# MITCHELL ROAD CORRIDOR SPECIFIC PLAN EIR

PREPARED FOR
THE CITY OF CERES

T H E P L A N N I N G C E N T E R

# *MITCHELL ROAD CORRIDOR SPECIFIC PLAN*

# *DRAFT ENVIRONMENTAL IMPACT REPORT*

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APRIL 1989

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# ENVIRONMENTAL IMPACT REPORT

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# EXECUTIVE SUMMARY

## Summary of Project Description

The Mitchell Road Corridor Specific Plan project involves the revitalization and increased urbanization of approximately 450 acres along Mitchell Road at the City's east side. The study area is currently sixty percent (60%) vacant or rural land uses with scattered commercial and residential development. Development of the Specific Plan as proposed will transform the area to a mix of commercial uses, including business park, highway commercial, mixed commercial and freeway commercial. The Specific Plan focuses on the encouragement of quality commercial development and upgrading the City's perceived image as a commerce center.

## Summary of Project Alternatives

In accordance with CEQA (section 15126d), reasonable project alternatives were evaluated. Those alternatives evaluated included the no project, increased residential and business park uses, decreased intensity commercial option, and recreational/entertainment option.

The no project alternative is not consistent with the City's intent to maximize the economic potential, minimize lot subdivision and provide consistency in land uses within the Mitchell Road area.

## Areas to be Resolved

Most of the identified project impacts can be mitigated to a level of insignificance. However, several impacts would still be unavoidable:

- loss of agricultural areas;
- increased mobile and stationary source emissions and resultant degradation to the local and regional air quality, including increase in local carbon monoxide (CO) concentrations;
- noise associated with increased traffic and intensity of land uses will significantly alter the ambient noise conditions along the corridor; even with the construction of noise attenuation walls, it is likely that residences in existing homes along the Mitchell Road frontage will be exposed to CNEL levels exceeding the City noise standards;
- increased trip ends will cumulatively impact city-wide circulation and Mitchell Road will operate at or above capacity conditions.

Adoption of Alternative 1 would reduce traffic impacts; however, although noise levels associated with traffic would be reduced, they would not be eliminated and the City's economic and growth goals for this development area would not be fully realized.

Prior to project approval, the City as Lead Agency will consider the benefits of the proposed Mitchell Road Corridor Specific Plan project (or a feasible alternative) versus the unavoidable adverse impacts. If it is determined that the benefits of the project will outweigh the adverse impacts and that all other impacts have been mitigated to the degree feasible, then the City will make a Statement of Overriding Considerations (as per CEQA section 15093) which indicates that the City of Ceres will accept these net effects in trade for the benefits achieved with project approval.

The following summary chart briefly describes the environmental impacts associated with implementation of the proposed Specific Plan, the mitigation measures proposed to reduce adverse impacts, and the level of residual impact should the proposed mitigation measures be implemented. More information concerning the impacts and mitigation measures for each impact category is provided in Section 3.0 of this report.

# MITCHELL ROAD CORRIDOR SPECIFIC PLAN EIR
# SUMMARY CHART

| Issue | Adverse Impacts | Recommended Mitigation Measures | Level of Significance with Mitigation |
|---|---|---|---|
| *Geology and Soils* | Residents and property structures will be exposed to mild groundshaking during seismic occurrences. The site poses no other geotechnical hazards. | All new structures should be built according to City Code. Older, existing structures which will remain should be modified to incorporate the latest building and safety standards. | Mitigated to a level of insignificance. |
| *Air Quality* | Project-related grading and construction will temporarily degrade local air quality due to the increase in associated fugitive dust emissions from heavy-duty, diesel-powered machinery. These emissions will be short-term. Additionally, residents and car-owners who park their cars in the area may be exposed to nuisance dust. Residents may also periodically experience odors from the diesel machinery. | To reduce impacts during construction, normal wetting procedures should be employed. Grading should be restricted on exceedingly windy days when dust is likely to be carried off-site so as to create a nuisance or cause potential harm to sensitive environmental areas, i.e., residents, irrigation water. Graded areas would be revegetated as soon as practical. Construction equipment should be tuned to operate in good condition. | Mitigated to a level of insignificance. |
| | Emissions from project-related traffic and the on-site consumption of natural gas will incrementally degrade the air quality in the area. Emissions from | Employ standard energy conservation measures to reduce the consumption of natural gas and electricity. A TMS program should be developed by the City to | The project will incrementally degrade the regional air quality. |

| Issue | Adverse Impacts | Recommended Mitigation Measures | Level of Significance with Mitigation |
|---|---|---|---|
| | the off-site generation of electricity for project uses will degrade the regional air quality. On a daily basis, the project would generate approximately 15,000 pounds of carbon monoxide, 1,500 pounds of hydrocarbons, 6,500 pounds of nitrogen oxides, and 1,300 pounds of particulates. The majority of these pollutants would be emitted by trucks and automobiles. | reduce the number of project-related trip ends and therefore reduce traffic emissions. | |
| | The intensity of commercial development proposed may not be consistent with the type and levels of development assumed in the Air Quality Plan. | None are recommended. | The project would not be consistent with the AQMP. Given the area's current non-attainment status regarding air quality management, this impact is considered significant. |

| Issue | Adverse Impacts | Recommended Mitigation Measures | Level of Significance with Mitigation |
|---|---|---|---|
| *Hydrology* | The increase in impervious surface area will result in increase volumes of storm runoff. A remote potential exists for rupture or flood hazard of nearby irrigation channels. | A City-wide drainage plan should be developed to accommodate storm runoff from the Corridor and expanding development in surrounding areas. The drainage plan should consider the threat of upset of local irrigation canals. Construction of on-site catch basins shall be the responsibility of developers, subject to the City Engineer's approval. The Specific Plan should provide implementation procedures for the formation of an assessment district to finance infrastructure improvements. | Mitigated to a level of insignificance. |
| | Grading may result in increased siltation and erosion for the duration of this activity. | Normal wetting procedures employed during grading activities will reduce the potential for siltation of exposed soils. | Mitigated to a level of insignificance. |
| | Project runoff will result in the incremental degradation of the local water quality from oil, grease, particles and fertilizers carried off-site. | Regular maintenance of roads and parking areas can minimize the potential contamination of surface waters due to site runoff. | Mitigated to a level of insignificance. |

| Issue | Adverse Impacts | Recommended Mitigation Measures | Level of Significance with Mitigation |
|---|---|---|---|
| *Noise* | Project-related traffic will increase the ambient noise levels. Upon buildout, 60 CNEL contours are anticipated to extend up to 700 feet into the corridor area. Without mitigation, areas designated for residential uses in the Mitchell Road study area may experience noise levels which exceed the State and City criteria. | Sound walls - or similar barriers should be constructed as appropriate around the exterior of residential neighborhoods. Exterior residential structures should be oriented to avoid having openings directed toward traffic exposure. Standard construction practice will attenuate noise impacts to a degree. In addition, the City should explore means of reducing overall traffic or limiting truck traffic along the corridor. | The potential increase in noise levels represents a significant adverse impact to land uses located within unacceptable noise contours. |
| *Aesthetics/ Light and Glare* | The character of the site will be altered from rural and scattered commercial development to an intense commercial corridor. | Development standards and design guidelines will ensure continuity within the new development and an attractive architectural theme. | Some residents may perceive the aesthetic change as a significant adverse effect. |
| | The project will increase nighttime illumination in the area. The increase in illumination may affect activities at the Modesto Airport. | Developments within the corridor should direct lighting toward the interior of sites and screen highly light intensive uses. | Mitigated to a level of insignificance. |
| | Potential glare could be associated with structures anticipated to be build near the Highway 99. | Building surfaces on the south and west facing sides should be designed to avoid large reflective surfaces. | Mitigated to a level of insignificance. |

| Issue | Adverse Impacts | Recommended Mitigation Measures | Level of Significance with Mitigation |
|---|---|---|---|
| *Land Use* | The proposed commercial intensities are greater than what the current general plan allows. | Approval of the requested Specific Plan as a regulatory document will ensure compatibility with the General Plan and Zoning Code. | Mitigated to a level of insignificance. |
| | Development of the site will alter the intensity and character of existing uses from vacant and underutilized to intense commercial uses and business park. | The City should approve the proposed Specific Plan and intensification at a City policy level. | Mitigated to a level of insignificance. |
| | Impacts arising from the adjacency of incompatible land uses (i.e., at the residential interface) are anticipated. | Impacts between and nuisance due to incompatible land uses should be minimized by the implementation of traffic access control, screening, sound barriers and design. | Mitigated to a level of insignificance. |
| *Population and Housing* | Though not considered an adverse impact, the proposed addition of 122 dwelling units would add some new residents to the city. In addition, indirect population growth would be required to support the increased intensity commercial uses. | None are required. | Not a significant impact. |

| Issue | Adverse Impacts | Recommended Mitigation Measures | Level of Significance with Mitigation |
|---|---|---|---|
| | Additional housing demand generated by the project will impact the local housing stock and will contribute pressure on vacancy rates and housing costs within the City and surrounding area. | Establishment of Planning Area 1 as redevelopment district will ensure that monies are set aside for low - and moderate - income housing on the Corridor and in the City of Ceres. | Mitigated to a level of insignificance. |
| *Traffic and Circulation* | The proposed project would generate about 210,000 daily trips, approximately 20,000 of which would occur during both the morning and evening rush hours. | Three basic options for mitigating traffic impacts are proposed for the City's consideration. | All three mitigation options could reduce traffic impacts to a level of insignificance. |
| | The proposed project would result in unacceptable levels of service at all intersections analyzed, even when proposed intersection improvements are taken into account. | The first option involves widening Mitchell Road to the proposed four through lanes, and reduced intensity for the proposed land uses so that project-related traffic does not exceed the capacity of affected roadways. | |
| | Traffic on nearby residential streets is expected to increase as a result of the proposed project. | The second option involves retention of the proposed land uses and intensities and widening Mitchell Road to nine lanes to accommodate project-related traffic. This option requires the city to obtain additional right-of-ways, and would itself involve significant environmental impacts. | |

| Issue | Adverse Impacts | Recommended Mitigation Measures | Level of Significance with Mitigation |
|---|---|---|---|
| | | The final mitigation option involves reduced intensity development in tandem with alternative roadway solutions. This option would involve regional transportation improvements, such as Faith Home Loop, and incorporation of master-planned mixed use developments, resulting in increased residential use and neighborhood commercial uses complemented by local employment opportunities. | |
| *Public Services and Utilities* | The demand for police and fire protection services would increase due to the intensity of development and the increased potential for crime and fire protection. | Incorporation of safety design factors can reduce the potential for crime. Maintaining an adequate water pressure level will minimize impacts. An assessment district should be established to provide fees for supporting fire staff. | Mitigated to a level of insignificance. |
| | The project will generate an additional 0.7 million gallons of sewage per day. Water consumption for the project area will be approximately 1,558 acre-feet per day. | Developers of individual projects will construct individual line improvements. Trunk lines may require upgradings to handle the increased useage. | Mitigated to a level of insignificance. |

| Issue | Adverse Impacts | Recommended Mitigation Measures | Level of Significance with Mitigation |
|---|---|---|---|
| *Energy Conservation* | Buildout of the Specific Plan will result in the increased consumption of natural gas and electricity. | Energy conservation measures in accordance with Title 24 should be implemented. | The consumption of non-renewable energy resources. |

# 1.0 INTRODUCTION

## *1.1 Purpose*

This Environmental Impact Report (EIR) has been prepared to satisfy the requirements of the California Environmental Quality Act (CEQA), as amended, for the proposed development located along Mitchell road between Highway 99 and the Tuolumne River and herein referred to as the Mitchell Road Corridor Specific Plan. The EIR will be used by the City of Ceres, as the Lead Agency, in its review and consideration of the Specific Plan.

It is anticipated that agencies other than the lead agency will be involved in the approval process. Several responsible agencies outside the City may be involved in serving the project, or may otherwise have an interest in the development's potential environmental effect. Included among these agencies are:

| Agency | Interest |
|---|---|
| California Department of Transportation (Caltrans) | Regional and cumulative impacts to the transportation system and impacts to local highway interchanges |
| California Air Resources Board (CARB) and Stanislaus County Air Pollution Control District (SCAPCD) | Regional air quality impacts due to traffic associated with the project |
| Stanislaus Area Association of Governments (SAAG) | Relationship to regional growth |
| County of Stanislaus | Relationship and impacts to adjacent County land and regional circulation |
| City of Modesto | Regional traffic impacts and impacts to airport operations |
| Airport Land Use Commission | Relationship and impacts to airport operations |

## *1.2 Scope*

This EIR evaluates the environmental impacts should the project be implemented as proposed in the Draft Specific Plan and described throughout this document. The document has been prepared in accordance with State CEQA Guidelines as well as the City of Ceres EIR requirements.

The Mitchell Road Corridor Specific Plan involves the commercial development of a 2 and 1/2 mile stretch of Mitchell Road between the Highway 99 and the Tuolumne River. The corridor, which includes the roadway as well as the adjacent and related land uses, is approximately 1/4 mile wide bounded by the Turlock Irrigation District's Main Canal (irrigation canal) on the east and the generally first parallel set of residential streets on the west (i.e., Timberly Lane, Vernal Drive, El Dorado Drive, and Louise Avenue, Susan Drive and Vineland Lane).

An initial study and Notice of Preparation (dated May 26, 1988) were prepared by the City to identify the areas of potential environmental impact. Based on the Initial Study (see Appendix A), the City determined that the project may have a significant effect on the environment and that the EIR should address the following issues:

- Soils and Geology
- Air Quality
- Hydrology
- Noise
- Aesthetics
- Land Use
- Population and Housing
- Traffic and Circulation
- Public Services and Utilities
- Energy Conservation

A scoping meeting was held. Concerns expressed at the meeting and in responses received on the Notice of Preparation were also considered in this EIR.

## *1.3 Project Background*

The City of Ceres is located south and adjacent to the City of Modesto. The City is characterized as a bedroom community with a deteriorating downtown district and limited commercial resources. It appears that the City's proximity to Modesto and other commercial and employment centers has caused its residents to depend on the surrounding area for their non-residential needs. In recent years, Ceres has thrived in residential growth, and the commercial and employment sectors of the City have grown at a slower pace. Although commercial growth has been steady, General Fund revenues realized by the City from commercial developments have not been sufficient to offset General Fund disbursements for support of the residential growth. The City has determined that a better

balance of land uses is required within the City to generate General Fund revenues adequate to support the residential component.

The City has identified the Mitchell Road area to serve as the key economic component of the community. The City desires to transform the Mitchell Road Corridor into a mixed use corridor which will produce viable retail sales and office/professional opportunities while protecting the residential influence of the area. In its strategy to do so, the City desires to enhance the aesthetics of the corridor through the development of design guidelines.

## 2.0 *PROJECT DESCRIPTION*

### *2.1 Location and Boundaries*

The Mitchell Road Corridor study area is located on the eastern edge of the City of Ceres. Ceres is located adjacent to and south of the City of Modesto in Stanislaus County (see Figure 1, Regional Location Map). The Mitchell Road Corridor includes a 2 1/2 mile stretch of Mitchell Road extending between Highway 99 on the south and the Tuolumne River on the north (see Figure 2, Vicinity Map). The corridor is approximately 1/4 mile wide for most of its length but broadens to approximately half mile wide at the northern and southern ends to include large parcels in those areas.

The corridor is within the City jurisdiction with the exception of several parcels in the north and south end which are currently within the unincorporated area of the County of Stanislaus. Only a small percentage of the corridor is currently developed, with existing commercial uses concentrated predominantly between Fowler and Roeding and at the Hatch/Mitchell and Don Pedro/Mitchell intersections.

### *2.2 Statement of Objectives*

The Mitchell Road Corridor Specific Plan is intended to achieve the goals and objectives of the City of Ceres through the cost-effective physical and economic development of the corridor. The City intends for the Mitchell Road Corridor Specific Plan to:

1. Provide a means of controlling the direction of growth within the Mitchell Road Corridor.

2. Capitalize on and maximize the economic potential of the Mitchell Road Corridor so that the area can be viewed as an economic asset to the City.

3. Provide a land use scenario that is sensitive to existing and future residential uses in the corridor vicinity.

4. Provide guidelines which will suggest a desired aesthetic quality for the corridor area and incorporate existing and new urban design concepts.

5. Provide a circulation concept that utilizes the road-widening program and maximizes land use potential while minimizing traffic conflicts.

6. Create an image for the City that is distinctive and inviting.

7. Encourage public transit and pedestrian circulation.

FIGURE 1 REGIONAL LOCATION MAP

FIGURE 2 VICINITY MAP

8. Provide a varied and interesting building height profile as is suitable.

9. Provide for the short-term, as well as the long-term, needs of the corridor in a comprehensive planning approach.

10. Provide a plan that is sensitive to the noise attenuation needs of the corridor.

11. Provide an environment that is safe for the public at large.

## *2.3 Project Characteristics*

The proposed Specific Plan involves the intensification of the Mitchell Road Corridor from predominantly vacant and underutilized uses to a planned commercial strip. Figure 3 presents the proposed Land Use Plan.

The chart below details the types and quantity of the proposed land uses for the corridor; the chart is based on maximum buildout of the proposed Specific Plan.

| Land Use | Acreage | Sq. Ft. |
|---|---|---|
| Neighborhood Commercial | 52.89 | 691,200 |
| Planned Commercial | 138.45 | 1,809,300 |
| Highway Commercial | 28.86 | 377,100 |
| Retail Commercial | 61.62 | 805,300 |
| Business Park | 105.40 | 1,377,400 |
| Residential | 49.48 | ±282 units |
| Church | 4.44 | - |
| | Total: 436.70 acres | |

The approach to the land use concept included:

- protecting existing viable residential neighborhoods;
- providing for a variety of commercial opportunities;
- enhancing and capitalizing on the key visual features within the corridor and surrounding area;
- preserving existing significant trees; and
- minimizing traffic conflicts along Mitchell Road.

As Figure 3 shows, the Corridor has been designated with a range of commercial land uses. In general terms, the Corridor can be divided into three distinct Planning Areas (see Figure 4). Planning Area 1, located between Roeding Road and Highway 99, is visualized

FIGURE 3 PROPOSED LAND USE PLAN

FIGURE 4 CORRIDOR PLANNING AREAS

as an intense commercial center to serve the City and regional needs. Planning Area 2, located between Hatch and Roeding Roads, is intended to serve as a local and regional target for residents to the east and west. Planning Area 3, between the Tuolumne River and Hatch Road, is intended to draw users and occupants from the airport and Modesto area.

# 3.0 *ENVIRONMENTAL ANALYSIS OF POTENTIALLY SIGNIFICANT ENVIRONMENTAL ISSUES*

## *3.1 Soils and Geology*

### *3.1.1 Environmental Setting*

#### General Geology and Topography

Three distinct geographical regions comprise Stanislaus County: the low Sierra foothills, the Diablo Mountains, and the San Joaquin Valley between the Sierra Nevada and Coast Ranges. Ceres itself is located in the central portion of the county, in the northeastern portion of the San Joaquin Valley. Streams in this portion of the valley form the drainage basin of the San Joaquin River. The San Joaquin River joins the Sacramento River Delta to the north; the Sacramento River empties into San Francisco Bay.

The valley floor's topography is generally flat. The city is located on the San Joaquin Valley floor, east of the San Joaquin River and immediately south of the Tuolumne River. A section of the Tuolumne River bounds the Ceres planning area on the north.

The corridor area is relatively flat, with elevations averaging 100 feet above mean sea level. The official elevation of Ceres is 89 feet above mean sea level. The Tuolumne River at the northern end of the corridor disrupts the generally flat terrain in the vicinity of the project site.

#### Soils

The project site is locally underlain by recent alluvial fan deposits. The Tuolumne River is the major source of sand and gravel in the county and has deposited fertile sandy loam soils in the Ceres area. Class I and Class II soils (prime agricultural soils) characterize the area, but some Class III soils (medium agricultural soils) are present. These soils are generally well-drained, level, and are quite conducive to agricultural production. The main agricultural uses of the project site's soils produce grapes, olives, and other crops.

#### Geologic and Seismic Hazards

Natural conditions of the geologic structure, landforms, climate and hydrologic regime have interacted to create areas in Stanislaus County where notable geologic hazards can occur. However, the city of Ceres, like all communities in this portion of the San Joaquin Valley, is relatively free of slope stability problems, ground failure hazards, ground displacement hazards, liquefaction areas, seiche hazards, and direct seismic activity.

The major geologic hazard affecting the project site relates to damage caused by a more distant earthquake. An 1881 earthquake centered in San Joaquin County adjacent to the

Sierra foothills is the only earthquake recorded to have been centered in this area. The city may, however, experience structural damage resulting from a more distant earthquake. Stanislaus County is virtually surrounded by major fault systems associated with high activity earthquake zones. Figure 5 (Fault Map) depicts the project site in relation to the nearest fault systems.

Intensity ratings of earthquakes are measures of the effects of earthquakes on people and objects, as determined by experienced observers. The most common intensity scale is the Modified Mercalli Scale. According to the City's Geology and Seismic Safety Element, the probable maximum intensity of earthquake shaking likely to affect the city rates a VIII on the Mercalli Scale. Such an earthquake would be characterized by considerable damage to ordinary structures, and great damage to poorly built structures. Heavy furniture would likely be overturned during an earthquake of this intensity.

Other effects of earthquakes (such as ground failure, ground displacement, liquefaction, and seiches) are not likely to pose hazards at the project site, or in the city at large.

### General Plan Goals and Policies

The Geology and Seismic Safety Element of the City's General Plan identifies the major known geologic concerns in the area, notes areas in which further geotechnical study is needed, and recommends policies which are consistent with the data presented in the Element.

Some of the goals of this Element are the following:

> " - It is the goal of the people of Stanislaus County to create a more livable environment while at the same time protecting individual choice and promoting individual responsibility.
>
> - It is the goal of the people of Stanislaus County to minimize risks to life and property from earthquakes and other geologic hazards."

