribution to these intersections is a cumulatively considerable incremental contribution, and the project's cumulative impact would be* ***significant****.*

Mitigation Measure 6-11: It is recommended that the roadway segment between SR 140 and Gerard Avenue be improved to address these issues. In addition, the Tower Road approaches to the intersection at Gerard Avenue (and the approaches along Gerard Avenue to Tower Road) should be improved to provide proper turning radii for standard trucks as classified under the Surface Transportation Assistance Act (STAA). The project would be responsible for paying its fair share contribution toward this implementation measure.

With implementation of the mitigation measure, the impact would be reduced to a ***less-than-significant*** level.

VISUAL RESOURCES

CUMULATIVE IMPACT Cumulative Visual Impact. *The cumulative change of agricultural and open space views in the project region to urban land uses and the associated increase in nighttime light and glare and subsequent skyglow from past and planned future projects* is a *cumulatively considerable incremental contribution, and the project's cumulative impact would be* ***significant****.*

Past and future urban development has changed, and will continue to alter, the visual character along roadway corridors in both the City and County. Generally speaking, these changes involve the replacement of grazing/rural lands and vast areas of open space to urban uses, thus altering and limiting the open space views available to motorists along these roadways and residents living in the area. This trend will continue as future development projects are constructed in the region and in the City as a whole, consistent with growth planned in the City and County General Plans.

From a cumulative standpoint, substantial changes in visual conditions will continue as agricultural lands and open space are replaced by urban development. Increased urban development will also lead to increased nighttime light and glare and subsequent skyglow in the region and more limited views of the night sky.

Although these cumulative impacts can be minimized to a degree through topographic screening of structures, use of outdoor lighting that limits glare, appropriate building design, and other measures, the significant cumulative impact cannot be fully mitigated. The cumulative change of agricultural and open-space views in the project region to urban land uses and the associated increase in nighttime light and glare and subsequent skyglow from past and planned future projects is a significant cumulative impact. The project's incremental contribution to these impacts is cumulatively considerable, and the project's cumulative impact is therefore considered ***significant***.

6.2 GROWTH-INDUCING IMPACTS

6.2.1 REQUIREMENT FOR ANALYSIS OF GROWTH-INDUCING IMPACTS

According to Section 15126.2(d) of the State CEQA Guidelines, an EIR must discuss the growth-inducing impacts of the proposed project. Specifically, CEQA states that the EIR shall:

Discuss ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring the construction of new facilities that could cause significant environmental effects.

Also discuss characteristics of some projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement would result, for instance, if implementing a project resulted in substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises); or a construction effort with substantial short-term employment opportunities that indirectly stimulates the need for additional housing and services to support the new employment demand; and/or removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

Growth inducement itself is not an environmental effect but may lead to environmental effects. These environmental effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, or conversion of agricultural and open space land to urban uses.

6.2.2 GROWTH INDUCING IMPACTS OF THE PROPOSED PROJECT

The project site is located within the jurisdictional boundaries of the City of Merced, and is contiguous with the City limit line on the eastern edge. Land immediately to the east of the site within the jurisdiction of the County of Merced is designated General Agriculture on the County General Plan and zoning maps; however, this area is within the City's Sphere of Influence and Specific Urban Development Plan. As such, there is a potential for this area to ultimately be annexed to the City of Merced, particularly when development is proposed.

As discussed in Sections 3.0 and 4.7, the project site and immediately surrounds lands are designated by the City of Merced for industrial uses. The City General Plan designates the site Industrial and the zoning ordinance indicates Heavy Industrial zoning. The proposed regional distribution center would be consistent with both the General Plan and zoning designations for the site.

The project site adjoins existing and planned public roadways. In particular, the site is in close proximity to Campus Parkway and the Mission Avenue/SR 99 interchange that will serve the area, including the proposed project. Since roadways serving the site were previously in existence and Campus Parkway and the Mission Avenue/SR 99 interchange were planned to be constructed before the application for the Wal-Mart Distribution Center was submitted, and are scheduled to be completed before the distribution center opens, the proposed project would not have a growth-inducing effect on roadway infrastructure.

As described in Section 4.12, public water and wastewater infrastructure is in close proximity to the project site. For example, there are 16-inch diameter water lines in Childs Avenue and in Kibby Road, and a 16-inch line exists within the Kibby Road right-of-way that transects the site. With regard to wastewater infrastructure, there is a 12-inch line in Childs, a 36-inch line in Gerard Avenue, and a 30-inch line in Kibby. Like the water line, the wastewater line transects the site within the Kibby Road right-of-way. Currently, there are no public storm drain facilities in close proximity to the site. Other critical utility infrastructure, such as electricity, natural gas, and telecommunication are in place near the site.