The policies recommended to achieve these goals include adoption of the Uniform Building Code and a long-range inspection and dangerous building abatement plan.

### *3.1.2 Environmental Impacts*

#### Soils

Implementation of the proposed project would increase development opportunities for the entire 437-acre site, including 333 acres of undeveloped, vacant, or underutilized land. A considerable portion of this land is used for marginal agricultural uses, and therefore the proposed project will result in the loss of agricultural soils. As the project area undergoes

FIGURE 5 FAULT MAP

transition from rural and agricultural uses, the attractiveness of the area for farming will decrease.

Since the project site is generally flat, significant grading and associated earthmoving for the construction of building pads is not expected to occur.

### Geologic and Seismic Hazards

Since the proposed project will result in more intense development of the Mitchell Road Corridor, more persons would be exposed to the earthquake-induced groundshaking hazard which affects the project area. However, this hazard is no more potentially significant at this site than at other locations in the City or in Stanislaus County, and would be adequately mitigated by construction in accordance with the Uniform Building Code.

### General Plan Goals and Policies

A number of structures currently exist on-site which are in a state of disrepair and/or would be of questionable stability in the event of the maximum credible earthquake. Even though most of these structures are uninhabited, they would pose a considerable safety hazard if severe groundshaking should occur. Increased development opportunities as a result of implementation of the proposed Specific Plan will likely lead to demolition of these structures, and their replacement by buildings with more structural integrity. Therefore, the proposed project is consistent with the Geology and Seismic Safety goals of the General Plan which attempt to create a more livable environment and minimize the risks to life and property from earthquakes.

### *3.1.3 Mitigation Measures*

The following are recommended to minimize potential impacts relative to geologic constraints:

1. All new structures erected on the project site shall be designed and constructed in accord with the requirements of the Uniform Building Code.

2. The City should continue to develop and implement a systematic program to abate buildings that are considered dangerous to occupants.

## *3.2 Air Quality*

### *3.2.1 Environmental Setting*

**Meteorology**

Weather in California is dominated by the migration of the semi-permanent Pacific high pressure system. During the summer this high migrates to the north and causes storm tracks to be deflected north of the state. Therefore, little precipitation from Pacific storms reaches California in the summer months. During the winter, the Pacific high migrates south and storms move into and across the state. Precipitation falls as rain at low elevations and as snow at higher elevations. In the Central Valley, summers tend to be hot and winters are moderate to cold.

Stanislaus County is comprised of three distinct geographical regions: the low Sierra Foothills, the Diablo Mountains, and the San Joaquin Valley between the Sierra Nevada and the Coast Ranges. Ceres itself is located in the central portion of the County and in the northeastern portion of the San Joaquin Valley.

The climate in the Valley is generally semi-arid. Average mean temperature is about 64 degrees F, with very warm summers and mild winters. Typical summer temperatures are in the upper 90s. Rainfall is rather sparse, averaging about six inches per year. Prevailing winds are normally gentle and northwesterly. However, severe wind storms do occur during the fall and spring.

The nearest weather reporting station to Ceres, providing climate information to the National Oceanic and Atmospheric Administration, is located in Modesto. Modesto's climate is equivalent to that of Ceres.

Climatological data for Modesto is as follows:[1]

| | |
|---|---|
| Temperature | |
| Annual mean daily maximum | 74.6 degrees F |
| Annual mean daily minimum | 47.7 degrees F |
| Record high and low | 112 degrees F and 22 degrees F |
| Precipitation | |
| Typical annual | 11.70 inches |

[1]"Climatology of the United States No. 60, Climate of California," Natural Oceanic and Atmospheric Administration.

## Existing Air Quality

Modesto is located in the northwestern portion of the San Joaquin Valley Air Basin (SJVAB) which includes San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and Kern counties. The existing air quality is influenced by the regional topography and weather as well as the area emissions.

Topography makes the planning area highly susceptible to pollutant build-up. The Valley is surrounded on three sides by mountainous terrain which tends to prevent the dispersion of contaminants from the basin.

Other meteorological conditions also play an important role in the regional air quality. Two meteorological factors of extreme importance are sunlight and inversion layers. Sunlight causes a reaction of certain disperse chemicals in the atmosphere which produces photochemical air pollution. In addition, inversion layers restrict vertical air movement and can cause pollutant concentrations to increase.

The two major distinctions made in the identification of air pollutants are between primary and secondary air pollutants. Primary pollutants are those pollutants that are emitted directly from sources. Carbon monoxide, reactive organic gases, nitric oxide, sulfur dioxide, and most particulate matter are primary pollutants. Secondary pollutants are those pollutants formed by chemical and photochemical reactions in the atmosphere. Photochemical oxidants (smog) and nitrogen dioxide are the principal secondary pollutants. Pollution sources in the area are primarily from automobile traffic, solvent use, pesticide applications, petroleum processing, transfer and storage, industrial processes and agricultural and waste burning.

The California Air Resources Board (CARB) monitors air pollutants at more than 200 locations throughout the State and publishes this data on a regular basis. The SJVAB has 34 monitoring stations with five located in Stanislaus County. The 14th Street Station in Modesto (#5000568) is most representative of the proposed project area. However, only the gases, such as ozone, carbon monoxide, nitrogen oxides and sulfur dioxides are monitored there. Particulates, lead and sulfates are measured at other relatively nearby stations. The Oakdale Road Station (#5000558) in Modesto is the closest station which monitors total suspended particulates and the Hazelton Street Station (#3900252) in Stockton is the closest station which monitors sulfates and lead. Data, compiled for all three stations for all the pollutants from the period 1985-1987** are presented in Table 1.

The Federal Clean Air Act provides that national ambient air quality standards can be exceeded on the average no more than once a year for any three consecutive years. Areas which exceed the average of one exceedence per year can be considered "non-attainment areas" subject to more stringent planning and pollution control requirements. Once an area has been declared non-attainment for a particular pollutant, the area must show twelve

** latest available data

consecutive calendar quarters without any violations in order to be redesignated as an "attainment" area.

California state ambient air quality standards are set by the State Air Resources Board (CARB). The state air quality standards are levels which are not meant to be equalled or exceeded; however, unlike federal law, there are no penalties or additional require-ments which are imposed on areas which exceed these levels. Table 1 shows state and federal ambient air quality standards.

## Air Quality Standards

The Federal Clean Air Act provides for the assignment of National Ambient Air Quality Standards (NAAQS). California state ambient air quality standards are goals established by the California Air Resources Board (CARB). These standards reflect those levels required to avoid adverse health or welfare effects. The national and state standards are also shown in Table 1. The table shows the number of days these levels were exceeded at the nearest monitoring station(s).

As shown, state or national air quality standards for ozone, carbon monoxide and particulate matter were exceeded in the monitoring area during the three year period. Maximum hourly concentrations of ozone have remained steady over the interim. Maximum daily particulate levels have increased over the three-year period and percentage of time exceeding standards has also increased. Eight-hour CO levels have exceeded both federal and state standards several times during the three-year period. Other pollutants, although under federal and state standards, have remained fairly constant or have decreased slightly as with sulfur dioxide and lead.

The Modesto/Ceres area is a non-attainment area for ozone (O3) and carbon monoxide (CO). Major contributors to regional ozone problems are motor vehicle emissions and evaporation of organic compounds. Motor emissions are also a major contributor of CO levels. It should be noted that the area's non-attainment status is due not only to emissions generated in the area, but also due to regional emissions which are blown into the monitoring area and Ceres by prevailing winds.

## Applicable Plans

The Stanislaus County Air Quality Plan was developed in response to the Federal Clean Air Act requirement for such in non-attainment areas. The annual report on Reasonable Further Progress (December, 1987) finds that planning and implementation of air quality measures has generally met the requirements established for the Stanislaus Nonattainment Area by EPA and CARB with respect to both stationary and transportation sources of pollutants. The tactics contained in the 1978 Air Quality Maintenance Plan are still being implemented. However, for a variety of reasons, none of the stationary source measures

adopted in the 1982 Plan have been implemented. Implementation of all transportation control measures has proceeded on schedule.

### *3.2.2 Environmental Impacts*

#### Short-Term Impacts

As development occurs in the corridor, short-term construction-related impacts will include: 1) exhaust emissions from the heavy-duty, diesel-powered grading/construction equipment, and 2) increased dust from earth movement and traffic over dust-laden roads and the demolition of existing structures. Construction equipment emissions will contribute to the daily emission levels in the vicinity and diesel-odors may be carried to other land uses in the corridor. However, since these will be temporary in duration, the impacts are not anticipated to be significant.

Based on EPA estimates, fugitive dust emissions from the construction phase will be 110 lbs/day per acre graded. (Source: EPA, AP-42 4th Edition, 1985, page 11.2.4-1[12/75]). The actual volume of particulate emissions due to grading will vary depending on the amount of activity each day. The volume of particulates generated will be somewhat reduced through utilization of normal wetting procedures. However, all dust emissions, associated with construction, will generally cease upon buildout of the corridor. Dust emissions may be perceived as a temporary nuisance to persons who reside or park in the vicinity of the project.

TABLE 1
AMBIENT AIR QUALITY STANDARDS
AND
ANNUAL AIR QUALITY STATISTICS FOR CERES/MODESTO AREA STATIONS

## Long-Term Impacts

Long-term air quality impacts will be associated with project-related vehicles (mobile source), the off-site generation of electricity and the on-site use of natural gas (both stationary sources). Stationary emissions resulting from the project are summarized in Table 2.

TABLE 2

ESTIMATED PROJECT EMISSIONS FROM STATIONARY SOURCES[a]

| Pollutant | Natural Gas[b] Emission Factor (Lbs/$10^6$ CF) | Natural Gas[b] Estimated Emissions (Lbs/Day) | Electricity[c] Emission Factor (Lbs/$10^3$ KWH) | Electricity[c] Estimated Emissions (Lbs/Day) |
|---|---|---|---|---|
| Carbon Monoxide | 20.0 | 12.7 | 0.20 | 27.5 |
| Hydrocarbons | 5.3 | 3.4 | 0.01 | 1.4 |
| Nitrogen Oxides[d] | 120.0 | 778.0 | 1.15 | 158.1 |
| | 80.0 | 11.7 | | |
| Sulfur Dioxides | negl. | negl. | 0.12 | 16.5 |
| Particulates | 0.2 | 0.1 | 0.04 | 5.5 |

a "Air Quality Handbook For Environmental Impact Reports", SCAQMD, Appendices G & I, revised April 1987.

b Based on additional natural gas consumption of 23.1 million therms per year (see Section 3.9 for estimation).

c Based on additional annual electrical consumption of 50.2 million kwh (see Section 3.9 for estimation).

d Natural gas NOx emission factors differ between residential and commercial uses. Only two percent (2%) of the natural gas will be utilized by new residential uses at a NOx emission generation rate of 80.0 lbs/million cubic feet. The remaining 98% of natural gas will be consumed through commercial/business uses at a NOx emission generation rate of 120.0 lbs/million cubic feet.

The project is estimated to generate 209,950 trip ends per day. Of these, 1,098 trip ends originate from residential uses and 208,852 trips ends from the business and commercial uses. Motor vehicle emissions are the largest emission source associated with the project. The motor vehicle emissions generated by traffic associated with the completed project development are estimated in Table 3.

TABLE 3

ESTIMATED PROJECT MOTOR VEHICLE EMISSIONS

| Pollutant | Emission Factor* (Grams/Mile) | Estimated Residential Emissions** (Lbs/Day) | Estimated Commer/Bus. Emissions*** (Lbs/Day) |
|---|---|---|---|
| Carbon Monoxide | 3.31 | 80.2 | 15,340.7 |
| Hydrocarbons (Total) | 0.32 | 7.8 | 1,483.1 |
| Nitrogen Oxides | 1.20 | 29.1 | 5,561.6 |
| Particulates | 0.28 | 6.7 | 1,288.4 |

* "Air Quality Handbook For Environmental Impact Reports", South Coast Air Quality Management District, Appendix D, California State Composite Moving Exhaust Emissions Rates, (for calendar year 1998 and average speed of 45 mph), revised April 1987.

** Assumes 10,980 vehicle miles traveled per day based on 1,098 residential-generated trips per day and an average trip length of 10 miles.

*** Assumes 2,088,520 vehicle miles traveled per day based on 208,852 business and commercial generated trips per day and an average trip length of 10 miles.

Note: Average trip lengths are based on the average distance from residential areas to major employment and/or commercial nodes.

The air quality emissions from on-site and off-site emission sources associated with the proposed project are summarized in Table 4. Only those emission sources associated with the full buildout and occupation of the project are totalled. Emissions associated with the construction phase were considered short-term and thus not considered in the long-term contribution of air emissions.

**TABLE 4**

**SUMMARY OF PROJECT AIR EMISSIONS**
**(In Pounds per Day)**

| Pollutant | Natural Gas | Source Motor Electricity | Total of Vehicles | Pollutant |
|---|---|---|---|---|
| Carbon Monoxide | 12.7 | 27.5 | 15,420.9 | 15,461.1 |
| Hydrocarbons | 3.4 | 1.4 | 1,490.9 | 1,495.7 |
| Nitrogen Oxides | 789.8 | 158.1 | 5,590.7 | 6,538.6 |
| Sulfur Oxides | negl. | 16.5 | negl. | 16.5 |
| Particulates | 0.1 | 5.5 | 1,295.1 | 1,300.7 |

## Consistency With Applicable Plans

Determinations of consistency with the San Joaquin Valley Air Quality Plan are made by comparing proposed projects with conditions assumed in the preparation of the plan. The proposed land uses are a significant variation for the residential land uses that were assumed for this area.

## Project Significance

Project significance relative to air quality is evaluated by comparison of the project to threshold criteria established by the California Air Resources Board. In general, projects having at least 500 residential units or 1,000 persons are considered to have potential regional significance. And commercial projects greater than 6 acres or 60,000 square feet or industrial parks greater than 20 acres could be regionally significant. Based on this criteria, the Mitchell Road Corridor Specific Plan proposing ± 122 additional residential

units and several million additional square feet collectively of commercial and business uses is considered to be regionally significant.

The State CEQA guidelines further state that a project will ordinarily have a significant air quality impact on the environment if it will:

> "Violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations."

### *3.2.3 Mitigation Measures*

The following mitigation measures are recommended to reduce short-term (construction) impacts:

- Normal wetting procedures should be employed during the site grading operations to reduce dust emissions.
- Grading should not occur on exceedingly windy days when dust is likely to be carried off-site so as to be a nuisance or cause potential harm to sensitive environmental areas.
- Revegetation of graded areas should be completed as soon as practical after grading to reduce dust.
- Construction equipment should be tuned to operate in good condition.

Long-term impacts can be reduced through a reduction of the significant emission sources. Specifically:

- The project shall incorporate standard energy conservation measures (see Section 3.10, Energy Conservation) to reduce emissions from the on-site consumption of natural gas and the off-site generation of electricity.
- The applicant shall incorporate design features as is feasible to reduce project-related traffic. As proposed, the project design offers several incentives for trip reduction. For example, the provision of support retail uses within walking distance of offices will reduce the need for office employees to drive off-site for routine errands. Practical retail uses could include a cleaners, bank, pharmacy, cobbler, florist, etc.
- The SVAB is participating in a long-term study to determine the source of air pollutants. Once the sources are indentified, a program will be developed for reduce the generation of pollutants.
- The City of Ceres and/or a Mitchell Road property owners group should develop

and implement a Transportation System Management (TSM) plan to minimize the overall number of employee and shopper/patron trips associated with the project; thus, reducing the traffic-related pollutant emission levels.

- Recommended measures for a TSM plan are given below:

a. - Ridesharing/Preferential Parking - Provision of an on-site transportation coordinator to develop a corridor employee commute alternative program, including a commuter ridesharing service designed for these employees, could be provided. Many projects resulting from implementation of the specific plan would be too small to warrant a transportation coordinator within each business. However, a program could be developed, to be financed through an assessment district, developer fees or the City, to serve all employees in the area (and, eventually, citywide). In addition, carpools, vanpools, and bicycles should be given preference in employee designated parking. Such preference could include locating the designated parking in closer proximity to entrances and providing covered or shaded parking. Preferential parking spaces could be identified as a percentage of all proposed employee parking at the project site. This measure will improve the effectiveness of vehicle-pooling.

b. Traffic Flow Improvements - Traffic flow improvements could include signal timing, modifications of truck delivery routes and/or schedules, and restrictions of on-street parking for major arterials. These measures could be implemented along the heavily used streets in the vicinity of this project.

c. Transit - The City of Ceres should coordinate with the Inter-City Transit Company to analyze the potential transit demand from the new employees, patrons, and residents and whether this demand will justify extension of fixed route transit through the Mitchell Road Corridor. Business employers could subsidize transit passes for employees living along transit routes and provide shuttle service to nearby commercial and residential areas for midday trips. The development should provide for bus turnouts, if warranted. Extension of regularly-scheduled transit routes would also reduce shopper/patron dependence on automobiles.

d. Pedestrian Access - In general, walking is encouraged in areas which have visual interest with short distances between interest points and which are safe, well lit, and used by other pedestrians. Minimizing building setbacks from the street, provision of sunny and shaded places to sit, timing of traffic signals to allow pedestrians to cross streets, and provision of safe and easy access for the drop-off and pick-up of carpool passengers will encourage pedestrian activity. Internal automobile trips would be reduced as the attractiveness of pedestrian use increases.

e. Bicycle Access - Bicycle commuting should be encouraged through the inclusion on-site of bicycle lockers, showers, and clothing lockers for employees, secure bicycle racks or storage facilities for visitors, and maps of local bicycle routes with suggestions which support travel. Local bicycling organizations could

be contacted to provide useful suggestions for maximizing bicycle access.

f. Flexible Hours - A modified work schedule could be employed to reduce traffic congestion that has a direct relationship to increased vehicle emissions.

TSM programs have been estimated to reduce vehicle trips by as much as 25% under optimal conditions. However, a typical and realistic scenario is a 7 to 10% reduction in trip ends. Such a reduction is considered to be a significant emissions savings.

## *3.3 Hydrology*

### *3.3.1 Environmental Setting*

**Drainage/Flooding**

The San Joaquin River is the outlet for most of the stormwater draining from the project site, although some stormwater originally in the northern portion of the site drains to the nearby Tuolumne River. A series of storm drain retention basins and canals contains stormwater prior to discharge into these rivers.

The State has designated the Tuolumne River to be used for the following:

1. Municipal and domestic water supply
2. Agricultural irrigation and stock water supply
3. Recreation including boating and fishing
4. Fisheries and wildlife habitat
5. Cold water fishes migrating route
6. Spawning ground for cold and warm water fishes

Flooding has historically been a major problem in Stanislaus County. An 1861 flood covered the San Joaquin Valley with a body of water 20 to 60 miles wide and 250 to 300 miles long. Several less severe but still considered major floods have occurred in the past thirty years.

Turlock Irrigation District maintains several canals in the project vicinity which provide irrigation water for local agriculture. Water level in the canals is regulated by a series of manually operated gates with some additional mechanical gates. Along portions of these canals, the water level is somewhat higher than the adjacent project area.

The Don Pedro Dam on the Tuolumne River has made the threat of recurrence of a flood as severe as the 1861 flood quite remote. Should the Don Pedro Dam fail, however, the city of Ceres would not be inundated because of its favorable location.

Ceres is considered a potential groundwater recharge area. Urbanization has replaced agriculture as the city has grown, resulting in a recent decline in groundwater levels when water is pumped for municipal uses. The City's Safety Element of its General Plan indicates that "the quality and quantity of groundwater around Ceres will continue to be adequate to supply future water demands through 1995." Most of the irrigation water pumped to the site is either taken up by plants or evaporates, rather than recharge aquifers which are generally greater than 12 feet below the surface.

## Water Quality

Water management studies and wastewater treatment facility expansion studies prepared for the City in 1984 have included an assessment of water quality in the Ceres area. These studies indicate that Ceres' groundwater and the Tuolumne River are of generally good quality. Tables 5 and 6, as well as Figures 6 through 8 display the quality of Ceres' groundwater and of the Tuolumne River.

TABLE 5

CERES GROUNDWATER QUALITY[a]

| Parameter | Maximum | Minimum | Average | Drinking Water Standards Goals[b] |
|---|---|---|---|---|
| Nitrate | 64 | 0.5 | 31 | 45 EPA Primary |
| Sodium | 156 | 5.0 | 69 | 20 EPA Secondary |
| Hardness | 340 | 123.0 | 204 | 80-100 AWWA Goal |
| TDS | 666 | 246.0 | 417 | 500 EPA Secondary |
| Chloride | 268 | 20.0 | 77 | 250 EPA Secondary |

a All measurements shown in milligrams per liter (mg/l) and are based upon sampling records from 1966 to 1983. A total of 15 wells were available with water quality data. Not all data wells were operational at the time to the study.

b Nitrate standard is the only enforceable standard. All other values listed represent reasonable goals.

Source: Modesto - Ceres Water Management Study Final Report. Prepared for the Modesto Irrigation District, the City of Modesto, and the City of Ceres by James M. Montgomery Consulting Engineers, Inc., and Leedskill-Herkenhoff, Inc., November 1984.

**TABLE 6**

**TUOLUMNE RIVER WATER QUALITY**

FIGURE 6CHLORIDE CONCENTRATIONS IN GROUNDWATER

FIGURE 7NITRATE CONCENTRATIONS IN GROUNDWATER

FIGURE 8SALINITY HAZARDS TO GROUNDWATER

## General Plan Goals and Policies

The Safety Element of Ceres' General Plan sets priorities for safety considerations relating to existing and new structures, abates problems where feasible, and involves pertinent agencies in including safety considerations in the planning process. With regard to hydrology, the Element encourages the City to act as a reception center for those displaced in the event that the Don Pedro Dam should fail; endorses the comprehensive Emergency Services Operational Plan prepared by the County; and promotes the use of codes, regulations, and building inspections to minimize safety hazards.

### *3.3.2 Environmental Impacts*

**Drainage/Flooding**

A maximum of 333 acres presently considered vacant could be covered with structures, parking areas, driveways, or other impervious surfaces should the proposed project be implemented. Therefore, the proposed project would increase stormwater runoff to receiving streams. Grading may result in increased siltation and erosion for the duration of this activity.

The elimination of irrigation for agricultural purposes is not expected to significantly change the depth or quality of groundwater beneath the project area. The depth of local groundwater (generally deeper than 12 feet) does not allow significant percolation of irrigation water to recharge local aquifers.

Both on-site and off-site stormwater drainage facilities will likely require improvement to adequately handle the additional runoff. Assuming these facilities are constructed, the proposed project would not exacerbate flood hazards on the site or downstream from the site.

One other flooding risk pertains to possible upset to the series of nearby irrigation canals. If the canals overflow as a result of tampering by humans, or in the event of an earthquake of unanticipated severity, some nearby land uses may be subject to flooding. Such flooding is anticipated to be minor. In the event of overflow, water would be intercepted by the local storm drain system before serious flooding occurred on the project site.

In the event of seismic damage to the channels, it is likely that the quake causing such an upset would also cause enormous damage to on-site properties due to groundshaking. The threat of tampering with the channels also decreases as urbanization increases, since the opportunity for detection increases and the attractiveness of the channel as a potential swimming hole generally declines.

### Water Quality

Intensification of urban uses in the Tuolumne River watershed would increase the amount of urban residuals (e.g. motor oils, litter) draining into the river. Concurrently, the amounts of pesticides and fertilizers flowing into the river would decrease as farmland is converted for urban uses. The net water quality impacts on the Tuolumne River due to changes in storm discharge flow rates or types of water-borne pollutants are not considered significant.

### General Plan Goals and Policies

The proposed project is consistent with the Safety Element of the General Plan which attempts to enhance public health and safety through the modernization and improvement of structures built for human habitation.

### *3.3.3 Mitigation Measures*

1. A Master Plan of storm drains which includes the Mitchell Road Corridor Specific Plan area should be prepared by the City of Ceres, under the direction of the City Engineer. This Plan would address future flood control needs with consideration for potential growth in this portion of the city as well as the threat of upset of local irrigation channels.

2. Construction of on-site drainage catch-basins and piping shall be the responsibility of developers in the Specific Plan area, and such construction shall be in accordance with City standards. The diameter, depth, and slope of piping shall be subject to the approval of the City Engineer.

3. The City should explore the possibility of forming an assessment district which will finance necessary infrastructure improvements.

4. Normal wetting procedures employed during grading activities will reduce the potential for siltation of exposed soils.

5. Regular maintenance of roads and parking areas can minimize the potential contamination of surface waters due to site runoff.

## *3.4 Noise*

### *3.4.1 Environmental Setting*

#### Introduction

Noise is generally defined as excessive or unwanted sound. The human ear is not equally sensitive to sound over the entire frequency spectra. A weighted scale has been devised for measurement instrumentation that suppresses the lower and higher frequencies in roughly the same manner as the human ear. Such weighted measurements are referred to as A-weighted sound levels or simply as dBA.

Typical sound ranges from 40 dBA (very quiet) to 100 dBA (very loud). Examples of various noise levels are shown in Figure 9, graph A (Typical Noise Levels). Conversation is roughly 60 dBA at three feet and noise becomes discomforting at 110 dBA. Doubling the sound pressure of a noise source causes the decibel rating to be increased by only 6 dB due to the logarithmic nature of the noise scale. However, due to non-linearities in the mechanism of the human ear, a sound must be nearly 10 dB higher than another sound to be judged twice as loud. It follows, then, that a sound 20 dB higher is four times as loud, and one 30 dB higher is eight times as loud.

Noise impacts are commonly evaluated in the Community Noise Equivalent Level (CNEL) noise index. CNEL is a method of representing in a single number the combined effect of a daily noise exposure. The CNEL value computed at any point is the sum of the decibel values of the sound, with corrections for time of day, and averaged over 24 hours. Weighting factors of 5 and 10 dB are added to indicate the sensitivity to noise in the evening (7 p.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) periods.

Community reaction to CNEL is also shown in Figure 9, graph B (Community Response to Noise Levels). Generally, noise levels exceeding 65 dB CNEL are undesirable for residential developments; 60 dB is a more desirable and acceptable level with only 2 percent of the population impacted complaining.

#### Noise Criteria

Federal - The federal government is engaged in a variety of noise control activities which are primarily aimed at regulating the noise source itself. The EPA recommends an outdoor noise limit of 55 dB Ldn and 45 Ldn for indoors. The Ldn metric used by the EPA is similar to CNEL except for the lack of an evening penalty and is, in this report, interchangeable with CNEL. The EPA's outdoor guideline is a general policy and is aimed primarily at residential land uses.

FIGURE 9 NOISE GRAPHS

State - The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles and motor boats, establish noise impact boundaries around airports, regulate freeway noise affecting classrooms, and set sound transmission control standards. The sound transmission standards found in California Administrative Code, Title 25, apply to the proposed Mitchell Road project. This code requires acoustical insulation in residential areas subjected to 60 dB CNEL or greater in order to maintain an annual interior level of 45 dB CNEL in any habitable room of a multiple dwelling unit. The State Office of Noise Control has also published guidelines for noise and land use compatibility (Guidelines for the Preparation and Content of Noise Elements of the General Plan, February 1976). The objective of the guidelines is to provide a community noise environment which the state deems to be generally acceptable. For single-family and duplex dwellings the recommended upper bound for what the guidelines refer to as a normally acceptable exterior noise exposure is 60 dB CNEL. The assumption is that normal construction practices would attenuate the exterior-to-interior noise to an acceptable level. For multi-family dwellings, the guidelines permit up to 65 dB CNEL in the normally acceptable category. The guidelines also say that a noise exposure up to 70 dB CNEL would be conditionally acceptable on a showing that the building materials would provide an acceptable interior level.

City - Ceres adopted a Noise Element of the General Plan in 1977 which recommends acceptable community noise levels (CNELs) for various land use categories (see Table 7).

TABLE 7

ACCEPTABLE NOISE LEVELS

| Category | Noise Limit (in CNEL) |
|---|---|
| Residential - Single-family, low-density | 60 |
| Residential - Multi-family | 65 |
| Hotels, motels | 65 |
| Schools, libraries, hospitals | 70 |
| Playgrounds, parks | 70 |
| Recreation facilities | 75 |
| Office, professional | 70 |
| Industrial | 75 |

## Existing Noise Levels

The Mitchell Road corridor is exposed to mobile noise sources originating from traffic along Highway 99, Mitchell Road and other local roadways, and aircraft activity from the Modesto City-County Airport. Noise also originates from such stationary sources as commercial and industrial operating systems and residential areas.

Current land uses along the two and one-half mile long corridor include a scattered mix of vacant/agriculture, residential, retail commercial, service commercial and light industrial uses. The Modesto City/County Airport is located approximately 1/2 mile northwest of the end of the study area.

Mitchell Road is a major arterial through the City. Truck traffic is heavy on the north end of Mitchell road where truck traffic from Highway 99, via Hatch Road, turns north onto Mitchell Road and crosses the river into the airport area which is industrialized with canneries and food processing plants. Truck traffic during peak canning season is estimated to peak at 13% of the total vehicle mix. Normal truck mix is 3-6% of the total vehicles.

### Vehicle Noise

Existing data from local intersections within the Mitchell Road corridor were computer modeled with the Federal Highway Administration's Highway Traffic Noise Prediction Model modified with the latest available California noise emissions curves (CALVENO-85). This model was modified to generate CNEL values. The model is programmed with average daily traffic levels, day/evening/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factor, and roadway dimensions. Assumptions for average roadway truck traffic include: a) average hourly noise levels for typical roadway truck volumes as specified in the Noise Element of the Stanislaus County General Plan; and b) worst-case volumes of 15% total trucks as might occur during peak canning season. The modelled output of existing traffic-generated noise levels along Mitchell Road are provided in Table 8, and is presented as a function of distance from the centerline of the respective roadway segments. These noise contours are also illustrated in Figure 10. The estimates provided here assume a worst-case truck-mix scenario (15%). An average truck mix would yield approximately a 25% reduction in the extent of the contours. For example, the 60 CNEL contour along Mitchell Road between Roeding and Whitmore would extend only 278 feet from the roadway centerline rather than 376 feet.

FIGURE 10 MITCHELL ROAD EXISTING (WORST-CASE) CNEL CONTOURS

## TABLE 8

## ESTIMATED EXISTING (WORST-CASE) MITCHELL ROAD TRAFFIC CNEL

| Location | Distance in Feet To CNEL 70 CNEL | 65 CNEL | 60 CNEL |
|---|---|---|---|
| Mitchell Road between Service and Roeding | 86 | 187 | 403 |
| Mitchell Road between Roeding and Whitmore | 89 | 193 | 415 |
| Mitchell Road between Whitmore and Fowler | 91 | 196 | 422 |
| Mitchell Road between Fowler and Hatch | 91 | 197 | 424 |
| Mitchell Road/SR 99 | 282 | 608 | 1,254 |

Data in the table and illustrated in the exhibit indicate that a significant portion of the corridor is currently exposed to noise levels exceeding the EPA's recommendation of 55 dB CNEL. The City's recommended acceptable noise levels are a minimum of 60 dB CNEL for residential. The 60 dB CNEL contour would encompass almost the entire width of the corridor, throughout which residential uses are scattered.

### Point (Stationary) Sources

The industrial uses throughout the corridor generate localized increases in noise intensity. These areas are generally limited to the northern end of the corridor and near Fowler and Roeding Roads. Commercial uses also generate noise due to the operation of heating and air conditioning equipment. Construction activity is also increasing within the corridor which contributes to increases in local noise intensity. Other point sources outside of the corridor may include industrial activities northerly of the river.

### Aircraft Noise

The noise exposure data presented in Table 10 does not include airport background noise. At roadway exposures of less than 65 dB, the airport increment becomes non-negligible relative to the total exposure in the area near Hatch/Mitchell Road. In any event, single event noise levels during aircraft overflights could range from 80 to 95 dBA depending upon the specific aircraft type. This is a substantial noise event but occurs too infrequently to generate a significant CNEL. The airport-related CNELs, as identified in the Airport Master Plan, are shown in Figure 11.

### *3.4.2 Environmental Impacts*

This noise analysis has been prepared to assess the existing and future noise impacts of the development of the proposed Mitchell Road Specific Plan. The analysis focuses on impacts anticipated from traffic generated along Mitchell Road.

The most significant element of the future noise environment that will change is that of vehicle traffic. Other mobile source (aircraft) and point source noise levels will essentially remain the same.

#### Vehicle Noise

The future scenario focuses on two possible development alternatives and the addition of their respective project-generated traffic to the surrounding environs. The development of the Mitchell Road corridor will involve the widening of Mitchell Road from a mixed width of 2 to 4 lanes to 4 complete travel lanes plus turning lanes for its entire length. The total right-of-way will be 105 feet. The road widening is anticipated to occur independent of approval or implementation of the proposed Mitchell Road Corridor Specific Plan.

With the widening of Mitchell Road, portions of the roadway (i.e., where only 2 lanes exist) will be moved closer to existing land uses. Anticipated, worst-case CNELs for the widening of Mitchell Road at existing traffic levels are provided in Table 9 and illustrated in Figure 12. As with the existing traffic-related noise scenario, the worst-case truck mix is assumed. Distances to CNEL contours during the typical truck mix periods would be reduced by 25%.

FIGURE 11 AIRPORT NOISE CONTOURS

## TABLE 9

## ESTIMATED CNEL FOR WIDENING OF MITCHELL ROAD AT CURRENT TRAFFIC VOLUMES

| Location | Distance in Feet to CNEL | | |
|---|---|---|---|
| | 70 CNEL | 65 CNEL | 60 CNEL |
| Mitchell and Road between Service and Roeding | 89 | 193 | 415 |
| Mitchell Road between Roeding and Whitmore | 92 | 199 | 428 |
| Mitchell Road between Whitmore and Fowler | 93 | 200 | 431 |
| Mitchell Road between Fowler and Hatch | 94 | 202 | 435 |

As the exhibit indicates, many land uses, including existing and proposed residential, within the corridor will be exposed to CNELs of 60 dB or greater. However, in general, the change in the roadway geometry due to the expansion will have very little effect on noise exposure at varying distances from the centerline. One-half of the traffic on the nearest lane will move somewhat closer, but one-half of the traffic in the far lane moves slightly farther away. The net noise impact is a relatively insignificant 0.2 dB increase from the revised alignment versus the existing geometry.

The other scenario evaluated involved the anticipated noise levels associated with the build-out of the proposed Mitchell Road Corridor Specific Plan and widening of Mitchell Road as proposed. The Mitchell Road Corridor Specific Plan is anticipated to capitalize on the economic/commercial potential of the corridor. Buildout will involve the urbanization of existing vacant and agricultural parcels and the intensification of developed but underutilized parcels. For this scenario, it was assumed that the roadway would be operating at capacity with a design level of 40,000 ADT. Estimated CNEL for this scenario, again assuming the worst-case truck conditions, is presented in Table 10. Figure 13 illustrates the CNEL contours. The contours would move 25% closer to the roadway during non-peak cannery operations.

FIGURE 12 ESTIMATED (WORST-CASE) CNEL CONTOURS FOR MITCHELL ROAD WIDENING

FIGURE 13 FUTURE (WORST-CASE) CNEL CONTOURS

## TABLE 10

## ESTIMATED WORST-CASE FUTURE CONDITIONS
## CNEL CONTOURS

| Location | Distance in feet to CNEL 70 CNEL | 65 CNEL | 60 CNEL |
|---|---|---|---|
| Mitchell Road (Entire length) | 151 | 375 | 700 |
| Mitchell Road/SR 99 | 338 | 728 | 1,457 |

Traffic noise along Mitchell Road, particularly at 40,000 ADT and a 50 mph travel speed (clearly the worst-case scenario), with a considerable fraction of trucks, is very high near the roadway. The high near-field (i.e., near Mitchell Road) exposure leads to predictions of large distances from the centerline of noise/land-use compatibility contours for noise sensitive uses. However, these distances are somewhat deceiving as the following expected conditions would reduce the real noise level:

- normal truck mix traffic flows
- intervening structures
- reduced traffic speeds
- existing attenuating features
- provision of an alternate route

The 60 CNEL contour indicates that area for which noise levels are anticipated to exceed the City CNEL standard for residential uses without any mitigation. However, it is anticipated that intervening structures and sound barriers such as sound walls will serve to attenuate noise to some degree; therefore, the actual contours may be narrower (i.e., closer to the roadway). The 70 CNEL contour indicates that area for which the City standard for commercial uses is exceeded. Commercial development within this contour will require adequate attenuation measures. If sufficient attenuation cannot be achieved through siting and construction practices to bring CNELs to an acceptable level, then incompatibilities between land uses and noise will occur.

The traffic noise increase at ultimate growth averages less than 10% or less than a 6 dB increase in CNEL levels from existing to buildout conditions. Roadway noise attenuation from typical noise abatement measures such as perimeter walls on suburban residential developments can normally reduce roadway noise levels by between 10-12 dB at ground level receptors within the "sound shadow" of such noise barriers. Thus, while there is a

significant increase in area noise exposure, it is possible to mitigate the effects of such growth to achieve a comparable noise exposure after such mitigation as exists with ambient conditions or even improve noise levels at sensitive land uses.

### Aircraft Sources

The "Airport Master Plan" and the "Airport Land Use Commission Plan" (August 1978) recommend guidelines for new construction within the airport approach and transition zone. These guidelines generally limit the type of use that can be allowed within this area, with noise criteria being a major consideration. The proposed land uses of the Specific Plan generally conform to the recommended uses in the airport plans. The Specific Plan proposes Business Park, which will include airport related uses, research and technology.

As indicated in the setting, because of the intermittent nature of aircraft noise, the airport is not anticipated to have a significant effect on uses located outside the airport approach and transition zone. In the event that the number of flights or the flight path should change significantly, it would be necessary to reassess the potential impacts of aircraft noise.

### Stationary Sources

The proposed project will result in increased intensity of uses and activity throughout the corridor area which will result in increased ambient noise levels. A large portion of the activity will be confined to inside commercial structures. However, activity occurring in parking lots or buildings that are not entirely enclosed may impact nearby residential area.

Commercial uses will have heating, ventilation and air conditioning equipment that will be located on the roofs or adjacent to buildings. Without appropriate shielding, impacts may occur to noise sensitive residential receptors which may be located nearby.

Other noise nuisances may occur from bells, PA systems, and backup warning beepers used in association with commercial activity.

## *3.4.3 Mitigation Measures*

Traffic-generated noise can be mitigated either directly by modifying the noise source or indirectly by buffering sensitive land uses from traffic noise. Direct means of mitigating traffic noise include:

- reducing total traffic trips
- limiting truck traffic along certain noise-sensitive routes
- limiting truck traffic to designated daytime hours

- reducing overall traffic speeds along Mitchell Road
- synchronizing traffic light signals to minimize acceleration/deceleration
- reroute traffic

Noise sensitive land uses can also incorporate measures to minimize the overall impacts of traffic-generated noise to acceptable levels, including:

- the sensitive siting of land uses to reduce exposure (i.e., placing patios on sides away from noise source, locating bedrooms away from noise source, using parking areas as buffers between source and sensitive use);
- construction of sound barriers between the source and the line-of-sight; and
- construction techniques such as reduced window area and the use of sound insulating materials.

Impacts from stationary noise sources can be reduced through:

- compliance with the City noise ordinance;
- acoustically screening outdoor machinery;
- screening of rooftop heating, ventilation and air conditioning equipment;
- restricting construction and other noise nuisance activities to the daytime hours; and
- requiring adequate setbacks from property lines.

## *3.5 Aesthetics/Light and Glare*

### *3.5.1 Environmental Setting*

The corridor is partially developed with commercial, residential and light industrial uses. Although approximately 75% of the land is vacant or in low-intensity rural use, the corridor appears to be more developed because development is scattered. The most intense concentration of development along Mitchell Road occurs between Roeding and Fowler Roads but development extends from Don Pedro to the Tuolumne River.

Planning Area 1 can be characterized as semi-rural. The fallow and agricultural fields and scattered housing in this area give the perception of openness. Planning Area 2, where most of the development is concentrated, is a conglomerate of urban uses. Strip commercial and residences fronting on Mitchell Road give this area a "boxed-in" feeling. Structures and architectural style in this area are monotonous. The color scheme is predominately earth tones. The new Post Office is a key architectural element which incorporates the Corridor's existing style but with a modern appeal. Area 3 is located along the Tuolumne River. This area is wooded and has some topographic relief. The trees in this area are a key visual resource. As in Planning Area 1, portions of Area 3 give a sense of openness.

Portions of the Corridor are currently undeveloped and not exposed to intense levels of nighttime illumination or glare. The developed portion, between Roeding and Fowler, creates some nighttime illumination, especially car lot security lighting; however, because of the sparsity of development, illumination is not widespread.

### *3.5.2 Environmental Impacts*

Specific Plan development will change the site's character from rural and semi-rural in Areas 1 and 3 to urban. Planning Area 1 is anticipated to become an intense commercial center to serve quasi-regional needs. It will serve as a gateway to the City.

Development of the Corridor will significantly increase nighttime illumination in an area where none previously existed. Lighting of the streets, parking areas and commercial centers will be the most significant contributing sources. Project trees will serve to screen some of the nighttime light.

Commercial development along Highway 99 may create nuisance glare to motorists if structures have significant areas of reflective surfaces.

Increased nighttime illumination (i.e., the addition of light to the night sky) may create visibility problems for aircraft using the Modesto City/County Airport during nighttime hours.

### *3.5.3 Mitigation Measures*

Development and adoption of development regulations and design guidelines will provide a guide for continuity of future development and a means of monitoring development proposals.

The proposed design guidelines must provide for a cohesive overall architectural theme, but must be flexible enough to allow for creative variation in the individual design of projects.

The Planning Department should review building and site designs for developments within the Corridor to ensure aesthetic compatibility. Development should be reviewed to ensure that the intent of the design guidelines and development standards are met.

Key visual and natural resources should be preserved and enhanced throughout the Corridor. For example, mature trees should be preserved when feasible, especially in PA 3. Attractive architectural styles should be incorporated into the design guidelines. The Post Office color, materials and style should be encouraged throughout the Corridor to enhance this key feature.

Incompatible land uses within the Corridor or with adjacent properties, should be buffered and screened from residential areas. Berms or natural landscaping can be used to screen industrial and office park areas on the north. Walls and landscaping are suitable for screening parking and loading areas from residential uses adjacent to Planning Area 2.

Commercial development in Planning Areas 1 and 3 should be variably spaced and set back from Mitchell Road so as to avoid a wall of building structures and retain some of the rural and open ambience that currently exists in those areas. In Planning Area 2, placement of buildings close to Mitchell Road should be encouraged to be consistent with the closed-in theme already developing there.

To reduce the project-generated nighttime illumination and glare, the following measures are recommended:

- Any lighting provided to illuminate public parking areas should be arranged so as to direct or reflect its light away from any residential areas or away from public street rights-of-way.
- Low intensity lighting, such as sodium vapor lighting, should be used for street and security where consistent with public safety.
- A tree buffer should be provided around high intensity light generating areas.

## *3.6 Land Use*

### *3.6.1 Environmental Setting*

**Existing Land Uses**

A large portion of the study area (approximately 75%) is in rural use. Rural uses include undeveloped land, agricultural land, and residential with less than 2 du/acre. Existing development, which is predominantly commercial, is concentrated at the intersections of Don Pedro/Mitchell and Hatch/Mitchell and along Mitchell between Fowler and Roeding. Figure 14 generally depicts the existing land uses within the corridor and Table 11 summarizes the acreages of these uses.

TABLE 11

SUMMARY OF EXISTING LAND USES

| Land Use Category | Estimated Acreage | Percent of Area* |
|---|---|---|
| Rural (vacant, agriculture, low-density residential) | 333 acres | 76% |
| Residential (greater than 2 du/acre) | 36 acres | 8% |
| Commercial | 41 acres | 9% |
| Light Industrial | 22 acres | 5% |
| Institutional | 5 acres | 1% |
| Open Space/ Recreational | 0 acres | 0% |

* Percentages do not total 100 percent due to rounding individual land use category percentages to the nearest one percent.