The proposed project would bring construction workers to the project site for each development phase. Because construction workers typically do not change where they live each time they are assigned to a new construction site, it is not anticipated that there would be any substantial relocation of construction workers to the City or Merced County associated with construction of the Wal-Mart Regional Distribution Center. According to the US Census, in 2000 there were 1,272 City residents and 5,081 County residents working in the construction industry. The existing number of residents in the City and Merced County who are employed in the construction

industry would likely be sufficient to meet the demand for construction workers that would be generated by the proposed project. Moreover, as noted elsewhere, as of May 2006 Merced County has a high unemployment rate of 8.9% (compared to 4.6% for California), which is likely to include persons trained in or suitable for employment in the construction industry. No substantial increase in demand for housing or goods and services would be created by project construction workers, and thus no growth inducement associated with construction workers would be expected.

The effect the proposed project would have on other public services, such as schools, police, fire, library and general municipal services, has been analyzed in Section 4.12. As noted, there is no anticipated significant impact that would require mitigation. Fire, protection, law enforcement, and other City services would be expanded only as necessary to meet project demand. In particular, as discussed in Section 4.12, existing police and fire protection services have sufficient capacity to serve the proposed project. In addition, the project would be required to pay fees to ensure adequate facilities and services are in place to meet project demands. Because adequate public services are available to serve the project or the proposed project would provide or ensure that additional public services would be available to meet project demands (i.e., police, fire), the project would not facilitate additional development requiring public services.

As noted in the Project Description (Section 3.0), the proposed project would not include a resident population and would not be a retail outlet for goods and services. Any growth-inducing effect the proposed regional distribution center may have relative to new Wal-Mart retail stores in the area or beyond is difficult to accurately determine. The proposed project can be viewed as a means to simply improve the service to existing retail outlets, given the fact that proximity to a distribution warehouse in and of itself and in the absence of consumer demand is not likely to warrant construction of a new retail facility.

Inasmuch as the proposed project would be one of the first large employers in this industrial area of Merced, it is probable that commercial uses that can service the needs of the truck drivers and anticipated 1,200 employees of the distribution center would seek location nearby. To the extent allowed by City zoning code, uses might be expected to include convenience stores, gasoline service stations, restaurants, and other retail establishments that would serve frequently recurring needs of employees and truck drivers. Development of this type would not be expected to cause significant environmental impacts based on daily operations. For example, these retail uses would not likely attract motorists not associated with the distribution center; therefore, there would be no appreciable increase in traffic. Development of new sites in the area could have impacts on resources such as wetlands, plants, and animals; however, it is anticipated that much of the demand for small retail would be accommodated by the proposed Merced Gateway Project.

In summary, growth inducement associated with the project is likely to be focused on retail services that serve the needs of the employees and vendors of the distribution center. The proposed project is not expected to induce growth of nearby industrial lands. Growth potential for industrial development on surrounding lands has been evaluated and provided for in the City General Plan and other relevant planning documents.

6.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE CAUSED BY THE PROPOSED PROJECT

CEQA (Public Resources Code Section 21100[b][2]) provides that an EIR shall include a detailed statement setting forth "[i]n a separate section…[a]ny significant effects on the environment that would be irreversible if the project is implemented." State CEQA Guidelines Section 15126.2(c) provides the following guidelines for analyzing the significant irreversible environmental changes of a project:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irretrievable

damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The proposed project would use both renewable and nonrenewable natural resources for project construction and operation. The proposed project would use nonrenewable fossil fuels in the form of oil and gasoline during construction and operation. Other nonrenewable and slowly-renewable resources consumed as a result of project development would include, but not necessarily be limited to, lumber and other forest products, sand and gravel, asphalt, petrochemical construction materials, steel, copper, lead, and water.

The proposed project is not anticipated to result in irreversible damage from environmental accidents, such as an accidental spill or explosion of a hazardous material. During construction, equipment would be using various types of fuel and material classified as hazardous. In the State of California, the storage and use of hazardous substances are strictly regulated and enforced by various local, regional, and state agencies. The enforcement of these existing regulations would preclude anticipated significant project impacts related to environmental accidents.