FIGURE 14 EXISTING LAND USES

The predominantly commercial area is Whitmore Road at Mitchell. The Whitmore Plaza, located at the southwest corner of this intersection, incorporates a major supermarket, drug store and several convenience businesses. The new post office is adjacent to and south of Whitmore Plaza. Also at this intersection are two service stations and two restaurants. Offices and commercial uses stretch southerly on the east side. Uses include a veterinary facility, dance studio, pizza delivery and health club.

### Surrounding Land Uses

Surrounding land uses are predominantly residential. Established residential neighborhoods are along the west side of the corridor. East of the corridor, across the irrigation canal, new residential subdivisions are being developed. Light industrial uses are also located along the canal. The Modesto City/County airport and the Beard Industrial tract are located northerly of the Corridor, across the Tuolumne River. Land south of Highway 99 is generally rural and in agriculture use.

### Existing Land Use Designations

The existing General Plan Land Use designations are shown in Figure 15. The dominant land use designation within the corridor is Multi-Family High Density Residential (MFHD). Other designations include: Single-Family Low Density Residential (SFLD); Residential Agriculture (RA); Highway Commercial (HC); Community Commercial (CC); Neighborhood Commercial (NC); Service Commercial (SC); Professional Office (PO); and Private Recreation (PR).

Areas adjacent to the corridor are predominantly SFLD with Service Commercial Reserve (SC-R) and Residential Reserve (RR) to the southeast; Multi-Family Medium Density Residential (MFMD) to the northeast; and Industrial Reserve (IR) south of Highway 99.

### Existing Zoning

The site is presently zoned a mixture of Single-Family Residential (R-1), Planned Community (P-C), Community Commercial (C-2), Agriculture (A), Open Space and Recreation(OS-R), Highway Commercial (H-1), Wholesale Commercial (C-3), Special Commercial (S-C), Administrative Professional (A-P), Two-Family Residential (R-2), Medium Density Multi-Family Residential (R-3) and Medium High Density Multi-Family Residential (R-4). Figure 16 depicts the corridor's current zoning.

Portions of the corridor are located within the unincorporated areas of the County. Zone classifications include two types Exclusive Agricultural Zone (A-2-3) and (A-2-10), which require minimum lot sizes of 3 acres and 10 acres, respectively.

FIGURE 15 EXISTING LAND USE DESIGNATIONS

FIGURE 16 EXISTING ZONING

## Applicable Plans and Policies

The project area falls under the jurisdiction of the City of Ceres General Plan adopted November 1984. Although approximately 75 acres lie unincorporated within the County of Stanislaus, the City's sphere of influence, and General Plan, includes the entire corridor. The northern portion of the corridor (north of Hatch) is within the Approach and Transition zone of the Modesto City/County Airport. Land use recommendations for this area are presented in the "Modesto City/County Airport Master Plan" (Appendix B - Off-Airport Land Use) and in the "Airport Land Use Commission Plan" (adopted August 3, 1978).

In the Airport Land Use Commission Plan, the area north of Hatch Road falls within the "Approach and Transitional Surfaces" (ATS) category. This area is defined as "that area under the approach and take-off extensions and transitional surfaces as defined by the flight paths in use at the airport and by Federal regulations". The purposes of the designation is to provide land use constraints to maximize safety and minimize noise conflicts.

According to the State of California General Plan Guidelines (as amended), as it applies to the City of Ceres, the City's General Plan must be consistent with the Modesto City/County Airport Master Plan. The City must notify the Airport Land Use Commission of any proposed general plan amendments, zoning ordinance or building regulation changes within the airport study area and coordinate with the Commission any proposed modifications. If the Commission determines any such proposal to be inconsistent with the Airport Master Plan, the City may overrule the Commission by a two-thirds vote of its governing body. The vote must be supported by specific findings and this process requires a public hearing.

The Modesto City/County Airport Master Plan study area includes that portion of the Mitchell Road Corridor located north of Hatch Road. The Ceres General Plan does not specifically detail the special problems related to the airport. However, for this area the General Plan does recommend Residential Agricultural uses (1 du/10 acres).

According to the Airport Master Plan, "the requirements are that no land uses be permitted which would impair airspace, visibility, or communications, or which would otherwise increase the potential or magnitude of aircraft mishaps". Based on the definition of the Transitional Zone, as defined in the Ceres Zoning Ordinance, there appear to be no additional height limit restrictions placed on uses within the Mitchell Road Corridor/airport interface.

### *3.6.2 Environmental Impacts*

The project involves the approval of the Mitchell Road Corridor Specific Plan which when adopted, would define the land use and zoning regulations for the Corridor. The proposed land uses present a more intense commercial scenario and would restrict new residential development within the Corridor. The proposed land use plan expands the commercial designations which are currently shown on the General Plan Land Use Map.

Development of the Specific Plan as proposed would change the character of the Corridor. However, the development regulations and design guidelines of the Specific Plan are intended to minimize incompatibilities between future and existing land uses and control the design so that it will be compatible with existing features.

Noise, nuisance and traffic problems are anticipated between the residential and commercial interface, especially in the area between Whitmore Avenue and Hatch Road where residences front onto Mitchell.

### *3.6.3 Mitigation Measures*

Incompatible land uses should be buffered to minimize potential impacts associated with noise, light, view and privacy. Specifically, through traffic flow through the residential neighborhoods adjacent to the Corridor should be discouraged. This can be accomplished through limiting access with gates, implementing cul-de-sacs on residential collectors which now connect with Mitchell Road, or designating these streets as one-way. Sound walls and barriers should be constructed between Mitchell Road and existing homes to minimize noise and privacy impacts.

The Specific Plan should incorporate minimum setback requirements between proposed commercial uses and existing residences west of Mitchell Road. The Specific Plan should also incorporate landscaping requirements so that these residences are visually screened from the proposed commercial developments.

The Specific Plan should be approved by the Airport Land Use Commission to ensure that the safety requirements for the airport will be adequately addressed.

The use of multi-family residential uses, or less intense commercial uses, along the canal will serve as a transition to residential areas east of the canal.

## *3.7 Population and Housing*

### *3.7.1 Environmental Setting*

**Population**

The 1980 Census reported the population of the City of Ceres to be 13,281, which represented a 120 percent increase over the 1970 population of 6,029 (see Table 18). By 1987, the population had increased by 4,700 persons; increasing the population by 26.14 percent to 17,891. Approximately 5.60 percent of the County's total population resides in Ceres.

TABLE 18

POPULATION TOTALS

| | April 1960 | April 1970 | April 1980 | January 1985 | January 1986 | January 1987 |
|---|---|---|---|---|---|---|
| Stanislaus County | 157,294 | 195,506 | 265,900 | 300,226 | 309,539 | 320,645 |
| Unincorporated | 95,029 | 94,335 | 92,881 | 93,752 | 95,782 | 96,764 |
| Ceres | 4,405 | 6,029 | 13,281 | 16,845 | 17,328 | 17,981 |
| Hughson | ----- | ----- | 2,943 | 3,035 | 3,060 | 3,090 |
| Newman | 2,148 | 2,505 | 2,785 | 3,241 | 3,420 | 3,416 |
| Modesto | 36,585 | 61,712 | 106,963 | 126,749 | 131,434 | 138,524 |
| Oakdale | 4,980 | 6,594 | 8,474 | 9,695 | 9,958 | 10,173 |
| Patterson | 2,246 | 3,147 | 3,908 | 4,819 | 5,022 | 5,695 |
| Riverbank | 2,786 | 3,949 | 5,695 | 6,415 | 6,853 | 6,958 |
| Turlock | 9,115 | 13,992 | 22,287 | 32,528 | 33,560 | 34,760 |
| Waterford | ----- | 2,243 | 2,683 | 2,297 | 3,122 | 3,284 |

Source: Mitchell Road Corridor Specific Plan Market Analysis, James Zuver and Associates, June 1988.

In reviewing Table 19 (Population Trends), it is evident that the cities of Ceres, Modesto and Turlock experienced the greatest population growths among the cities listed. During the ten year period from 1970 to 1980 Ceres grew 120.2 percent, Modesto 73.3 percent and Turlock 59.3 percent.

The Stanislaus Area Association of Government projects the population of Ceres to be 20,335 by 1990, or approximately 5.9 percent of the County's 1990 population. Based on this figure, the Ceres planning area population will increase by 53 percent from 1980 to

1990. In the period from 1970 to 1980, the Stanislaus County General Plan Housing Element reported that Ceres experienced an annual average growth rate of 12 percent.

TABLE 19

POPULATION TRENDS

| | 1970 | 1980 | Total % Change | Average Annual Change (%) |
|---|---|---|---|---|
| Stanislaus County | 195,506 | 265,900 | 36.0% | 3.60% |
| Ceres | 6,029 | 13,281 | 120.2% | 12.02% |
| Newman | 2,505 | 2,785 | 11.2% | 1.12% |
| Modesto | 61,712 | 106,963 | 73.3% | 7.33% |
| Oakdale | 6,594 | 8,474 | 28.5% | 2.85% |
| Patterson | 3,147 | 3,908 | 24.2% | 2.42% |
| Riverbank | 3,949 | 5,695 | 44.2% | 4.42% |
| Turlock | 13,992 | 22,287 | 59.3% | 5.93% |
| Waterford | 2,243 | 2,683 | 19.6% | 1.96% |

The population of Stanislaus County in 1980 was 265,900. From 1980 to 1987, the County experienced a 20.6 increase in the population, which grew to 320,645. The ethnic composition of Stanislaus County in 1980 was 80.17 percent Caucasian, 1.14 percent black, 15.0 percent Spanish and 3.69 percent Asian and other. The racial composition of the City is very similar to the County with only a slightly smaller Spanish population that the County. The City of Ceres' ethnic composition in 1980, was as follows: 82.5 percent caucasian, 0.3 percent black, 3.9 percent Indian and Asian and 13.3 Spanish.

The primary working age group, age 20 to 64, accounted for 59.22 percent of the County's population with 10.98 percent over the age of 25. In the City of Ceres, the primary age group represented 67.98 percent of the City's population with 9.7 percent over the age of 65.

## Housing

State Department of Finance estimates for January 1, 1987 show the household size in the City of Ceres to be 2.8 persons per household. The vacancy rate has greatly fluctuated over the years, from 6 percent in 1975 to 11 percent in 1980 to 7.6 percent in 1985 to 13.5 percent as of January 1, 1987. In January 1987 only 6,498 units of the total 7,512 units in the City were occupied. Single-family homes are the prevalent housing unit in the City with almost 70 percent of the City's housing stock being single-family dwelling units and the remainder of the units are multi-family or mobile home units. See Table 20.

## TABLE 20

## HOUSING CHARACTERISTICS

| Location | Single-Family Units | Multi-Family Units | Occupied Units | Total Units | % Vacant |
|---|---|---|---|---|---|
| Ceres | 5,233 | 1,729 | 6,498 | 7,512 | 13.50% |
| Stanislaus County | 91,264 | 26,703 | 116,468 | 125,349 | 7.09% |

Source: State Department of Finance, Information for January 1, 1987

The Stanislaus Area Association of Governments Housing Needs Report of 1983 indicated the assumed housing need in Ceres from 1983 to 1992 to be 1,425 units. Of these units, 470 should be rental units and 641 should be multi-family dwelling units. It is not known whether the housing needs have changed substantially since the 1983 report, but the building permit activity in Ceres shows that almost all new construction is single-family housing. Building permit activity in Ceres and Modesto, combined with recent population projections, suggest that the assumed housing need is not necessarily indicative of the growth rate and the demand for housing in the area. An annual average of 415 building permits for single-family homes (an overall total of 1,565 permits) were issued for the period between 1984 and September 1987. These numbers indicate a fairly inactive housing development scenario.

### *3.7.2 Environmental Impacts*

**Population**

Existing land uses are primarily rural and residential uses, with existing land use designations being single-family low density residential and multi-family high density residential.

The current land uses for the corridor include 24.20 acres of neighborhood commercial, 9.84 acres of planned commercial, 15.15 acres of highway commercial, 14.05 acres of business park, 35.71 acres of residential, 4.44 acres of church and 333.3 acres of vacant land. The plan proposes 52.89 acres of neighborhood commercial, 138.45 acres of planned commercial, 28.86 acres of highway commercial, 61.62 acres of retail commercial, 105.40 acres of business park and 49.48 acres of residential.

The specific plan proposes that the corridor primarily be neighborhood commercial, highway commercial, quasi-regional commercial, mixed use (commercial, residential, business park) thereby reducing the amount of residential acreage that is designated in the current General Plan.

As the proposed project does allow the development of 122 new residential uses, some population growth will be directly generated by the Plan. In addition, as residential growth is required to support the volume of proposed commercial uses, indirect population growth is anticipated. It is projected that the largest population growth in the City will occur east of the corridor.

The Mitchell Road Corridor Specific Plan project will also generate employment opportunities. A portion of the new employees may choose to relocate in the City of Ceres.

The project will also indirectly create demand for new goods and services and in so doing will induce a certain amount of spin-off growth.

## Housing

Additional housing demand generated by the project will impact the local housing stock and will contribute pressure on vacancy rates and housing costs in the City of Ceres and the surrounding area.

It is especially difficult to estimate the number of future employees who will choose to relocate in the City or the surrounding area due to the creation of new jobs. Many factors, both tangible and intangible, influence personal housing locational decisions. Among the most significant factors are family income levels, and the cost and the availability of suitable housing in the local area. The increasing presence of two-wage earner families has enhanced the range of housing choices affordable to many people.

The establishment of a redevelopment district in Planning Area 1 has been recommended for the project. Establishment of the redevelopment district will result in 20 percent of all tax increments allocated to the redevelopment agency being set aside in a low- and moderate-income housing fund. The set-aside fund must be used to increase the supply of low- and moderate-income housing within the redevelopment area; provide for replacement housing for units destroyed or removed as a consequence of redevelopment activities; and/or provide for a percentage of low- and moderate-income housing for all new and rehabilitated dwelling units developed within the redevelopment area.

## General Plan Goals and Policies

The City of Ceres in the Housing Element of its General Plan has established goals and

policies to meet the current and future housing needs in the City. The goals that are most applicable to the project are:

- Continue to provide an adequate inventory of developable vacant land for residential development;
- Provide affordable housing to households with lower incomes;
- Promote the development of a pleasant, safe and healthy living environment; and
- Maintain a balanced and healthy city-wide housing stock that will provide adequate housing choice.

While the proposed project is promoting a commercial corridor and reducing the amount of land that could be developed for residential uses, approximately 49.48 acres will still be designated for residential purposes. As mentioned above, Planning Area 1 is being recommended to be designated redevelopment district, which will ensure monies are set aside for low- and moderate-income housing.

### *3.7.3 Mitigation Measures*

Establishment of Planning Area 1 as a redevelopment district will ensure monies are set aside for low- and moderate-income housing on the Corridor and in the City of Ceres.

## *3.8 Traffic and Circulation*

### *3.8.1 Environmental Setting*

#### Introduction

This section summarizes the "Mitchell Road Specific Plan Traffic Impact Study" prepared by Wilbur Smith Associates (dated November 1988) and contained in its entirety as Appendix D of this environmental document. An intersection analysis was performed for the PM peak hours. This analysis included trip generation, distribution and assignment for the Mitchell Road buildout, and determination of existing and projected levels of service at three area intersections.

#### Existing Street and Freeway System

Highway 99 is a major grade-separated access controlled highway bordering the south end of the study area and connecting the City of Ceres with Modesto and Turlock, to the north and south, respectively. In the vicinity of Mitchell Road, Highway 99 is six lanes with an on/off ramp at Mitchell Road. Highway 99 also enters/exits at Whitmore Avenue and Hatch Road.

Mitchell Road is designated in the Circulation Element as a major thoroughfare. By definition, major thoroughfares should have four travel lanes with left turn pockets/lanes and a 90 to 120 foot right-of-way. Access should be limited to primarily primary and secondary collectors. Direct access is discouraged. Mitchell Road currently is a two to four lane roadway with signalized major intersections. The road terminates at the Highway 99 on the south and becomes El Vista Avenue north of the airport.

Service Road, Whitmore Avenue and Hatch Road are also designated as major thoroughfares. Fowler Road and Roeding Road are primary collectors.

#### Existing Traffic

Turning Movement Counts

Peak hour turning movement counts were made at three intersections in the City of Ceres. These intersections were:

- Mitchell Road - Hatch Road;
- Mitchell Road - Whitmore; and
- Herndon Road - Hatch Road.

The results of counts conducted on Thursday, June 2, 1988, from 3:30 PM until 6:00 PM, are shown in Table 21. This table presents the peak hour turning counts at all three intersections. All three intersections are traffic signal controlled.

## TABLE 21

## PM PEAK HOUR TURNING MOVEMENTS

| | Northbound | | | Eastbound | | | Southbound | | | Westbound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection | RT | TH | LT | RT | TH | LT | RT | TH | LT | RT | TH | LT |
| Mitchell/ | 53 | 645 | 73 | - | - | - | 502 | 658 | 118 | - | - | - |
| Hatch | - | - | - | 73 | 223 | 309 | - | - | - | 131 | 360 | 131 |
| Mitchell/ | 113 | 628 | 203 | - | - | - | 193 | 475 | 77 | - | - | - |
| Whitmore | - | - | - | 240 | 539 | 389 | - | - | - | 80 | 231 | 97 |
| Herndon/ | 18 | 261 | 118 | - | - | - | 132 | 159 | 190 | - | - | - |
| Hatch | - | - | - | 227 | 728 | 245 | - | - | - | 439 | 369 | 34 |

Date: Thursday June 2, 1988; 3:30 - 6:00 PM
Source: Wilbur Smith Associates.

| | Northbound | | | Eastbound | | | Southbound | | | Westbound | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection | RT | TH | LT | RT | TH | LT | RT | TH | LT | RT | TH | LT |
| Herndon/Hatch | 20 | 240 | 130 | - | - | - | 160 | 190 | 145 | - | - | - |
| (4-5 p.m.) | - | - | - | 200 | 695 | 245 | - | - | - | 410 | 335 | 30 |
| Herndon/ | | | | | | | | | | | | |
| Hatch | 25 | 150 | 65 | - | - | - | 110 | 100 | 60 | - | - | - |
| (7:15-8:15 a.m.) | - | - | - | 135 | 445 | 90 | - | - | - | 480 | 230 | 20 |

Sources: Jail Study
City of Ceres; June, 1988.

Observations of intersection operations indicate that they operate satisfactorily. However, the Mitchell-Hatch and Herndon-Hatch intersections operate at close to capacity. Additionally, Hatch Road and Mitchell Road (north of Hatch) carry a high percentage of large trucks. These trucks are travelling from State Highway 99 to the industrial area near

the Modesto Airport. Many trucks turn left from Hatch Road to Mitchell Road during the PM peak hour. Currently this does not present a problem; however, should volumes at the intersection increase, this may significantly degrade intersection capacity.

Current Average Daily Traffic Volumes

The City of Ceres has provided traffic counts on major roadways in the Mitchell Road area. These counts are summarized in Table 22. It should be noted that counts are 24-hour averages and include traffic going in both directions.

The traffic counts shown in Table 22 confirm observations made in the field. There is a heavy volume on Mitchell north of Hatch and on Hatch west of Mitchell. This indicates that a large volume of traffic is using the Hatch-Mitchell route from State Route 99 to the Modesto Airport industrial area.

TABLE 22

AVERAGE DAILY TRAFFIC VOLUMES

| Location | | ADT | Date |
|---|---|---|---|
| Mitchell | - North of Roeding | 20,300 | 07-87 |
| | - North of Whitmore | 19,500 | 10-86 |
| | - South of Hatch | 20,200 | 03-88 |
| | - North of Hatch | 30,500 | 06-88 |
| Hatch | - East of Mitchell | 9,200 | 10-86 |
| | - West of Mitchell | 23,073 | 09-86 |
| | - East of Central | 19,400 | 03-88 |
| | - West of Central | 21,200 | 03-88 |
| | - East of Herndon | 22,100 | 09-86 |
| | - West of Herndon | 24,700 | 09-86 |
| Herndon | - South of Hatch | 8,600 | 09-86 |
| | - North of Hatch | 15,400 | 08-87 |

Note: ADT = Average daily traffic (Total # of vehicles in 24-hour period travelling in both directions).
Source: City of Ceres; June, 1988.

Existing Level of Service Analysis

The volume-to-capacity (V/C) ratio is an indication of the level of service (LOS) at which

an intersection is operating. The level of service classification system is a scale which ranks streets, highway, and intersection operations based on the amount of traffic and traffic operations. The system is a scale with a range of A through F. Level A, being the best, represents free flow conditions and Level F represents jammed or exceeding capacity conditions.

Existing traffic conditions at the three intersections were analyzed. The analysis performed was based upon the standard level of service method (planning) developed by the Transportation Research Board (TRB). In a level of service analysis, the number of vehicles projected to be making conflicting movements is compared to the capacity for these movements. The capacity is calculated based upon the intersection's physical characteristics such as the number of lanes and traffic controls. The ratio of the maximum volume of conflicting movements to the capacity of the intersection (V/C ratio) is used to determine a qualitative measure of intersection operations. The qualitative measure is called Level of Service (LOS) and is broken down into six categories "A" through "F" where "A" is the best and "F" indicated unacceptable intersection operations. The V/C ratios and their corresponding levels of service are presented in Table 23.

TABLE 23

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

| V/C Ratio | Level of Service |
|---|---|
| 0.59 and under | A |
| 0.60 - 0.69 | B |
| 0.70 - 0.79 | C |
| 0.80 - 0.89 | D |
| 0.90 - 0.99 | E |
| 1.00 and over | F |

Source: Transportation Research Board, Circular 212, January 1980; Table 7, Page 12.

It should be noted that the analysis uses the TRB 1985 Highway Capacity Manual Planning Method. This method calculates V/C ratio, but does not present the results in terms of levels of service. In order to better illustrate intersection operations conditions, levels of service from the earlier methodology (TRB Circular 212) are presented. The analysis uses a computerized intersection analysis program developed by Wilbur Smith Associates.

Results of the intersection level of service analysis are presented in Table 24. The analyses indicate that the intersections are operating satisfactory under existing conditions. However, the Mitchell-Hatch intersection is operating at LOS "D" and is very close to LOS "E". This result is consistent with field observations of intersection operations. A computer printout of the analyses is attached in Appendix D.

TABLE 24

EXISTING LEVEL OF SERVICE CONDITIONS - PM PEAK

| Intersection | Volume to Capacity Ratio | Level of Service |
|---|---|---|
| Mitchell-Hatch | 0.89 | D |
| Mitchell-Whitmore | 0.77 | C |
| Herndon-Hatch | 0.70 | C |

Source: Wilbur Smith Associates; November 1988.

*3.8.2 Impacts*

Trip Generation

This step consists of estimating the number of trips expected to be generated by the development project based upon the land use characteristics. Commonly accepted trip generation rates developed by Caltrans and the Institute of Transportation Engineers were used in this study. Table 25 presents those trip generation rates.

The trip generation rates shown in Table 25 were applied to the specific plan land uses in order to estimate the average number of vehicles generated by the plan in the AM peak, PM peak and daily. Results of this analysis are summarized in Table 26.

Several assumptions were made concerning trip generation. First, while there will not be a high degree of interaction between the proposed land uses, there will be some. Therefore, internal trips were estimated at 10 percent of total trips. Second, it was assumed that 50 percent of the neighborhood commercial trips already take place and will not be new trips. Therefore, trip generation from neighborhood commercial was reduced by 50 percent.

As shown in Table 26 land uses proposed in the plan are projected to generate almost 210,000 daily trips. During the AM peak, 10,071 inbound and 8,179 outbound trips will be generated in the area. During the PM peak, 9,533 inbound and 11,359 outbound trips will be generated by development in the specific plan area.

## TABLE 25

## TRIP GENERATION RATES

| Development Type | Daily Trips | Units | AM Peak Daily Percent | AM Peak Percent In | AM Peak Percent Out | PM Peak Daily Percent | PM Peak Percent In | PM Peak Percent Out |
|---|---|---|---|---|---|---|---|---|
| Residential | | | | | | | | |
| Single Family | 10 | DU | 8 | 33 | 67 | 12 | 67 | 33 |
| Multi-Unit 5-11 DU/AC | 7 | DU | 8 | 33 | 67 | 12 | 67 | 33 |
| Business/Professional | | | | | | | | |
| General | 3 | EMP | 17 | 85 | 15 | 14 | 25 | 75 |
| General | 300 | AC | 17 | 85 | 15 | 14 | 25 | 75 |
| 0-100 KSF (G) | 12.7 | KSF(G) | 17 | 85 | 15 | 14 | 25 | 75 |
| 100-200 KSF (G) | 14.3 | KSF(G) | 17 | 85 | 15 | 14 | 25 | 75 |
| Over 200 KSF (G) | 10.9 | KSF(G) | 17 | 85 | 15 | 14 | 25 | 75 |
| Industrial | | | | | | | | |
| General | 3.6 | EMP | 16 | 90 | 10 | 19 | 81 | 19 |
| General | 60 | AC | 16 | 90 | 10 | 19 | 81 | 19 |
| Commercial | | | | | | | | |
| Neighborhood 1-49 KSF | 118 | KSF | 8 | 50 | 50 | 9.6 | 48 | 52 |
| Neighborhood 50-99 KSF | 82 | KSF | 8 | 50 | 50 | 9.6 | 48 | 52 |
| Regional 100-199 KSF | 67 | KSF | 8 | 50 | 50 | 9.6 | 48 | 52 |
| General | 315 | AC | 8 | 50 | 50 | 9.6 | 48 | 52 |
| Highway | 315 | AC | 8 | 50 | 50 | 9.6 | 48 | 52 |

Sources: Caltrans District 4; 15th Progress Report on Trip-End Generation; December, 1983; and Institute of Transportation Engineers; Trip Generation Handbook; 1985.
Note: (G) = Gross

## TABLE 26

## SPECIFIC PLAN TRIP GENERATION

| Land Use | Change[a] Difference | Units | Daily Rate | Daily[b] Total | Total Trips By Time Period AM In | AM Out | PM In | PM Out |
|---|---|---|---|---|---|---|---|---|
| N Comm[c] | 480 | KSF | 59 | 25,488 | 1,020 | 1,020 | 1,174 | 1,272 |
| P Comm | 1,723 | KSF | 67 | 103,897 | 4,156 | 4,156 | 4,788 | 5,187 |
| H Comm | 245 | KSF | 67 | 14,774 | 591 | 591 | 681 | 737 |
| Retail | 805 | KSF | 67 | 48,542 | 1,942 | 1,942 | 2,237 | 2,423 |
| Business | 1,255 | KSF | 14 | 16,152 | 2,334 | 412 | 565 | 1,696 |
| SF Resid | 122 | DU | 10 | 1,098 | 29 | 59 | 88 | 43 |
| | TOTAL | | | 209,950 | 10,071 | 8,179 | 9,533 | 11,359 |

[a] Change = Difference between existing land uses and proposed.
[b] Assumes 10 percent internal trips
[c] Rate assumes 50 percent neighborhood commercial trips are new.

Notes:

N Comm = Neighborhood Commercial
P Comm = Planned Commercial
H Comm = Highway Commercial
SF = Single Family
DU = Dwelling Units
KSF = Thousand Square Feet

Source: Wilbur Smith Associates; November, 1988.

### Trip Distribution and Assignment

This step consists of estimating which direction trips generated by the development project will go and which roadways they will use. The basic assumption in estimating trip distribution is that traffic is attracted to an area in proportion to the relative amount of development in that area compared to the entire area.

In the Mitchell Road analysis, trip distribution was assumed to be proportional to the existing traffic patterns. The reason for this is that the Mitchell Road Specific Plan does

not propose a combination of residential and retail/business uses. If this were the case, then there would be a large share of internal trips, i.e., trips from new residential units to retail/business areas within the study area. Two additional trip distribution assumptions were made. First, business park development in the northern Mitchell Road area is expected to draw most of its traffic from Modesto and the north. Thus, 50 percent of traffic from this area was assumed to be oriented to the north.

Second, the large retail area at the southern portion of Mitchell Road is expected to draw regional traffic associated with Highway 99. Thus, 50 percent of traffic generated by these zones was assigned to the highway. Table 27 presents the trip distribution assumed in this analysis.

TABLE 27

TRIP DISTRIBUTION ASSUMPTIONS

| Direction | Percentage |
|---|---|
| North on Mitchell | 25% |
| East on Hatch | 19 |
| East on Fowler | 2 |
| East on Whitmore | 14 |
| East on Roeding | 2 |
| East on Service | 6 |
| South on Mitchell | 12 |
| West on Service | 4 |
| West on Roeding | 2 |
| West on Whitmore | 6 |
| West on Hatch | 8 |
| TOTAL | 100% |

Notes: (1) Business park land uses north of Hatch Road assumed to be oriented 50 percent to north.
(2) Regional commercial land uses south of Roeding assumed to be oriented 50 percent to Highway 99.

Source: Wilbur Smith Associates, November 1988.

## Traffic Impact Analysis

Traffic generated by specific plan development was added to existing traffic in order to estimate the traffic impacts of the project. Level of service analyses were performed on

the proposed land use plan under several scenarios. The analysis results are presented in Table 28 and illustrated in Figure 17. Details of each scenario are presented below.

Existing Geometry - This scenario assumes buildout of the specific plan with no changes to the existing roadway geometry. As shown in Table 28, this scenario results in extremely poor traffic conditions.

Proposed Geometry - This scenario assumes buildout of the specific plan with the changes to Mitchell Road intersections which are proposed as part of the specific plan. Details of proposed geometry were taken from the "Mitchell Road Plan Line and Channelization Plan" dated April 15, 1988 by Lew-Garcia-Davis Engineers. It should be noted that the City has not formally adopted this plan.

**TABLE 28**

**PROJECTED INTERSECTION LEVEL OF SERVICE**

| Intersection | Existing Conditions V/C LOS | Project + Existing Geometry V/C LOS | Project + Proposed Geometry V/C LOS | Project + Mitigated Geometry V/C LOS |
|---|---|---|---|---|
| Herndon-Hatch | | | | |
| AM Peak | 0.53 C | 1.06 F | 1.06 F | 0.92 E |
| PM Peak | 0.69 C | 1.34 F | 1.39 F | 1.20 F |
| Mitchell-Hatch | | | | |
| AM Peak | 1.00 F | 2.66 F | 1.99 F | 1.45 F |
| PM Peak | 0.89 D | 3.11 F | 2.28 F | 1.75 F |
| Mitchell-Whitmore | | | | |
| AM Peak | 0.89 D | 2.33 F | 2.33 F | 1.25 F |
| PM Peak | 0.77 C | 2.46 F | 2.46 F | 1.29 F |

Notes:

Existing geometry, proposed geometry, and mitigated geometry assume traffic from buildout of proposed Specific Plan plus existing traffic.

V/C = Volume to Capacity Ratio
LOS = Intersection Level of Service

Source: Wilbur Smith Associates, November 1988.

FIGURE 17 INTERSECTION LEVELS OF SERVICE

As shown in Table 28, there is little change in intersection operations between the existing geometry scenario and the proposed geometry scenario. The reason for this is that no geometry changes are proposed for the Herndon-Hatch or Mitchell-Whitmore intersections.

Mitigated Geometry - The mitigated geometry scenario was developed by Wilbur Smith Associates in order to improve projected traffic conditions for Mitchell Road under buildout of the specific plan. As shown in Table 28, even with these substantial improvements, traffic conditions at study area intersections will be unacceptable.

The mitigated geometry is described in Table 29. In developing the mitigation measures it was assumed that the maximum number of through lanes would be three and the maximum number of left turn lanes would be two. As shown in Table 29, the mitigated geometry proposed includes significant improvements beyond those currently planned. It should be noted that the City does not own the right-of-way necessary under the mitigated geometry scenario.

TABLE 29

MITIGATED GEOMETRY SCENARIO

| Intersection/ Direction | Number of Lanes Right | Through | Left |
|---|---|---|---|
| Herndon-Hatch | | | |
| Northbound | 0 | 1 | 1 |
| Eastbound | 1 | 2 | 1 |
| Southbound | 1 | 1 | 2 (+1) |
| Westbound | 2 (+1) | 2 | 1 |
| Mitchell-Hatch | | | |
| Northbound | 1 | 3 (+1) | 2 (+1) |
| Eastbound | 1 | 1 | 2 (+1) |
| Southbound | 1 | 3 (+1) | 1 |
| Westbound | 1 | 2 | 1 |
| Mitchell-Whitmore | | | |
| Northbound | 1 (+1) | 3 (+1) | 2 (+1) |
| Eastbound | 1 (+1) | 2 | 2 (+1) |
| Southbound | 1 (+1) | 3 (+1) | 1 |
| Westbound | 1 (+1) | 2 | 2 (+1) |

Notes: Number shown in parenthesis is number of additional lanes above proposed geometry.
Source: Wilbur Smith Associates; August, 1988.

**Roadway Volumes Analysis Results**

Table 30 presents future peak hour volumes on study area roadways assuming build-out of the specific plan and with proposed geometry. Table 30 also shows roadway capacity and level of service. As shown in Table 30, after buildout of the specific plan traffic conditions on Mitchell Road are projected to be at Level of Service F.

In determining level of service it was assumed that the capacity of Mitchell Road was 1,000 vehicles per hour per lane. Level of service was estimated based upon the proposed roadway geometry of two through lanes. As part of the mitigated intersection geometry analysis Mitchell Road was assumed to be six lanes wide. As indicated by the volumes shown in Table 30, even with six lanes (a capacity of 3,000 vehicles per hour per direction) Mitchell Road is projected to operate at Level of Service F.

TABLE 30

SPECIFIC PLAN BUILDOUT
ROADWAY VOLUMES

| Location | AM Peak | PM Peak | Capacity | LOS |
|---|---|---|---|---|
| Mitchell Road - South of River | | | | |
| Northbound | 3,250 | 3,550 | 2,000 | F |
| Southbound | 3,550 | 3,350 | 2,000 | F |
| Mitchell Road - North of Hatch | | | | |
| Northbound | 3,350 | 2,710 | 2,000 | F |
| Southbound | 3,550 | 3,070 | 2,000 | F |
| Mitchell Road - North of Whitmore | | | | |
| Northbound | 3,530 | 4,120 | 2,000 | F |
| Southbound | 3,600 | 3,910 | 2,000 | F |
| Mitchell Road - South of Roeding | | | | |
| Northbound | 2,640 | 2,870 | 2,000 | F |
| Southbound | 2,500 | 2,930 | 2,000 | F |

Source: Wilbur Smith Associates, November 1988.

## Summary of Traffic Analysis

Buildout of the proposed Mitchell Road Specific Plan will have significant impacts on study area intersections and roadways. The Specific Plan proposes a series of intensive (from a traffic generation standpoint) uses in an area which is now predominantly vacant. Additionally, traffic conditions at the study area intersections are already approaching unacceptable levels of service.

The current plan to widen Mitchell Road to two through lanes in both directions will improve traffic conditions, but will not mitigate the impacts of the proposed specific plan development.

## Traffic Safety Impacts

The purpose of this section is to discuss several traffic and safety issues raised concerning the Mitchell Road Specific Plan.

Highway 99 - Highway 99 runs diagonally to the street grid in Ceres. This causes interchanges in Ceres to have unusual and relatively complex designs.

The interchange of Highway 99 with Hatch Road occurs at the Hatch-Herndon intersection. Traffic operations at this intersection are strongly influenced by traffic entering and exiting Highway 99. Currently, this intersection operates acceptably but it is approaching capacity. Under buildout of the Specific Plan the intersection will operate at Level of Service F and the potential exists for traffic queuing at the intersection to interfere with Highway 99 traffic flow.

The interchange of Highway 99 with Mitchell Road is very complicated and has quite irregular design. Buildout of the Specific Plan will add a large amount of traffic to this interchange and it is likely that it will operate unacceptably. An additional problem in this area is the Highway 99 Frontage Road.

Highway 99 Frontage Road - There are frontage roads running parallel to Highway 99 throughout most of Ceres. In general, intersections of these roadways with other major roads are irregular. Irregular intersection are complex, often require circuitous movements, involve odd angles, have line of sight problems, as well as having other traffic and safety problems.

The Highway 99 Frontage Road which crosses Mitchell Road is a regular (90 degree) intersection. However, the existing configuration requires frontage road traffic to make an "S" movement. The Roadway is also located only a short distance north of the Highway 99 northbound Mitchell Road off-ramp. The Frontage Road to the west of Mitchell Road forms the Mitchell Road Highway 99 northbound on-ramp. An additional problem in this

area is the fact that the Frontage Road alignment reduces the amount of developable land in this part of the study area.

It is recommended that before significant development be allowed in the Mitchell Road area a detailed interchange design study be performed of the Mitchell Road - Frontage Road - Highway 99 Interchange. This study should evaluate several different physical designs for the interchange area and should use data developed as part of a Citywide traffic study.

While this recommendation may lead to a relatively costly interchange modification project, it will be necessary in order to develop the highway commercial uses in this part of Mitchell Road. Consequently, it would be reasonable to expect developers to pay for part of the interchange reconstruction cost.

Protection Of Residential Neighborhoods - Buildout of the proposed Mitchell Road Specific Plan will cause a significant increase in study area traffic. A portion of this traffic will negatively impact residential areas adjoining Mitchell Road. This is especially true of the residences which front on Mitchell Road but will also impact residents on streets perpendicular to Mitchell Road.

Traffic on perpendicular streets will increase as part of the overall development of Mitchell road. It will increase more than expected if new development causes traffic congestion on Mitchell Road, as people search for, and use, short cuts.

At some point in the development process access to residential streets perpendicular to Mitchell Road may need to be controlled. It is recommended that this issue be fully studied as part of the Citywide traffic study recommended above.

Internal Circulation - The traffic analysis in this section considers development of the Mitchell Road Specific Plan Area as a whole. It was assumed that development of specific parcels would be relatively coordinated. For example, projects would be constructed so that vehicles travelling from one project to an adjoining project would not be required to use Mitchell Road. An additional example is locating some complementary land uses close together. For example, restaurants would be located near business parks. This will reduce the need for trips. As discussed earlier, a high degree of coordination between land uses was not assumed in this report. However, some coordination will occur naturally.

As part of the normal review process for each project the City of Ceres should insist on coordination between projects. The City should also develop a list of guidelines for developers to improve internal circulation and coordination between projects. Finally, traffic impact studies of individual projects should be performed. It is possible that by making relatively minor site access and circulation changes, traffic conditions on surrounding roadways will significantly improve.

Traffic Signals - Mitchell Road is projected to carry a large amount of traffic and will continue to function as a major regional roadway. Therefore, it is likely that traffic signals will be needed at additional intersections.

Traffic signals improve safety and traffic operations at specific intersections; however, they reduce overall capacity of the major roadway. Therefore, placement of traffic signals should be balanced between intersection needs and arterial roadway flow. It is recommended that traffic from several adjoining development projects enter Mitchell Road at one access point, which could be signalized, rather than many individual access points.

Medians - A raised median is currently proposed for Mitchell Road. There are advantages and disadvantages to raised medians compared with flush medians. Appendix D presents a recent article in ITE Journal which discusses the issue of raised vs. flush medians.

Raised medians are not always better than flush medians. This is especially the case if by providing a raised median more curb cuts and project access points are allowed on Mitchell Road. It is clear that given projected traffic volumes, curb cuts and access points must be strictly limited regardless of median type chosen.

Several advantages to raised medians should be considered. First, raised medians allow the opportunity for landscaping and, therefore, improving the visual quality of the roadway. Second, as roadways get relatively wide they provide some refuge for pedestrians crossing at traffic signals. Finally, again as roads become wide (which is likely to be the case for Mitchell Road), raised medians provide better separation between traffic flows.

The fundamental question concerning raised medians is access to adjoining development. If many separate access points are to be provided, then a flat traversable median would reduce intersection traffic (chiefly U-turns) and improve operating conditions. Travel speeds on this type of facility would need to be relatively low to compensate for vehicles turning into and out of project access points. Some types of accidents would be higher than if a raised median were built.

If access to development projects adjoining Mitchell Road is limited, then the accident reduction benefits of a raised median increase. In this case, access to individual development projects should be carefully designed in order to reduce the need for U-turns and to provide direct access from major east-west arterials whenever possible.

It is recommended that access to development projects on Mitchell Road be controlled and carefully planned. Under these conditions, a raised median would also be recommended.

Land Use Change and Safety - The Mitchell Road Specific Plan proposes changing a relatively undeveloped area of Ceres to a moderately dense commercial corridor. With this change in land use and its associated increase in traffic, accident patterns and types will

also change. This section discusses the impact of changing land uses and traffic levels on safety.

An analysis of accident data over the last two and one-half years suggests general tendencies. First, vehicles turning on and off Mitchell Road at minor road intersections are involved in a high proportion of accidents. Many of these accidents are rear end collisions. It is likely that these are caused by cars turning off Mitchell Road being hit by vehicles following too closely or at too high a speed. Other accidents involve vehicles turning off the minor roadways onto Mitchell Road being broad-sided. Other tendencies include rear-end and turning collisions at major Mitchell Road intersections and improper passing on Mitchell Road.

Existing accident patterns are similar to those which could be expected on a roadway like Mitchell Road. The road serves regional traffic and speeds tend to be relatively high, especially given the undeveloped adjacent land. This means that vehicles are not expecting traffic to turn on or off Mitchell Road at minor intersections and, therefore, they follow too closely or at too high a speed. Additionally, accidents involving passing maneuvers are relatively common on two lane roadways. Finally, because of the sheer volume of traffic movements at the Whitmore and Hatch intersections, a certain number of accidents will take place at these locations.

The proposed changes in land use patterns along Mitchell Road will affect accident patterns. Traffic volumes will increase significantly. This will have two impacts. First, speeds will decrease which will reduce the likelihood of rear-end collisions turning on and off Mitchell Road. However, the greater volume of traffic will offset this reduction and its is likely that there will be an overall increase in accidents. The number and type of accidents will be highly dependent upon the access control imposed on abutting land uses. Concentrating access to commercial uses will reduce the number of accidents and improve the flow of traffic on Mitchell Road. This will be especially true if traffic signals are installed at these locations.

Accidents caused by passing will be significantly reduced when Mitchell Road is widened. A raised median will also reduce the number of certain types of accidents. Additionally, a raised median will provide definite access control to commercial development. However, raised medians tend to increase the number of erratic driving maneuvers on a roadway as drivers attempt to access individual developments. This is likely to increase accident potential.

In summary, the sheer magnitude of additional traffic will increase the number of accidents on Mitchell Road. In order to reduce the number and severity of accidents (as well as to maintain adequate traffic flow), access to development projects on Mitchell Road must be carefully controlled.

Truck Traffic - Truck traffic is an important traffic consideration in the City of Ceres. This is especially true during the peak agricultural season when truck volumes of approxi-

mately 15 percent have been recorded on Hatch Road (A value of four to six percent is typical.)

Trucks, because of their size and operating characteristics, are treated differently from passenger cars. Generally it is assumed that one truck is equivalent to four passenger cars for purposes of intersection level of service analysis. Specific attention was given to truck traffic in the existing conditions analysis, and it was found that under normal conditions truck traffic was not a significant problem. However, this may not be true of peak truck periods of the year.

In the analysis of future conditions, trucks were not considered explicitly for two reasons. First, the sheer volume of passenger cars projected under buildout of the Specific Plan would overwhelm the effects of the small number of trucks. Second, as land uses change in the Mitchell Road area, trucks will be less likely to use the Hatch-Mitchell route, as it will become too congested.