While the project site is designated for industrial use, the proposed project involves conversion of 230 acres of agricultural land to urban uses. This change in land use would represent a long-term commitment to urbanization, as the potential for developed land to be reverted back to productive agricultural land use is highly unlikely. From a cumulative standpoint, as noted earlier in this section, this conversion would also result in an irreversible loss of habitat for Swainson's hawk and burrowing owl, both special-status species, and a cumulative loss of the visual resource open agricultural land affords.

As described earlier in this section, vehicle movements resulting from the project would result in significant cumulative traffic impacts on certain study area intersection operations and on the roadway level of service of a segment of SR 140. Related to vehicle trips, as noted in Section 4.2, air emissions from project traffic would exceed SJVAPCD thresholds of significance for reactive organic gases and nitrogen oxides, resulting in a significant impact both during construction (short-term impact) and during project operations (long-term impact). Vehicle trips associated with the project would also result in a net gain in greenhouse gas emissions, thus contributing to global warming. A final impact related to vehicle traffic resulting from the proposed project is a significant noise impact on sensitive receptors along certain roadways.

6.4 UNAVOIDABLE SIGNIFICANT IMPACTS

Section 21100(b)(2)(A) of the Public Resources Code (PRC) provides that an EIR shall include a detailed statement setting forth "in a separate section any significant effect on the environment that cannot be avoided if the project is implemented." Accordingly, a summary of significant environmental impacts of the project that cannot be mitigated to a less-than-significant level is provided, as follows.

CONVERSION OF FARMLAND

As described under Impact 4.1-1, conversion of Prime soils to nonagricultural production uses is considered a significant adverse impact under CEQA. The General Plan EIR states that future industrial, residential, and service area needs must be met through the provision of urban land uses with adequate infrastructure. Compact urban development, as concluded by a report prepared by the American Farmland Trust (Alternatives for Future Urban Growth in California's Central Valley), results in less agricultural land conversion than low-density "sprawl" type of development. The General Plan EIR concludes that to achieve the goals of maintaining a compact urban form, and other types of land-use compatibility issues, mitigation that would eliminate this loss is not possible.

Impacts related to direct conversion of farmland have been quantified according to several criteria using the California Land Evaluation and Site Assessment model, as described below. Using methodology recommended

by DOC, the LESA model is used to assess the significance of agricultural land conversion resulting from implementation of the proposed project. In Section IV of the LESA Instructional Manual, the significance of project impacts is characterized in the following manner.

The LESA model was used to analyze the project site, and the project scored an 88.4 with subtotals of 43.4 and 45 for the land evaluation and site assessment portions, respectively. Based on the scoring established by the state, this is considered significant. Furthermore, the project would result in the conversion of approximately 228.68 acres of farmland, as defined by CEQA, which is also considered a significant impact. Because of the project would result in the conversion of 228.68 acres of Farmland and the significant LESA score, the effect on Farmland is considered a significant impact. Furthermore, industrial uses adjacent to agricultural land can result in land use conflicts and create incentives for agricultural producers to discontinue agricultural operations and sell their land for development.

The proposed project would be within the Merced city limits on the fringe of existing development in the southeast portion of the City, with a large amount of the surrounding land uses in agriculture, but the area also includes adjacent industrial uses. The proposed project would be located in an area that is planned for future industrial development, according to the General Plan. The site is surrounded to the east, south, and west by other agricultural uses. To the north are two existing manufacturing and industrial businesses. Further to the northwest is the City of Merced, which is primarily urbanized.

As mentioned previously, placing industrial adjacent to agriculture can produce land use conflicts and can lead to increased conversion of agricultural land. Approximately 70% of the project site consists of Prime Farmland, the conversion of which would be considered a ***significant*** impact.

The City's General Plan EIR further concludes that to achieve the goals of maintaining a compact urban form, and other types of land-use compatibility issues, mitigation that would eliminate the loss of agricultural land to urban development is not possible. Furthermore, while protection of Farmland through purchase of voluntary farmland conservation easements can help to reduce the level of impact that the loss of farmland associated with this project would have, it would not fully compensate for the direct loss of agricultural land in Merced and the region. Therefore, because no mitigation is available to reduce this impact, the project would result in a ***significant and unavoidable*** impact. This conclusion is consistent with the conclusion of the EIR prepared for the Merced Vision 2015 General Plan. It should be noted that the City considered the significant impact associated with the conversion of farmland resulting from buildout of the General Plan and adopted a Statement of Overriding Considerations (Resolution No. 97-22).