Pedestrian Safety - One improvement to Mitchell Road safety which should be implemented is construction of regular sidewalks on both sides of the street. Pedestrian crosswalks and signals should be installed at all traffic signals which do not currently have them.

Pedestrian travel should be encouraged in the study area. This may reduce the number of auto trips generated by buildout of the Specific Plan. Building standard sidewalks and improving pedestrian safety will encourage walk trips and, therefore, is highly recommended.

### *3.8.3 Mitigation Measures*

As discussed above, traffic generated by the proposed project is expected to lead to unacceptable levels of service at study area intersections. In order to mitigate these traffic impacts, several options were investigated. They range from accommodating the projected worst case level of traffic generation to reducing the land use intensity so that traffic generated by the development could be adequately served by the proposed changes to Mitchell Road. Several options for mitigation programs are described below.

#### Accommodate Proposed Project Traffic

This option consists of providing the roadway cross section on Mitchell Road which will accommodate all projected traffic from the proposed project. For purposes of this study it was assumed that the maximum intersection cross section would be:

- One right-turn lane;
- Four through lanes; and
- Two left-turn lanes.

This is the maximum intersection cross section which can be operated efficiently. It should also be noted that this cross section is almost double that proposed for Mitchell Road under the proposed widening plan.

Results of the traffic analysis indicate that even if Mitchell Road were widened to the maximum cross section, volume-to-capacity ratios are over 1.0 under the proposed project. (Table 31 presents a summary of traffic conditions under all mitigation options analyzed.) If development traffic is reduced by 65 percent, then the intersections will operate at Level of Service E or better if they are constructed to their maximum cross section.

Reduction of development traffic can be achieved in the following strategies:

- Reduce the amount of development;
- Reduce traffic generated by introducing a Transportation Systems Management (TSM) plan;
- Provide alternative routes for traffic; and
- Increase the number of internal trips.

In order to improve Mitchell Road traffic conditions to acceptable levels, a combination of all four strategies will be necessary. Individual strategies are described in more detail below.

### Reduce Development Intensity

This mitigation option consists of reducing the amount of development in order to reduce the traffic generated. It could also include changing the types of land uses to those which generate fewer trips.

In order to estimate the impacts of this option, traffic generated by Mitchell Road Specific Plan Area development was reduced and the impacts on traffic conditions were projected. These results are summarized on Table 31. Traffic conditions were analyzed under the assumption that the planned Mitchell Road improvement program as currently proposed is implemented. This improvement program includes widening Mitchell Road to two through lanes in each direction. Mitchell Road intersections were assumed to have one left-turn lane, two through lanes, and one right-turn lane (except at the Mitchell/Whitmore intersection where there are no right-turn lanes).

As shown on Table 31, even with a 70 percent reduction in traffic generated by planned development, intersections are projected to operate unacceptably during the evening peak hour. It was felt that even a 50 percent reduction in traffic would be unacceptable to the City and, therefore, further reductions were not analyzed.

## TABLE 31

## MITIGATION OPTIONS AND TRAFFIC CONDITIONS

| Mitigation Option | Mitchell/Hatch V/C | Mitchell/Hatch LOS | Mitchell/Whitmore V/C | Mitchell/Whitmore LOS |
|---|---|---|---|---|
| 1. Maximum Mitchell Road Cross Section (1-4-2) | | | | |
| No Reduction | 1.42 | F | 1.11 | F |
| 25% Reduction | 1.12 | F | 0.91 | E |
| 35% Reduction | 1.00 | E/F | 0.83 | D |
| 2. Planned Mitchell Road Cross Section (1-2-1) | | | | |
| No Reduction | 2.28 | F | 2.46 | F |
| 25% Reduction | 1.85 | F | 2.04 | F |
| 50% Reduction | 1.41 | F | 1.62 | F |
| 70% Reduction | 1.07 | F | 1.28 | F |
| 3. Widen Intersections - Reduce Traffic (A)[1] | | | | |
| 50% Reduction | 0.91 | E | 0.89 | D |
| 4. Widen Intersections (to 1-3-2) and Reduce Traffic (B) | | | | |
| 45% Reduction | 0.97 | E | 0.87 | D |

Notes:

All traffic analysis performed for PM peak hour which is worst case time period.

[1] See Table X for intersection cross sections.

Source: Wilbur Smith Associates; November, 1988.

### Reduce Traffic and Widen Intersections (A)

This option consists of reducing traffic generated by Mitchell Road Specific Plan Area development by 50 percent and making intersection improvements at both Mitchell Road intersections analyzed in this report. The method followed was to add lanes to intersections until intersections operated at acceptable levels of service.

The intersection configurations which led to acceptable traffic conditions under these criteria are presented in Table 32. Projected traffic conditions are summarized in Table 31.

### Widen Intersections and Reduce Traffic (B)

This option consists of widening Mitchell Road intersections to one right-turn lane, three thru lanes, and two left-turn lanes cross section (1-3-2 configuration) on all approaches. This cross section was chosen for analysis because it is fairly typical for arterials in commercial areas. It will also support increased development over the planned geometry.

Traffic analysis results of this option are presented in Table 31. The analysis shows that with the intersections widened to the 1-3-2 configuration, traffic from the development would have to be reduced by 45 percent to operate acceptably.

TABLE 32

OPTION 3 INTERSECTION CONFIGURATION

| Intersection/ Direction | Number of Lanes Right | Through | Left |
|---|---|---|---|
| Mitchell-Hatch | | | |
| Northbound | 1 | 3 (+1) | 2 (+1) |
| Eastbound | 1 | 1 | 2 (+1) |
| Southbound | 1 | 3 (+1) | 1 |
| Westbound | 1 | 2 | 1 |
| Mitchell-Whitmore | | | |
| Northbound | 1 (+1) | 3 (+1) | 2 (+1) |
| Eastbound | 1 (+1) | 2 | 2 (+1) |
| Southbound | 1 (+1) | 3 (+1) | 1 |
| Westbound | 1 (+1) | 2 | 2 (+1) |

Notes: Number shown in parenthesis is number of additional lanes above proposed geometry.
Source: Wilbur Smith Associates; August, 1988.

## Mitigation Option Summary

Table 31 presents a summary of all mitigation options investigated. As shown in Table 31, in order for Mitchell Road to operate acceptably (defined as Level of Service E or better), both development traffic will need to be reduced and the roadway cross section will need to be increased.

The most critical element of this analysis is how traffic from the proposed development can be reduced. As noted above, traffic reduction can be brought about in four ways:

- Reducing the amount of development;
- Providing alternative access routes;
- Instituting a TSM program; and
- Increasing the internal trips.

In order to bring about traffic reductions of the magnitude required for Mitchell Road, a combination of all four strategies will be required. Each strategy is discussed below.

Reduce Amount of Development - This strategy is simple to understand. Less development means less traffic. It will also have the most impact in reducing traffic. This is especially true given the City's desire not to change the type of land uses proposed for the corridor. A change in the type of land uses could increase internal trips.

Alternative Access Routes Under the Specific Plan, development-generated traffic is distributed by Mitchell Road to local streets and regional facilities. If an additional roadway is built to serve these functions, traffic on Mitchell Road will be reduced. Additionally, if an alternative route can be provided for through traffic using Mitchell Road to reach Modesto from Highway 99, then existing traffic can be reduced and Mitchell Road will be able to accommodate more development-generated traffic.

It is important to realize that if the alternative access routes are built, the total amount of traffic will not be reduced. Instead, traffic will be redistributed to other facilities. This is an important consideration especially given the fact that traffic levels on surrounding arterials (Hatch and Whitmore Roads, for example) are also fairly high. It should also be remembered that the alternative roadway will probably need to be improved to accommodate the additional traffic.

In developing areas, construction or improvement of transportation facilities plays a major role in attracting development. If an alternative route to Mitchell Road were built, strict control of adjoining development would be required in order to prevent the alternative route from being congested. If the alternative route becomes congested, it will no longer serve to reduce traffic on Mitchell Road and instead of one congested roadway there will be two.

The City of Ceres, and Stanislaus Area Association of Governments are currently studying the possibility of improving Faith Home Road (located about one mile east of Mitchell Road) to act as an alternative route for Mitchell Road traffic. Faith Home Road could serve as an alternative to Mitchell Road for regional traffic if it is sufficiently upgraded and includes a bridge over the Tuolumne River. An improved Faith Home would act as a bypass to Mitchell Road allowing Mitchell Road to serve as a commercial access road.

Transportation Systems Management (TSM) Plan - TSM is a term which includes many strategies for reducing traffic. The general rule is that these strategies are inexpensive and mainly rely on management of existing facilities more efficiently. Common TSM strategies include:

- Ridesharing-carpool programs;
- Transit subsidy programs;
- High occupancy vehicle facilities;
- Implementation of flextime; and
- Working at home.

These strategies work best in concentrated work areas such as suburban office parks and central business districts.

Results of most TSM programs have not been substantial over the long run. Many programs have reported high initial success, but follow-up studies indicate a gradual fall-off in program participation. The key is for the program to be strongly supported over the life of the development project and enforcement of TSM performance standards. Generally, this can be done through development agreements and City ordinances. It requires development of an implementation monitoring plan and enforcement strategy.

In addition to enforcement and long-term commitment to TSM, the development must be of a type which lends itself to TSM programs. For example, in order for carpools to work, there must be many people working in the same general area who also live in the same general area. In many urban areas this situation is relatively common. It is highly questionable whether the Mitchell Road Development proposed in the Specific Plan would meet this criteria.

In terms of TSM strategies which could reduce development generated traffic on Mitchell Road, the most beneficial would probably be flex-time. Flex-time allows individuals to travel to and from work during off-peak times. The disadvantage of this strategy is that traffic conditions are relatively poor over a longer period of time. This is referred to as spreading the peak (traffic demand).

As discussed above, even a strong effort at encouraging ride sharing will probably have limited impacts because of the low density housing pattern in the area. Similarly, transit subsidy programs, while they should be encouraged, will probably have a low impact because of the limited transit service available in the area. Providing facilities for high occupancy vehicles is another strategy with relatively limited appropriateness for the area;

there are too few high occupancy vehicles (carpools and buses) which would make use of them. Finally, working at home undermines the rationale for Mitchell Road development in the first place.

A strategy which is not included in most formal TSM programs, but one which dovetails with them is mixed-use development (described in more detail below). If land uses can be integrated carefully, the number of trips generated can be reduced substantially. However, this works best when land uses include moderate to high density housing with amenities (such as bicycle paths, neighborhood commercial facilities, and pleasant walking conditions) to support alternative means of travel and reduced overall travel. While few development projects which incorporate these features are currently in existence (or in the planning stage) they will become more popular in the future as changing demographics, lifestyles, energy shortages, increased traffic congestion, and air pollution begin to influence the housing market. Ceres may wish to consider encouraging this type of development now or in the near future.

To summarize, while TSM is a strategy which should be pursued by the City of Ceres, especially as development in the area continues, it is unrealistic to assume that it will cause a significant reduction in development-generated traffic.

Increase Internal Trips - Internal trips are those which are within the development project. For example, if a development project includes housing and office space, a share of work trips generated from the housing will be travelling to the office space. Therefore, instead of adding all the trips generated from the housing to all the trips generated to the office development, a reduction can be made for internal trips. Development projects which consist of these types of complimentary land uses are called mixed use developments. Many projects proposed for cities today are mixed use developments in order to reduce transportation impacts and to provide more amenities to developments.

Under the proposed land uses for the Mitchell Road Specific Plan there is little opportunity for internal trips. There is no housing planned for the project and land uses are relatively separate; i.e., regional commercial and office development. It should be noted, however, that in the traffic analysis the trip generation rate for neighborhood commercial (such things as convenience stores and dry cleaners) was reduced since these uses will attract some internal and existing trips. Additionally, traffic generated by all other uses was reduced by 10 percent to account for internal trips.

Summary - The determination of the proper combination of traffic reduction strategies and capital improvements necessary to allow acceptable traffic conditions on Mitchell Road belongs to the City of Ceres. It is clear, however, that the City will be unable to develop the proposed specific plan given the planned improvements.

Additional Recommendation - An additional recommendation is that the City perform a comprehensive city-wide transportation study. The study should consider proposed land

uses in neighboring areas, Highway 99 access, regional trip distribution analysis, and other issues. The goal of this study should be to develop a detailed city-wide traffic model which can be used to estimate the impacts of particular development projects on the City's transportation system.

The importance of performing a detailed City-wide transportation study and developing a methodology to be used in assessing transportation impacts of development projects cannot be overemphasized. In order to prevent the marginal increases in traffic caused by cumulative development from overwhelming the City's traffic network, some method for assessing the impact of all projects and for funding necessary improvements must be developed. Once this system is in place, the city could require developers to fund improvements which the model indicates are caused by individual development projects.

## *3.9 Public Services and Utilities*

### *3.9.1 Police Services*[1]

#### Environmental Setting

The City of Ceres Police Department currently provides police protection to the proposed project site. The nearest police station to the project site is located at 2727 Third Street, about one mile west of the Mitchell Road Corridor. Response times range from three minutes for emergency calls to five minutes for non-emergencies.

The City of Ceres has experienced an overall decrease in reported crimes during the past two years. The Chief of Police expects this trend to continue, but it is of course not known at what percentage reported crime will decrease. The city experienced a ten percent decrease in overall crime from 1985-86, and a 12 percent decrease from 1986-87. Of the 754 crimes reported in 1987, 459 were theft-related, a decrease of 27 percent from 1986 levels of theft-related crime.

The Department is currently staffed by 32 sworn officers, 15 unsworn officers, and 50 support personnel who also serve the Fire Department. The Department currently maintains a ratio of 1.6 sworn officers per 1,000 city residents.

#### Environmental Impacts

The project involves the intensification of land uses on-site as well as the potential introduction of specific crime or disturbance prone uses such as bars, drug stores, convenience stores, florists, parking garages, etc. Furthermore, the intensification of commercial uses adjacent to residential uses may pose a nuisance to nearby residents, and result in complaints to the police department. These will result in an increased demand for police services and thus result in the occasional deployment of police manpower to the site, making it less available to respond to other calls. In addition, project-related traffic would place additional demands upon traffic law enforcement personnel.

The Police Department has indicated that current levels of staffing should be adequate to provide service to the proposed project without significantly affecting levels of service city-wide. The Department does not utilize a separate ratio of personnel to square footage of commercial uses, but has indicated that officers would be deployed to the project site based on demand. Should the increased density commercial development entail unforseen compromises in levels of police protection, the Chief of Police would request additional manpower and/or facilities necessary to maintain existing levels of service.

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[1] *Information obtained from Gail Peterson, Chief of Police, City of Ceres, telephone conversation July 14, 1988.*

## Mitigation Measures

While the proposed project is not expected to significantly affect levels of police protection, a number of mitigation measures area available to reduce criminal opportunity through environmental design. Some examples of these are as follows:

- situate parking areas so they are visible to adjacent uses;
- utilize fencing materials that allow visibility (i.e., wrought-iron or rail fencing while discouraging trespassing in those areas which do not require be privacy;
- provide uniform lighting to avoid a pattern of light and shadow;
- evaluate landscape plants to ensure they cannot conceal a criminal or block views of the interior of the site;
- provide clear walkways, open stairways, and avoid the use of tunnels and recessed doorways.

The Police Department should review all plans for the project site to ensure that appropriate security recommendations are incorporated where feasible.

### *3.9.2 Fire Protection*[1]

#### Environmental Setting

The Ceres Fire Department provides fire prevention and suppression services to the project site. The City Fire Station is located at 2225 North Street, approximately one mile from the site. The Department's current response time to emergency calls ranges from four to six minutes, depending on the location of the emergency.

The Fire Department is currently staffed by one Commander, one paid fire-fighter, and 33 volunteers. The Department plans to expand its staff to one Commander, one Battalion Chief, one fire marshall, six paid firefighters, and additional volunteers.

#### Environmental Impacts

Implementation of the proposed project will increase the demands for fire protection services at the project site, and in the absence of mitigation would reduce the department's ability to respond to calls throughout the city. The Department has indicated that additional manpower and equipment would include a truck company, necessary to respond to fires occurring in structures greater than two stories in height.

#### Mitigation Measures

The City should establish an assessment district to acquire fees for any necessary fire protection personnel and equipment.

Approved numbers or addresses shall be placed on all new and existing buildings in such a position as to be plainly visible and legible from the street or road fronting the property.

Any modifications to the on-site water distribution system shall conform to City of Ceres standards concerning installation and location and shall be subject to the approval of the water department.

When fire protection facilities are to be installed by the developer, such facilities shall be installed and made serviceable prior to the time of construction.

The Fire Department will review all plans for projects in the Specific Plan area to ensure that proper types of construction and access are provided.

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[1] *Information obtained from Commander Bruce Weber, Ceres Fire Department, telephone conversation on October 20, 1988.*

### *3.9.3 Telephone Facilities*[1]

#### Environmental Setting

Telephone service to the project area is provided by Pacific Bell.

#### Environmental Impacts

Pacific Bell has indicated that it would have no problem providing service in the Mitchell Road area should the proposed project be approved. Pacific Bell's only concern relates to the timing of projects in the area. Pacific Bell requires an average of 12-18 months to design and build new facilities.

If any existing facilities need to be relocated, the developer will be responsible to pay the cost of moving Pacific Bell's facilities. Pacific Bell has no plans to underground any of its existing overhead facilities, but will underground the facilities if the developer so requests. The work would be at the developer's expense and would conform to current Laws and California Public Utilities Tariffs.

#### Mitigation Measures

No mitigation measures are required.

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[1] *Information obtained from J. A. Caldwell, Pacific Bell, correspondence dated July 20, 1988.*

### *3.9.4 Electricity*[1]

#### Environmental Setting

The Turlock Irrigation District provides electricity to the project site. The District maintains two major 12 KV electrical power lines which parallel the Mitchell Corridor. One of these lines is located on the east side of Mitchell Road and runs from River Road in the north to Service Road in the south. The other major 12 KV electrical power line runs along the Ceres Main Canal just east of Mitchell Road. This line runs from Hatch Road in the north to Highway 99 in the south. In addition to these two lines, there are some tap lines which intersect these lines at street intersections including Hatch Road, Fowler Road, Whitmore Avenue, and Service Road.

Electric load densities for commercial development in the Turlock Irrigation District service area average 24,000 KW/mile. However, depending on the type of development and city requirements (e.g. parking), commercial electric load densities can vary from one half to two times the above figure.

Based on electricity consumption factors utilized by the South Coast Air Quality Management District (see Table 33 below), the current uses along the Mitchell Road Corridor consume approximately 7.1 million KWH of electricity per year.

#### Environmental Impacts

The District does not anticipate any problems in maintaining the current level of service along Mitchell Road should the proposed project be implemented. In addition, the District does not anticipate any difficulties in providing long-term service to the project area.

As Table 33 indicates, the proposed project is estimated to consume 57.3 million KWH of electricity per year. The proposed project's consumption of electricity would represent an 800 percent increase over existing levels of electricity consumption.

Existing lines should be adequate to serve any normal commercial load development on Mitchell Road between the Tuolumne River and Service Road. However, development between Service Road and Highway 99 may require construction of an additional major 12 KV electrical power line on Mitchell Road in this same area.

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[1] *Information obtained from N.C. Boberg, Turlock Irrigation District, letter dated August 5, 1988.*

## TABLE 33

## ESTIMATED ELECTRICITY CONSUMPTION FOR THE PROPOSED PROJECT

| Land Use | Size | Factor[a] (Kwh/yr) | Consumption (Kwh/yr) |
|---|---|---|---|
| Commercial | | | |
| Neighborhood | 691,200 sf | 11.8/sf | 8,156,160 |
| Planned | 1,809,300 sf | 11.8/sf | 21,349,740 |
| Highway | 377,100 sf | 11.8/sf | 4,449,780 |
| Retail | 805,300 sf | 11.8/sf | 9,502,540 |
| Business Park | 1,377,400 sf | 8.8/sf | 12,121,120 |
| Residential | 282 du | 6,081/du | 1,714,842 |
| | | ANNUAL TOTAL | 57,294,182 |

a Source: Air Quality Handbook for Preparing Environmental Impact Reports, South Coast Air Quality Management District, revised April 1987.

Since industrial and commercial consumption varies greatly, depending upon specific uses, it is difficult to predict what new facilities would be necessary to serve the proposed project. The District currently has plans to construct a substation in the vicinity of the Hatch Road/Mitchell Road intersection in the year 2001. The mitigation measures provided below will be adequate to reduce impacts on electrical facilities to a level of insignificance.

### Mitigation Measures

1. As noted above, the District may need to construct a major 12 KV electrical power line on Mitchell Road between Service Road and Highway 99. This and other electrical facilities which are not line extensions or services are paid for by the District.

2. All necessary extensions of District facilities shall be in accordance with the District's Line Extension Policy, Rule 15.

### *3.9.5 Natural Gas*[1]

#### Environmental Setting

Pacific Gas and Electric (PG&E) provides gas service to the entire Ceres area. PG&E maintains several natural gas lines in the project area, including a mainline along Whitmore Avenue. Based upon gas consumption rates supplied by PG&E, the current land uses on the project site consume approximately 3.6 million therms per year.

#### Environmental Impacts

The proposed project is estimated to consume about 27 million therms per year as indicated in Table 34.

**TABLE 34**

**ESTIMATED NATURAL GAS CONSUMPTION FOR THE PROPOSED PROJECT**

| Land Use | Size | Factor[a] (cf/hr) | Consumption (Therms/yr)[b] |
|---|---|---|---|
| Commercial | | | |
| Neighborhood | 691,200 sf | 60/tsf | 3,632,947 |
| Planned | 1,809,300 sf | 60/tsf | 9,509,680 |
| Highway | 377,100 sf | 60/tsf | 1,982,037 |
| Retail | 805,300 sf | 60/tsf | 4,232,656 |
| Business Park | 1,377,400 sf | 60/tsf | 7,239,614 |
| Residential | 282 du | 50 | 123,516 |
| **ANNUAL TOTAL** | | | **26,720,453** |

a Source: Jim Dymke, PG&E
b 1 therm = 100 cubic feet of natural gas

[1] *Information obtained from Jim Dymke, Pacific Gas and Electric, telephone conversation of July 13, 1988.*

PG&E does not anticipate any problems with providing gas to serve the proposed development. Gas service will be provided in accordance with PG&E's policies and extension rules on file with the California Public Utilities Commission at the time contractual arrangements are made.