OPERATIONAL TRAFFIC NOISE

As discussed under Impact 4.8-3, the increase in daily traffic volumes resulting from implementation of the proposed project would generate increased noise levels along nearby roadway segments. Project-generated traffic would result in a noticeable increase in traffic noise levels (i.e., greater than 3 dBA) on six of the modeled roadway segments (i.e., Gerard Avenue between Campus Parkway and project site entrances, Gerard Avenue between the project site entrances and Tower Road, Mission Avenue between SR 99 and Coffee Street, Campus Parkway between Coffee Street and Gerard Avenue, Tower Road between Gerard Avenue and Childs Avenue, Tower Road between Childs Avenue and SR140).

The traffic noise level 100 feet from the segment of Tower Road between Gerard Avenue and Childs Avenue would increase from 45.5 to 57.2 dBA L_{dn} under baseline 2010 conditions (modeling provided in Appendix D). While the resultant noise levels at the houses located along both road segments would be less than the County's land use compatibility threshold of 65 dBA L_{dn}, the L_{dn} increase at both sensitive receptors would be noticeable (i.e., greater than 3 dBA). Furthermore, because the size of the noise level increase along both Tower Road between Gerard Avenue and Childs Avenue would be greater than 10 dBA, it would be perceived as a doubling of the sound level (Egan 1988). The traffic noise level along Tower Road between Gerard Avenue and Childs

Avenue would be 53.2 dBA $CNELL_{dn}$, which is a 7.7 dBA increase compared to Baseline 2030 conditions, and the traffic noise level along Tower Road between Childs Avenue and SR 140 would be 52.9 dBA $CNELL_{dn}$, which is a 7.4 dBA increase compared to Baseline 2030 conditions. These increases are due to the fact that the project would continue to generate some employee-based trips on Tower Road. Because the noise level increases would be noticeable (i.e., greater than 3 dBA) at both residences along Tower Road, during both the near-term and long-term baseline conditions, they would be considered a ***significant impact***.

The traffic noise level along the segment of Gerard Avenue between Campus Parkway and the project site entrances would increase from 56.5 to 66.9 dBA L_{dn}/CNEL at a distance of 100 feet from the road under baseline 2010 conditions, as shown in Table 4.8-11. This segment passes by only one off-site sensitive receptor, a farm house located approximately 95 feet south of the road and within the city limits. At this distance the resultant noise level would be approximately 67.3 dBA L_{dn}/CNEL, which exceeds the City's "normally acceptable" standard of 60 dBA L_{dn}/CNEL for residential land uses. Assuming a typical exterior-to-interior noise reduction of 25 dBA, the interior noise level at this residence would be 42.3 dBA L_{dn}/CNEL, which is less than the interior noise level standard of 45 dBA L_{dn}/CNEL. Nonetheless, the 10.5 dBA increase in the exterior L_{dn}/CNEL noise level would be perceived as a doubling of sound (i.e., greater than 10 dBA). As a result, the traffic noise level increase at this farmhouse would be considered a ***significant impact***.

The traffic noise level would increase by 10.4 dBA along the segment of Gerard Avenue between the project site entrances and Tower Road, by 4.6 dBA along the segment of Campus Parkway between Coffee Street and Gerard Avenue, and by 3.7 dBA along the segment of Mission Avenue between SR 140 and Coffee Street; however, there are no existing or planned noise-sensitive receptors located along these road segments.

Mitigation Measure 4.8-3 requires the developer to implement the following measures to reduce the exposure of existing sensitive receptors to project-generated traffic noise levels:

- The applicant shall offer the owners of the two affected residences on the east side of Tower Road between SR 140 and Gerard Avenue and the single residence located on the south side of Gerard Avenue between Campus Parkway and the project site entrances the installation of a sound barrier along the property line of their affected residential properties. The sound barriers must be constructed of solid material (e.g., wood, brick, adobe, an earthen berm, or combination thereof). All barriers shall blend into the overall landscape and have an aesthetically pleasing appearance that agrees with the color and rural character of the houses and the general area, and not become the dominant visual element of the community. Relocation of the driveway at each residence may be necessary in order to preclude having gaps in the sound barrier. Relocation of landscaping may also be necessary to achieve an aesthetically pleasing appearance. The owners of the affected properties may choose to refuse this offer; however, the offer shall be made available to subsequent owners of the property. If an existing owner refuses these measures a deed notice must be included with any future sale of the property to comply with California state real estate law, which requires that sellers of real property disclose "any fact materially affecting the value and desirability of the property" (California Civil Code, Section 1102.1[a]) and shall indicate that the applicant agrees to install a sound barrier, as described above.. The applicant shall be responsible for all costs incurred by the implementation of this mitigation measure.

- To ensure compliance with applicable noise standards, a site-specific noise study shall be conducted by the City or its approved consultant to determine specific noise barrier design. The applicant shall be responsible for all costs incurred by the implementation of this mitigation measure.

- The cost to fully implement this mitigation measure, including related studies, and design and installation shall be completely funded by the applicant.

- The applicant shall maintain its truck fleet in proper working condition, including truck mufflers and exhaust systems, according to manufacturers' specifications.

The sound barriers required along the east side of Tower Road by Mitigation Measure 4.8-3 are considered feasible because they would need to achieve a minimum 4.7 dBA reduction to minimize the traffic noise increase to a less-than-significant level under baseline 2030 conditions (i.e., to an increase smaller than 3 dBA)*;* however, this would not occur until some of the project-generated traffic is diverted to the future extended Campus Parkway. Until the completion of Campus Parkway north of Childs Road, a reduction of 8.8 dBA would be needed at the house located on the segment of Tower Road between Gerard Avenue and Childs Avenue and a reduction of 5.1 dBA would be needed along the segment of Tower Road between Childs Avenue and SR 140 to offset noticeable traffic noise increases. Because it would not be feasible to design sound barriers that provide 8.3 dBA levels of reduction and meet the required aesthetic and design elements required by Mitigation Measure 4.8-3, this impact would be considered ***significant and unavoidable*** **until Campus Parkway is extended to SR 140**.

The sound barriers study required by Mitigation Measure 4.8-3 along the south side of the segment of Gerard Avenue between Campus Parkway and the project site entrances would provide some protection against the increased levels of traffic noise generated by the project; however, these barriers would not provide enough reduction to offset the 15.210.5 dBA traffic noise level increase along this road segment. Therefore, because it would not be possible to design a sound barrier that provides enough reduction to reduce the resultant noise level to less than the City's "normally acceptable" standard of 60 dBA L_{dn}/CNEL for residential land uses and meet the required aesthetic and design requirements, this impact would be considered ***significant and unavoidable***.

GREENHOUSE GAS EMISSION

As indicated under Impact 4.2-6, construction of the project would generate approximately 5,226.7 tons of CO_2 during the 12-month construction period. Though the construction period is projected to last for one year, the CO_2 emissions generated during that year-long period would persist in the atmosphere for much longer periods of time, on the order of tens to hundreds of years. Operation of the project would generate annual emissions of approximately 12,595 tons of CO_2 during each year of the life of the project. There are no adopted numeric thresholds above or below which a significant increase in greenhouse gas emissions would occur. Absent this type of guidance, and given the cumulative nature of contribution of these emissions to global climate change, these levels would constitute a considerable net increase in GHG emissions. In addition, this increase could conflict with the state's AB 32 goals, which require reductions in statewide GHG emission levels. As a result, this impact would be ***significant.***

The applicant is required to implement Mitigation Measures 4.2-6a through 4.2-6d, which include a variety of emission reduction measures and offsets; however, at the time of preparing this EIR, these reductions cannot be fully quantified. In addition, implementation of Mitigation Measure 4.2-1c and Mitigation Measure 4.2-2e, which require the Applicant to implement an emissions reduction agreement with SJVAPCD to reduce construction and operational emissions of ROG and NO_X to less than the SJVAPCD-established threshold for ROG and NO_X 10 TPY, will have the added benefit of reducing construction and operational GHG emissions. However, the size of the associated GHG reduction cannot be quantified at the time of writing this EIR and, more significantly, there is not established methodology for verifying the associated GHG reductions from emission reduction agreements. Moreover, the net increase in GHG emissions would may still be of an amount that would be considered substantial. Because the project would potentially still result in a net increase in CO_2 emission levels and conflict with the state's AB 32 goals, this impact would be remain ***significant and unavoidable***.

DEGRADATION OF VISUAL CHARACTER

As described under Impact 4.13-2, the site contains agricultural fields, fallow agricultural lands, and orchard trees that cover much of the 230 acres of the project site. Various aspects of project development have the potential to alter views of the project site. Grading activities and construction of buildings and appurtenant structures have the greatest potential for creating such impacts. While the existing project vicinity is predominately agricultural uses, two existing manufacturing warehouses are located directly north of the project site, and continuing progressively northward is the urbanized area of Merced. Extending southward from the project site are existing, primarily

agricultural uses and scattered agricultural and residential units. The project site is not readily visible from State Route 99, which is approximately 2 miles west of the site.