The size of gas metering and regulating facilities varies with different gas loads of commercial, office, industrial, and residential uses. To implement satisfactory meter location spacing, PG&E should be consulted during the preliminary plan stages. The appropriate gas main extension fees, based on lineal foot, will be paid as required.

## Mitigation Measures

Developers should coordinate with PG&E to ensure that adequate gas distribution facilities are installed in a timely manner.

The proposed project will comply with all California Administrative Code Title 24 requirements which promote energy conservation.

### *3.9.6 Water Supply*[1]

#### Environmental Setting

The City of Ceres supplies water for domestic consumption in the project area. The City's wells tap local groundwater which is the primary source of supply for the city's residents. Approximately 10 active wells produce the majority of the city's water.

Several irrigation pipelines maintained by Turlock Irrigation District pass under Mitchell Road within the project site. The Turlock Irrigation District supplies irrigation water to agricultural uses in the project area. This water is collected from the Tuolumne River. The District maintains Turlock Irrigation Laterals #1 and #2 as well as Ceres Main Canal in the project vicinity.

As the character of the city changes from agricultural to urban, different demands are placed on the City's water resources. Overall, urban users consume less water than agricultural uses. Demands on local aquifers for domestic consumption are expected to increase, while the demand for local surface water for irrigation is expected to decrease.

Based upon water consumption factors described and referenced in Table 35 below, the current non-agriculture uses of the project site consume approximately 358 acre-feet annually.

#### Environmental Impacts

At build-out, the proposed project would consume about 1.4 million gallons of water per day (see Table 35), or approximately 1,558 acre-feet per year. This usage represents a 435 percent increase over the amount of water now consumed by urban uses of the project site. It should be noted that the current agricultural uses on the site would be eliminated, and consumption of water supplied by Turlock Irrigation District would decrease. The City has indicated that additional water resources are likely to be required to service the proposed development. In addition, cumulative development in the City will most certainly require the drilling of new wells to satisfy water consumption requirements.

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[1] *Information for this section obtained from Robert Nees, Turlock Irrigation District, correspondence dated July 15, 1988; from a telephone conversation with Richard Veela, Turlock Irrigation District, October 20, 1988; and from the City of Ceres.*

## TABLE 35

## ESTIMATED WATER CONSUMPTION FOR THE PROPOSED PROJECT

| Land Use | (Size) | Factor[1] (Gallons/Day) | Consumption (Gallons/Day) |
|---|---|---|---|
| Commercial | | | |
| Neighborhood | 691,200 sf | 3000/ac | 158,670 |
| Planned | 1,809,300 sf | 3000/ac | 415,350 |
| Highway | 377,200 sf | 3000/ac | 86,580 |
| Retail | 805,300 sf | 3000/ac | 184,860 |
| Business Park | 1,377,400 sf | 3000/ac | 316,200 |
| Residential | 282 du | 810/du | 228,420 |
| DAILY TOTAL | | | **1,390,060** |
| ANNUAL TOTAL | | | **1,558 acre-feet** |

1 Source: Based on water consumption rates utilized by the Irvine Ranch Water District.

### Mitigation Measures

If any irrigation pipelines require relocation to accommodate the proposed project, the developer will be financially responsible for the relocation. Relocation would be accomplished in accord with the requirements and standards of the Turlock Irrigation District.

All private on-site improvements will be required to be in compliance with the appropriate sections of the City's Building Code and approved by the City Engineer.

The following water conservation mitigation measures should be incorporated as is feasible to reduce water use:

- Utilize automatically-operated landscaping irrigation systems to restrict watering to early morning or evening hours to reduce evaporation losses.
- Plumbing fixtures to reduce water usage and loss should be utilized (i.e.,

low-volume toilet tanks, flow control devices for faucets, etc.) in accordance with Title 24 of the California Administrative Code.

- The use of drought-tolerant plant species and drip irrigation systems should be considered in order to reduce landscape water usage.

### *3.9.7 Sewer System*

**Environmental Setting**

The City of Ceres oversees wastewater services and policies for the project area. The Ceres Waste Water Treatment Plant is located southwest of the project site, between Blaker and Morgan Roads. Liquid wastes are treated by a process of extended aeration at the plant, which has a daily capacity of 2.5 million gallons per day. The City is currently preparing and EIR for the proposed expansion of this facility.

Based upon generation factors listed in Table 36 below, the current land uses on the project site generate approximately 99,330 gallons of sewage per day.

**Environmental Impacts**

As Table 36 below indicates, the proposed project is estimated to generate approximately 0.7 million gallons of sewage per day.

TABLE 36

ESTIMATED SEWAGE GENERATION
FOR THE PROPOSED PROJECT

| Land Use | (Size) | Factor[a] (Gallons/Day) | Consumption (Gallons/Day) |
|---|---|---|---|
| Commercial | | | |
| Neighborhood | 691,200 sf | 100/tsf | 69,120 |
| Planned | 1,809,300 sf | 100/tsf | 180,930 |
| Highway | 377,200 sf | 100/tsf | 37,720 |
| Retail | 805,300 sf | 100/tsf | 80,530 |
| Business Park | 1,377,400 sf | 200/tsf | 275,480 |
| Residential | 282 du | 200/du | 56,400 |
| DAILY TOTAL | | | **700,180** |

a Source: Based on the City of Los Angeles Special Order No. S019-0468.

The City has indicated that existing sewage treatment facilities will be able to accommodate the proposed project.

### Mitigation Measures

The developer shall be responsible for extension of sewer lines to serve the proposed project.

### *3.9.8 Solid Waste Disposal*[1]

#### Environmental Setting

Bonzi Disposal, a private disposal company with a franchise with the City, currently provides solid waste disposal services for the project site. Trash collected at the site is currently taken to Gear Road Landfill, located about ten miles from the city. This landfill is expected to close sometime between November 1988 and January 1989. After November 1988, Bonzi will utilize the Fink Road Landfill, located about 25 miles from the city. This landfill utilizes an 800-ton/day incinerator, with the ash disposed on-site.

Bonzi charges approximately $11 per month and $43 per month for residential and commercial customers respectively. Prices are expected to increase, however, with the switch to the Fink Road facility. Bonzi is also building a new transfer station at 231 Flamingo Drive, several miles west of the project site.

Based upon solid waste generation rates described in Table 37 below, the various uses on the project site currently generate approximately 4,705 pounds of solid waste per day.

#### Environmental Impacts

As Table 37 below indicates, at ultimate buildout the proposed project would generate approximately 29,893 pounds of solid waste per day, or 5,459 tons per year. Bonzi does not anticipate any adverse impacts associated with the proposed project.

#### Mitigation Measures

Trash screening must be in accordance with the applicable City ordinance. The City should encourage recycling of materials where feasible.

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[1] *Source: Information obtained from Bert Bertolotti, Bonzi Disposal, telephone conversation July 12, 1988.*

## TABLE 37

## ESTIMATED SOLID WASTE GENERATION FOR THE PROPOSED PROJECT

| Land Use | (Size) | Factor[a] (Pounds/Day) | Generation (Pounds/Day) |
|---|---|---|---|
| Commercial | | | |
| Neighborhood | 691,200 sf | 5/tsf | 3,456 |
| Planned | 1,809,300 sf | 5/tsf | 9,046 |
| Highway | 377,200 sf | 5/tsf | 1,886 |
| Retail | 805,300 sf | 5/tsf | 4,026 |
| Business Park | 1,377,400 tsf | 6/tsf | 8,264 |
| Residential | 282 du | 11.4/du | 3,215 |
| **DAILY TOTAL** | | | **29,893** |

a Source: Bonzi Disposal, 1988 and City of Los Angeles, 1981.

### *3.9.9 Hospitals*[1]

#### Environmental Setting

Ceres Memorial Hospital, located about 1.5 miles from the project site, is the primary hospital serving the project area. Ceres Memorial Hospital provides 122 licensed beds and is a general acute care facility. Patient services include general medical and surgical care, emergency room, ICU, chemical dependency, and psychiatric care. The hospital does not offer separate pediatric facilities or an obstetrics/nursery department.

Ceres Memorial Hospital's emergency room currently handles approximately 1,250 cases per month. Ambulance and mobile life support facilities are offered by the hospital. The hospital has indicated that it wishes to expand its emergency facilities, as well as provide pediatric and obstetric services and more chemical dependency facilities.

Four larger hospitals are in Modesto, approximately eight miles from the present project site. These additional hospitals include Memorial Medical Center, Ceres Memorial Hospital's sister facility.

#### Environmental Impacts

Implementation of the proposed project will incrementally increase the demands placed on the area's medical facilities, especially Ceres Memorial Hospital. The hospital has indicated that the increased demand does not constitute a significant adverse impact.

#### Mitigation Measures

None are required.

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[1] *Information provided by Rich Thomas, Memorial Hospital, telephone conversation July 13, 1988.*

## *3.10 Energy Conservation*

### *3.10.1 Environmental Setting*

#### Existing Non-Residential Building Standards

Newly constructed commercial and industrial/office buildings constructed should be designed for optimum energy efficiency in accordance with Energy Conservation Standards for non-residential buildings adopted by the State of California Energy Commission, effective as of March, 1985. The new regulations prescribe energy conservation standards for all new non-residential buildings in California and represent the state-of-the-art for energy conservation measures related to building design and equipment selection. Specifically, the regulations specify energy-saving designs for roof, wall and floor installations, and also contain lighting, heating and air conditioning and hot water supply specification standards. The regulations encourage the use of solar power and other non-depleting energy sources. Builders are offered the option of utilizing building designs that consume less energy than specified in the regulations. The regulations are enforced by local building departments through the building permit process.

#### Existing Residential Building Standards

Similar standards exist for residential buildings. The California Energy Commissions provides separate guidelines specific to homes which establish methods for implementing mandatory conservation measures for appliances and building design.

#### Applicable General Plan Policies

The Ceres General Plan does not have any goals specific to energy use and energy conservation. However, the Plan does state that the City should grow through a "phased" process by which intermediate boundary expansion should only occur when it is determined that adequate urban services can be provided. This implies that adequate services such as energy distribution should be available prior to expansion of the area.

### *3.10.2 Environmental Impacts*

Development of the Mitchell Road Corridor as proposed will considerably change the amount of energy consumed within the corridor. Buildout of the Specific Plan will convert existing vacant and underdeveloped lots to more intense urban uses.

An estimated net increase in the electrical demand of 57.3 million kilowatt hours per year and natural gas consumption of 26.7 million therms per year will occur as a result of Specific Plan implementation to maximum buildout.

### *3.10.3 Mitigation Measures*

Solar energy systems should be considered for installation where technically and economically feasible as part of the overall and individual project design for heating. This would conserve a major portion of the natural gas consumption normally associated with conventional water heating equipment. Auxiliary gas-fired water heating equipment would still be necessary to serve as a supplemental source of water heating during the winter months and on days of foul weather. Thermal pane or low shading coefficients should be utilized to minimize heat gain.

Although Title 24 provides for the reduction of the energy requirements to heat or cool a building, additional options could be utilized in the design of the project to improve U-factors and to reduce the total energy consumed by each building. A list of measures which should be considered in the planning of the project is provided below:

**Passive Solar Design**

- All windows on the buildings should incorporate a low shading coefficient to reduce heat gain.
- Roofing material should be of a light color to reflect sunlight.

**Thermal Insulating**

- Insulate hot water pipes and water heaters.
- Insulate air conditioning and heating ducts.

**Mechanical Systems**

Consideration should be given to the following systems for their efficiency in energy conservation:

- Central build-up rooftop air handling unit with direct expansion cooling.
- Air handling unit per floor with chilled water provided by centrifugal chillers.
- Air handling unit per floor with chilled water provided from an ice storage system.
- Self-contained air handling unit per floor with condenser water provided from a cooling tower.

**Miscellaneous Energy-Saving Measures**

- Use waterflow restrictors on all water taps.
- Use fluorescent lights throughout the buildings wherever applicable.
- Use low-wattage fluorescent tubes.
- Install automatic clock thermostats on furnace and central air conditioners.
- Install dimmer switches wherever possible.

## *4.0 GROWTH-INDUCING IMPACTS*

The proposed Specific Plan involves the intensification of commercial and retail uses along the Mitchell Road Corridor. As the project does not directly involve the addition of a significant number of residential units to the area, in will not contribute directly to growth within the City. However, as the project involves considerable commercial development which will create job opportunities, the project will induce growth indirectly.

The California Environmental Quality Act requires that elements of a project which could foster economic or population growth, either directly or indirectly, in the surrounding environment be considered. In this respect, the project does not include direct impacts which could be related to the extension or construction of public facilities which presently restrict growth. However, if any infrastructure improvements, such as expansion of the wastewater treatment plant, provide excess capacity, the project's improvements to the facility could be considered growth-inducing.

Growth-inducing impacts of the Specific Plan are primarily related to the indirect economic aspects of the commercial development. As the project's commercial uses are expected to require a larger City and surrounding area population to support the level of uses projected, growth is mandatory for the project's success. The new amenities and job opportunities will attract additional growth.

The No Project alternative has been rejected because it neither reduces the environmental impacts associated with the proposed project nor will result in a pattern of land uses that will contribute to long-term economic and social productivity. Development consistent with current trends will result in more of a hodge-podge than a cohesive urban statement, and will therefore not meet the objectives of the project as described in Section 2.0 of this report.

## *5.2 Land Use Alternative 1 - Residential and Business Park Option*

This development alternative anticipates Recreational and Office/Business Park uses near the Tuolumne River. Pockets of Residential use are located in the central and southern portion of the Corridor, with a large Freeway Commercial portion at the southern extreme of the study area. Highway Commercial and Commercial uses are anticipated along the length of the Corridor. The major distinguishing characteristic of this alternative is the provision of a secondary access road roughly paralleling Mitchell Road between Mitchell Road and the irrigation canal. Adjacent to this secondary access road would be Office/Business Park uses as well as a flexible Office/Business Park with Residential Option use which would permit integration of residences within master planned mixed-use communities and buffer the Corridor from the high-density residential neighborhood to the east. Also featured in this alternative would be realignment of the frontage road adjacent to Highway 99. Figure 18 shows a plan for Alternative 1.

Table 38 shows the approximate acreage for the proposed land uses in Land Use Alternative 1.

TABLE 38

ALTERNATIVE 1 LAND USE SUMMARY

| Land Use | Acres | Maximum Square Footage[a] |
|---|---|---|
| Freeway Commercial | 64 | 836,000 |
| Highway Commercial | 66 | 862,500 |
| Commercial | 78 | 1,019,500 |
| Office/Business Park | 130 | 1,699,000 |
| Residential | 57 | 855 units |
| Office/Business Park with Residential Option | 42 | 549,000/ 630 units |

a Assumes maximum of 15 units per gross acre and 30% coverage for commercial, office, and business park uses.

FIGURE 18 ALTERNATIVE 1

This alternative has been designed to provide more of a balance of uses, compared to the proposed project. The alternative seeks to provide a wider range of land uses, and allows for flexibility in the intersection of residential uses with commercial uses.

This alternative would also result in similar impacts to Hydrology and Soils and Geology, due to the overall conversion of vacant land to urban uses at buildout. Roughly the same amount of agricultural uses would be replaced. This plan achieves more of a balance regarding population and employment opportunities than does the proposed project. Traffic and circulation impacts would be considerably less in this alternative, due to the addition of a secondary access road paralleling Mitchell Avenue, as well as due to the general reduction in commercial land use. Largely because of the potential reduction in traffic volumes, noise impacts are expected to be less severe than those associated with the proposed project.

Assuming maximum buildout of the residential component implementation of this alternative would result in the annual consumption of 98% of the proposed project's electricity consumption; 89% of the natural gas consumed by the proposed project, and 158% of the proposed project's water consumption. This alternative would generate 108% of the sewage generated by the proposed project. Land Use Alternative 1 provides more residential units than the proposed project, and would therefore place greater demands on police and fire protection, parks and recreation, and schools.

Land Use Alternative 1 has been rejected because it fails to achieve the objectives of the Specific Plan as outlined in Section 2.2 of this report. Specifically, this alternative would not "capitalize on and maximize the economic potential of the Mitchell Road Corridor so that the area can be viewed as an economic asset to the City."

### *5.3 Land Use Alternative 2 - 50 Percent Reduction in Commercial Use Intensity*

Land Use Alternative Two proposes the same types and locations of land uses as the proposed project, but reduces the intensity of proposed commercial development by 50 percent. Table 39 describes this alternative.

Since this alternative would entail more open space than the proposed project, less stormwater runoff would be diverted from the site. Therefore, less extensive drainage improvement would be necessary to contain and transport stormwater. Fewer people would be exposed to the site's geologic hazards. Some of the additional open space could remain in agricultural production, as the site would retain more of its "rural" character.

## TABLE 39

## ALTERNATIVE 2 LAND USE SUMMARY

| Land Use | Acres | Maximum Square Footage[1] |
|---|---|---|
| Neighborhood Commercial | 52.89 | 345,600 |
| Planned Commercial | 138.45 | 904,650 |
| Highway Commercial | 28.86 | 188,550 |
| Retail Commercial | 61.62 | 402,650 |
| Business Park | 105.40 | 1,377,400 |
| Residential | 49.48 | 282 du |
| **TOTAL:** | **436.70 acres** | |

Implementation of this alternative would provide considerably fewer employment opportunities than the proposed project. Traffic and circulation impacts would be less severe due to the reduction of approximately 104,000 daily vehicle trips when compared to the proposed project. Noise impacts would be similarly mitigated due to the reduction in traffic along the Corridor. When compared to the proposed project, this alternative would consume 62 percent of the electricity, 64 percent of the natural gas. Corresponding reductions in water consumption and sewage generation would be expected. Impacts on solid waste facilities, police services and fire protection services would also be reduced.

This alternative has been rejected because its implementation would not satisfy the objectives of the City for the proposed Specific Plan described in Section 2.2 of this report. Specifically, this alternative would not "capitalize on and maximize the economic potential of the Mitchell Road Corridor so that they can be viewed as an economic asset to the City.

### *5.4 Land Use Alternative 3 - Recreation/Entertainment Center Alternative*

This alternative would generally retain the land use types and intensities featured in the proposed project for that portion of the Corridor north of Don Pedro Drive and south of Hatch Road. That is, this alternative would stress mixed use, highway commercial, and neighborhood commercial uses in the central portion of the Corridor. The corridor would be anchored by recreation/entertainment centers at both ends. At the north end, this alternative would retain the River Oaks Golf Course and would add additional entertainment/recreation use in the remainder of the Airport Overlay Zone. Public parks, miniature golf courses, a tennis center, a go-cart track, and a recreational vehicle facility are examples of appropriate outdoor recreation/entertainment uses. Anticipated indoor uses are movie theaters, a community center, bowling alleys, and theme restaurants. The area

designated as "Freeway Overlay Zone" at the southern end at the site would also be devoted to entertainment/recreation uses.

The Recreation/Entertainment Center Alternative, like the 50 percent commercial reduction alternative, would result in more open space than the proposed project. Marginal decreases in the amount of stormwater generated and seismic risks would result from this alternative. A similar amount of agricultural land would be converted, but the aesthetic impacts of facilities such as RV areas miniature golf course would be a significant concern. In addition, this alternative would generate fewer employment opportunities than the proposed project.

The overall traffic generated would decrease, with commensurate benefits in intersection efficiency. Peak traffic generating hours for the recreation/entertainment facilities would be during the evening. Weekend traffic would be expected to increase especially in the northern portion of the site, as recreational uses would replace the proposed industrial park uses. Overall noise levels might decrease with the elimination of some commuter traffic accessing the extreme ends of the site, but nighttime noise levels and noise nuisances are likely to increase due to the provision of outdoor recreation areas which operate at night and due to indoor recreation uses which generate most of the them patronage during evenings.

Impacts on public services and utilities are difficult to quantify since there is such great variability in the potential depends for these resources depending on the exact entertainment or recreational use. For example, a public park would consume relatively few resources, while restaurants consume relatively large quantities of resources. It is anticipated, though, that consumption of public services and utilities would be somewhat less in this alternative than the proposed project.

This alternative has been rejected because it will not meet the objectives of the project as described in Section 2.2 of this report. Specifically, this alternative would not satisfy the desired aesthetic quality for the corridor and would not "capitalize on and maximize the economic potential of the Mitchell Road Corridor so that the area can be viewed as an economic asset to the City."

Tables 40 and 41 provide a comparative evaluation of the proposed alternatives. Table 40 summarizes the relative statistics for each alternative. Table 41 compares project alternatives' impacts relative to the proposed project.

## TABLE 40

## COMPARISON OF ALTERNATIVES

| Land Use Type | Square Feet per Land Use Category Alt. 1 | Alt. 2 | Alt. 3 |
|---|---|---|---|
| Neighborhood Commercial | -- | 345,600 | 690,000 |
| Freeway Commercial | 836,000 | -- | -- |
| Highway Commercial | 862,500 | 188,550 | 380,000 |
| Commercial (General) | 1,019,500 | 1,307,300 | 1,800,000 |
| Office/Business Park | 2,248,000 | 1,377,400 | -- |
| Residential | 1,485 du | 282 du | 282 du |
| Recreational | | | 100 acres |

## TABLE 41

## SUMMARY OF PROJECT ALTERNATIVES IMPACTS RELATIVE TO THE PROPOSED PROJECT

KEY: NP = No Project; Alt. 1 = Residential and Business Park Option; Alt. 2 = 50 Percent Reduction in Commercial Use; Alt. 3 = Recreation/Entertainment Center Alternative; (+) = Greater Impact; (0) = Similar Impact/No Change; (-) = Lesser Impact.

| Environmental Issue | NP | Alternative Alt. 1 | Alt. 2 | Alt. 3 |
|---|---|---|---|---|
| Soils and Geology | - | 0 | - | 0 |
| Air Quality | - | - | - | - |
| Hydrology | - | 0 | - | 0 |
| Noise | - | - | - | 0/+ |
| Aesthetics/Light and Glare | 0/+ | 0 | - | 0/+ |
| Land Use | + | 0 | - | - |
| Population and Housing | - | 0 | 0 | 0 |
| Traffic and Circulation | - | - | - | - |
| Public Services/Utilities | - | + | - | 0/- |
| Energy Conservation | - | 0/+ | - | 0/- |

CEQA Guidelines (Section 15126(d)) requires an assessment of the environmentally superior alternative among the project alternatives. As the Summary of Project Alternatives Impacts demonstrates the environmentally superior alternative in Land Use Alternative 2, the 50 percent reduction in commercial use. None of the other alternatives presented in this section provides environmental quality improvement in each impact category, compared to the proposed project.