The proposed project would involve grading of most of the site, thus removing the existing crops and orchard trees. Buildings up to 40 feet in height with wide horizontal surfaces would be constructed, along with storage tanks. Numerous vehicles, including large tractor trailers, would be visible on the site at any given time, and large portions of the site would be paved to accommodate vehicle and pedestrian movement. Landscaping is expected to be added, which may soften and obscure buildings to some degree; however, details are not known at this time. Nonetheless, the site is similar to other agricultural land in the Merced area and does not contain any notable visual resources. Moreover, proposed development will not block any scenic vista. However, implementation of the proposed project would degrade the existing character of the project site, replacing undeveloped orchards and agricultural fields with industrial development, and would consequently result in a ***significant and unavoidable*** impact.

The City has nine areas throughout its planning area designated as Scenic Corridors. None of these corridors includes the project site. The project site is not visible from State Route 99, located approximately 2 miles west of the site, nor is this highway considered scenic. Therefore, the project site is not readily visible from a designated State Scenic Highway and the project would not have an adverse visual impact on a scenic vista or substantially degrade a scenic resource. The project would result in a ***significant and unavoidable*** impact.

Although impacts would be significant and unavoidable after mitigation, Mitigation Measure 4.13-2 is included to reduce impacts to the extent feasible. This mitigation measure requires the applicant to prepare and submit and landscaping plan to the satisfaction of the City that includes the following features and accomplishes the following objectives on the site

- The developer shall plant trees (minimum 15 gallon) no further than 30 feet apart, on site along the perimeter roads surrounding the project site, including Childs Avenue, Gerard Avenue, and Tower Road. These trees are in addition to the street trees required every 40 feet per City Standards. Shrubs and turf shall be combined with the trees in a minimum 15-foot wide landscape strip along the entire project perimeter which abut public streets. Irrigation shall be provided to all landscape areas. A detailed landscape and irrigation plan per MMC 17.60 shall be approved by City staff at the building permit stage.

- Parking lot trees at a minimum of one for each six spaces (per MMC 20.58.385) shall be required in all employee and visitor parking areas on site. Parking lot trees, however, shall not be required in truck or trailer parking areas.

- Existing almond trees shall be preserved in any areas of the site that are to be left undeveloped by buildings, parking areas, driveways, drainage basins, etc. The developer shall submit a plan showing the location of existing trees and the proposed development and the City shall approve a plan at the building permit stage for preserving as many trees as feasible.

- Landscaping along the entire site perimeter shall consist of a combination of evergreen and deciduous trees, and shrubs that will interrupt views of the site from adjoining roadways.

- Landscaping consisting of a combination of evergreen and deciduous trees, and shrubs shall be provided within the boundaries of all parking areas.

- Landscaping consisting of a combination of evergreen and deciduous trees shall be provided in planters in front of all building walls to soften the appearance of the vertical surfaces. All vegetation shall be maintained by an automatic irrigation system. The landscaping and irrigation plans and details shall be subject to review and approval by the City. The City shall create and adopt a mechanism that will ensure that Wal-Mart Stores East, LP maintains the landscaping in accordance with the adopted plan.

The impact remains ***significant and unavoidable*** following mitigation.

CUMULATIVE IMPACTS

The following cumulative impacts are identified earlier in this section as "significant."

- Cumulative Agricultural Land Impact
- Cumulative Air Quality Impact (Greenhouse Gas Emissions)
- Cumulative Biological Resources Impact (Special Status Species Foraging Habitat)
- Cumulative Noise Impact
- Cumulative Traffic Impact—Intersection Operations (2030 with Project)
- Cumulative Traffic Impact—SR 140 Between Santa Fe Avenue and Kibby Road Roadway Segment Operations (2030 with Project)
- Cumulative Traffic Impact—Traffic Signal Operations (2030 with Project)
- Cumulative Traffic Impact -Tower Road between SR 140 and Gerard Avenue
- Cumulative Visual Impact

Mitigation measures would not reduce these cumulative impacts to a less-than-significant level. Please refer to the discussion under 6.1.2 "Cumulative Impacts of the Proposed Project" above for more detailed discussion.