## *6.0 UNAVOIDABLE ADVERSE IMPACTS*

Implementation of the proposed project would create a number of adverse environmental impacts, which Section 3.0 of this report documents. This EIR recommends mitigation measures for most of these impacts which, if implemented, would reduce these impacts to a level of insignificance. However, several impacts would be unavoidable, even with the implementation of the mitigation measures described in this report. This section briefly addresses these unavoidable adverse impacts.

Land Use

Implementation of the proposed project would result in the loss of productive agricultural land within the project site. This loss would contribute to the cumulative loss of farmland in the Ceres area as the city grows.

Air Quality

Emissions of air pollutants would increase as a result of the proposed project's consumption of electricity and natural gas and the increased traffic associated with project development. The increase in carbon monoxide concentrations and levels of other pollutants would further degrade local and regional air quality.

Traffic

The additional approximately 210,000 trip ends associated with the project will cumulatively impact city-wide circulation; Mitchell Road will operate at or above capacity conditions.

Noise

Existing residences would be exposed to CNEL levels exceeding the City noise standards as increased traffic and intensity of land use worsen ambient noise conditions along the Mitchell Road Corridor.

## *7.0 RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY*

Since many uses current uses along the Mitchell Road Corridor are inefficiently designed, poorly maintained, or grossly underutilized, the conversion of the site to the proposed uses represents a long-term commitment to the continued growth and redevelopment of this area in particular, and in the City of Ceres in general.

Projects which accommodate the adverse impacts of development and enhance the quality of life for the community as a whole also improve the overall community environment. Economic and social pressures for growth in the Ceres area are such that complete preservation of the environment is not practical. Therefore, a balance must be sought that accommodates the needs of Ceres' population, while maintaining the integrity of the environment. It is the degree to which this balance is achieved in a given development that establishes the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity. The land uses proposed in the Mitchell Road Corridor Specific Plan integrate measures to prevent conditions that lead to urban and economic blight and promote a well-planned environment while attempting to minimize the long-term environmental consequences.

The implementation of the proposed Specific Plan will assign the project area with land uses that enhance the site's likelihood of rehabilitation and reuse. This renewed productivity will entail the conversion of existing agricultural uses on scattered portions of the site. However, the continued growth of Ceres reduces the attractiveness of maintaining long-term agricultural use of these properties.

Positive short-term and long-term impacts will be the economic benefits realized with the creation of local employment opportunities. Development of the proposed project provides a mix of uses and a stable economic base by which the project could maintain and enhance the long-term productivity of the site.

## *8.0 IRREVERSIBLE CHANGES TO THE ENVIRONMENT*

The construction of the proposed project will entail the commitment of natural resources, energy resources and human resources. This commitment of energy, personnel and building materials will be commensurate with that of other projects of similar magnitude. Ongoing maintenance of the project site by the occupants will entail further commitment of energy resources in the form of natural gas and electricity generated by coal, hydro-electric power or nuclear energy. This project will irreversibly alter vacant land and convert agricultural uses, and would preclude the use of the site from other uses or open space. These commitments constitute long-term obligations in view of the fact that it is generally impossible to return the land to its original condition once it has been developed.

## *9.0 ORGANIZATIONS AND PERSONS CONTACTED*

| ***Agency*** | ***Contact Person*** |
|---|---|
| **Lead Agency** | |
| Ceres Planning and Community Development Department<br>2720 Second Street<br>Ceres, CA 95307<br>209/538-5774 | Jake Raper |
| **City of Ceres** | |
| City Manager<br>2720 Second Street<br>Ceres, CA 95307 | James Marshall |
| Department of Public Safety<br>Police Division<br>2727 Third Street<br>Ceres, CA 95307 | Gail Peterson |
| Department of Public Safety<br>Emergency Services Division<br>2727 Third Street<br>Ceres, CA 95307 | Brian Weber |
| Department of Public Works<br>2720 Second Street<br>Ceres, CA 95307 | Joe Hollstein |
| **County of Stanislaus** | |
| Department of Planning and Community Development<br>1100 H Street<br>Modesto, CA 95354<br>209/525-6330 | Fran Sutton-Berardi |
| Department of Environmental Resources<br>1716 Morgan Road<br>Modesto, CA 95351<br>209/525-4152 | L. Denton Hoeh |

## City of Modesto

Parking and Traffic Department — Firoz G. Vohra
City Hall - 801 11th Street
P.O. Box 642
Modesto, CA 95353
209/577-5430

Utility Services Department — Richard C. Smith
City Hall - 11th and H Streets
P.O. Box 642
Modesto, CA 95353
209/577-5318

Department of Planning and
Community Development — Steven R. Nish
City Hall - 11th and H Streets
P.O. Box 642
Modesto, CA 95353
209/577-5280

## Others

Turlock Irrigation District — Steve P. Lawrence
333 East Canal Drive — N.C. Boberg
Turlock, CA 95381 — Richard Veela
209/632-3861 — Robert M. Nees

Pacific Bell — J. A. Caldwell
1320 East Shaw Avenue, Suite 120B
Fresno, CA 93762
209/228-7044

Pacific Gas and Electric — Jim Dymke
285 North Third
Oakdale, CA 95361
209/576-6647

Bonzi Disposal — Bert Bertolotti
P.O. Box 745
Ceres, CA 95307

Ceres Memorial Hospital — Rick Thomas
1905 Memorial Drive
Ceres, CA 95307
209/526-4500

Hans Giroux
26 Sunriver
Irvine, CA 92714
[Noise]

James Zuver and Associates
2401 Capitol Avenue
Sacramento, CA 95816
916/442-2001
[Socioeconomics]

Jim Zuver
David Seim

Wilbur Smith Associates
282 Second Street, 2nd Floor
San Francisco, CA 94105
415/896-0670
[Traffic and Circulation]

Andy Nash
Bill Hurrell

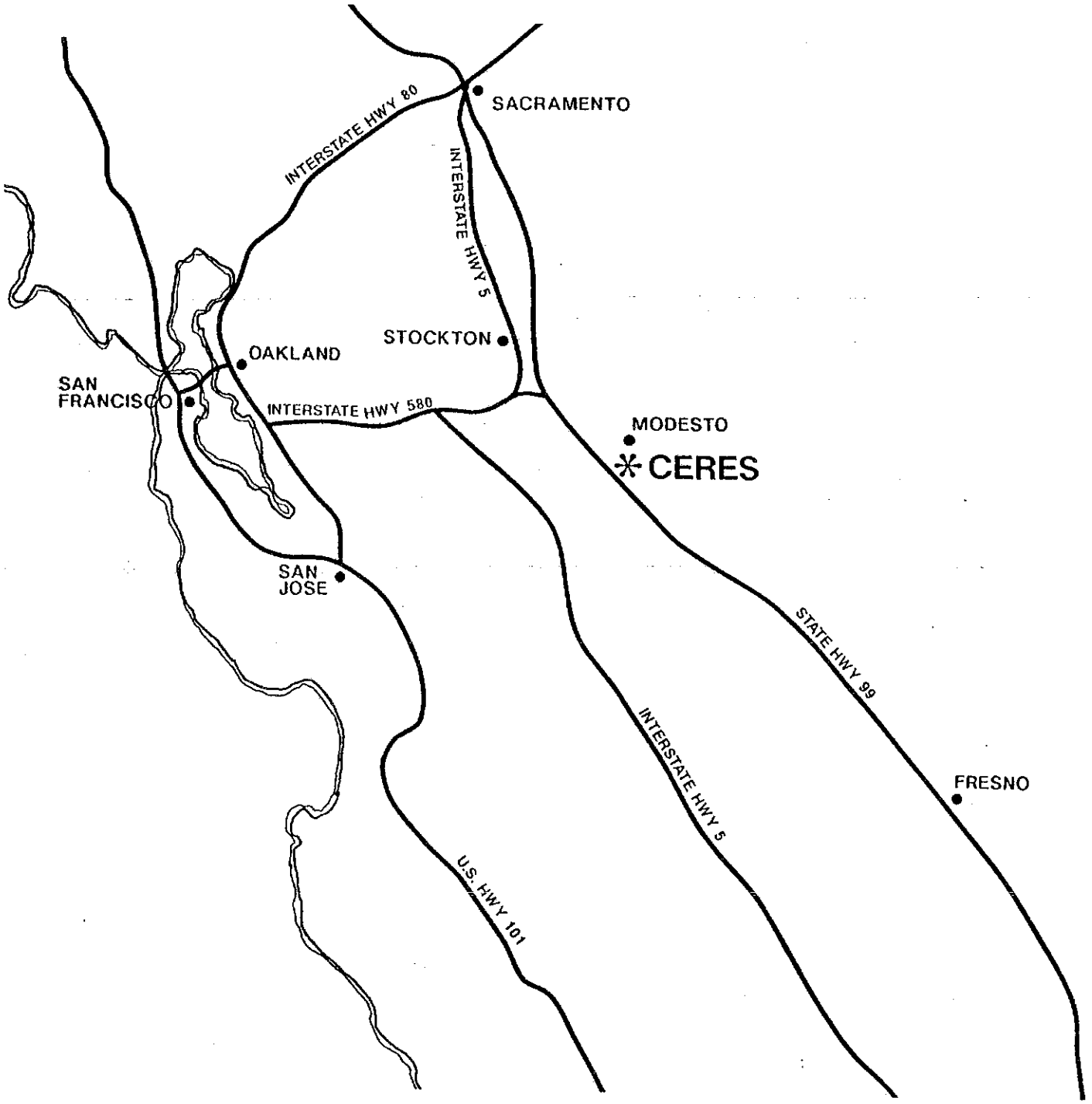
# APPENDIX A
# INITIAL STUDY AND NOP RESPONSES

# APPENDIX B
# NOISE ANALYSIS

# APPENDIX C
# MARKET ANALYSIS AND ECONOMIC EVALUATION

# APPENDIX D
# TRAFFIC IMPACT STUDY

# REGIONAL LOCATION



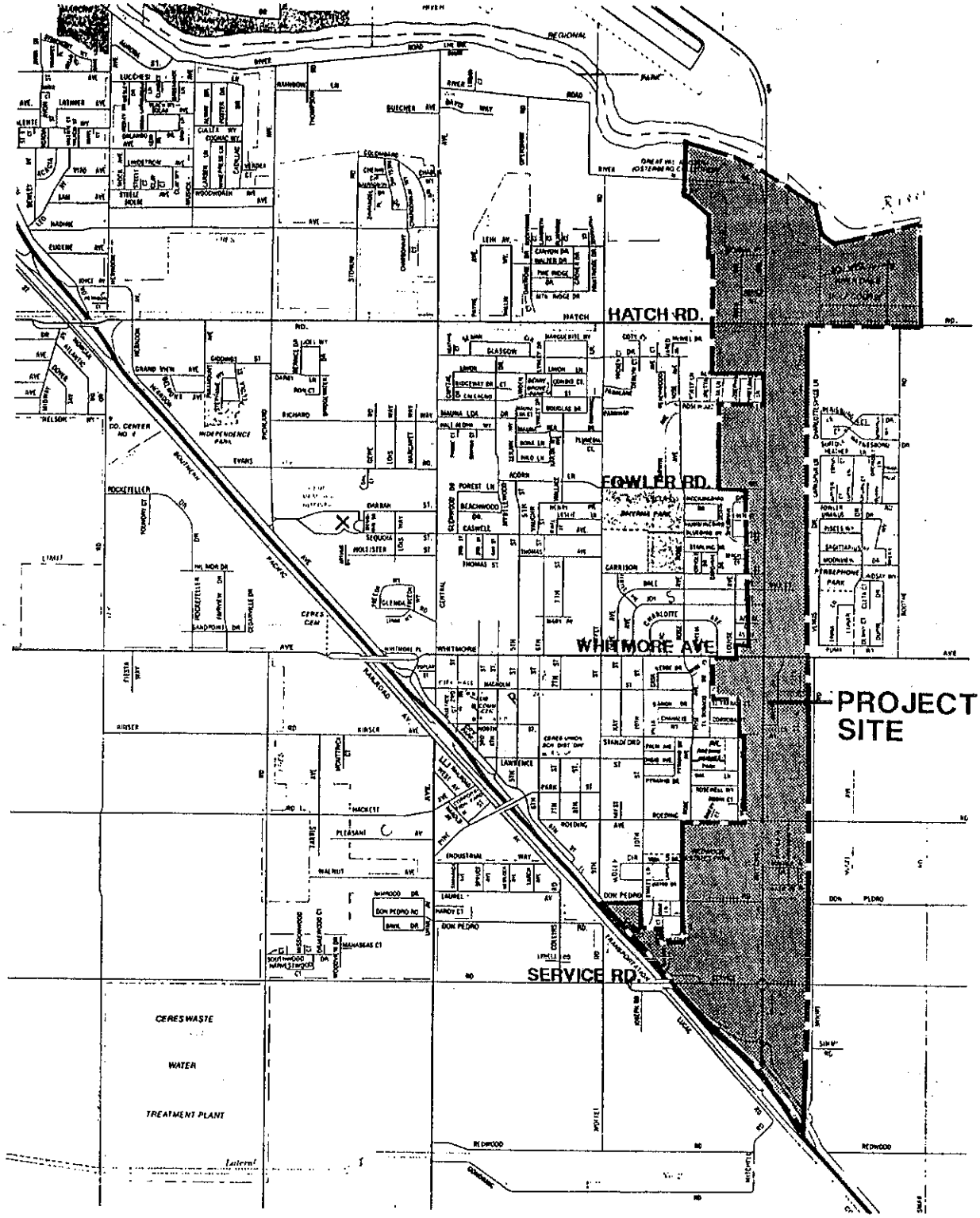

# MITCHELL ROAD CORRIDOR EIR

## CITY OF CERES

THE PLANNING CENTER
1300 DOVE STREET, SUITE 100
NEWPORT BEACH, CA 92660 (714) 851-9444

FIGURE 1

# VICINITY MAP




# MITCHELL ROAD CORRIDOR EIR

## CITY OF CERES

FIGURE 2

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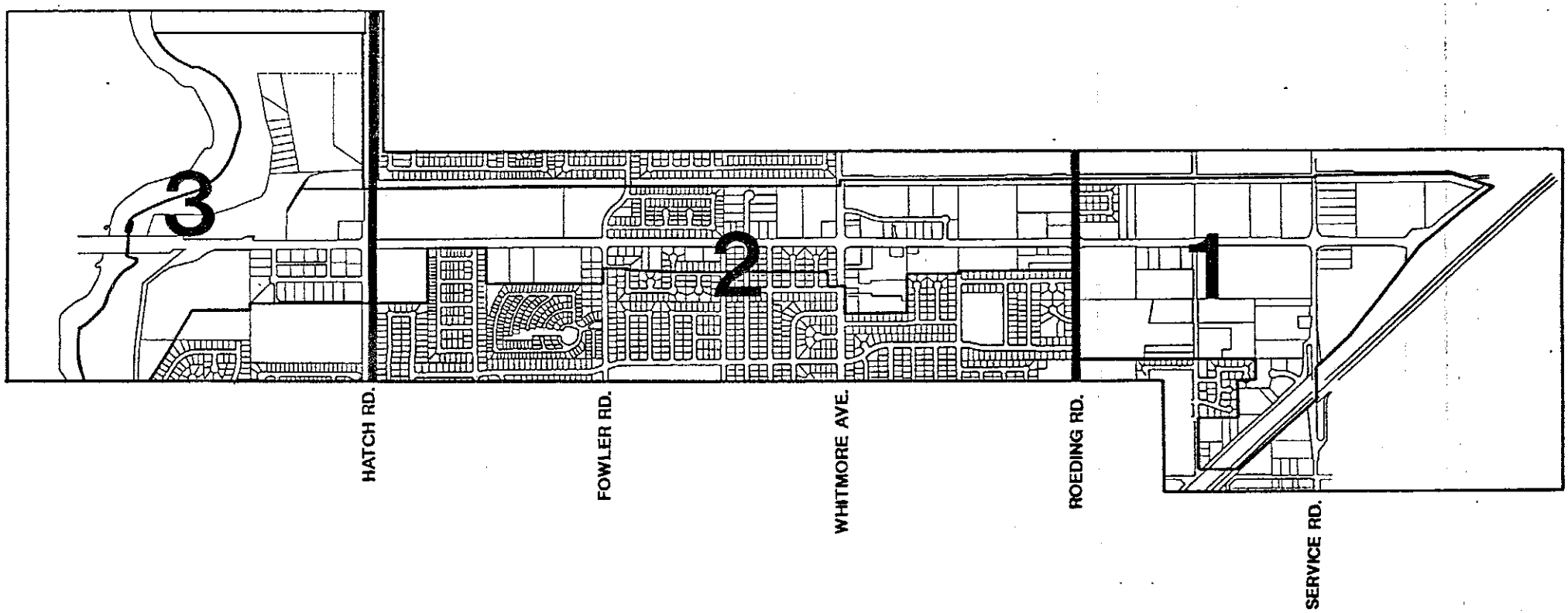
# PLANNING AREAS

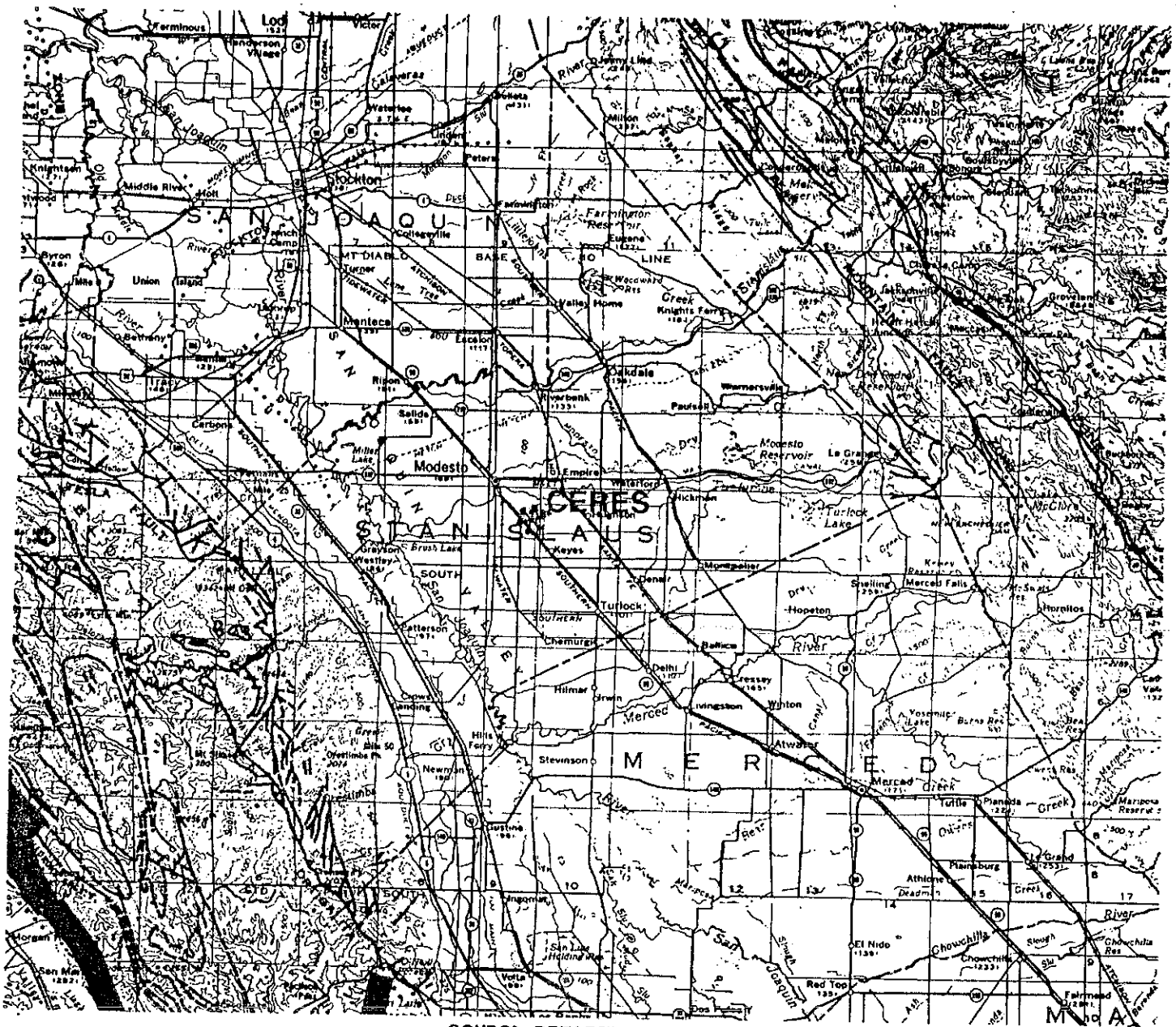



# MITCHELL ROAD CORRIDOR
# SPECIFIC PLAN
## CITY OF CERES

THE PLANNING CENTER

EXHIBIT 3

# FAULT MAP




SOURCE: DEPARTMENT OF CONSERVATION FAULT MAP OF CALIFORNIA 1975

FAULT TRACES

MAJOR FAULT TRACES

COUNTY LINES

# MITCHELL ROAD CORRIDOR EIR

## CITY OF CERES

SCALE:1"=12 MILES

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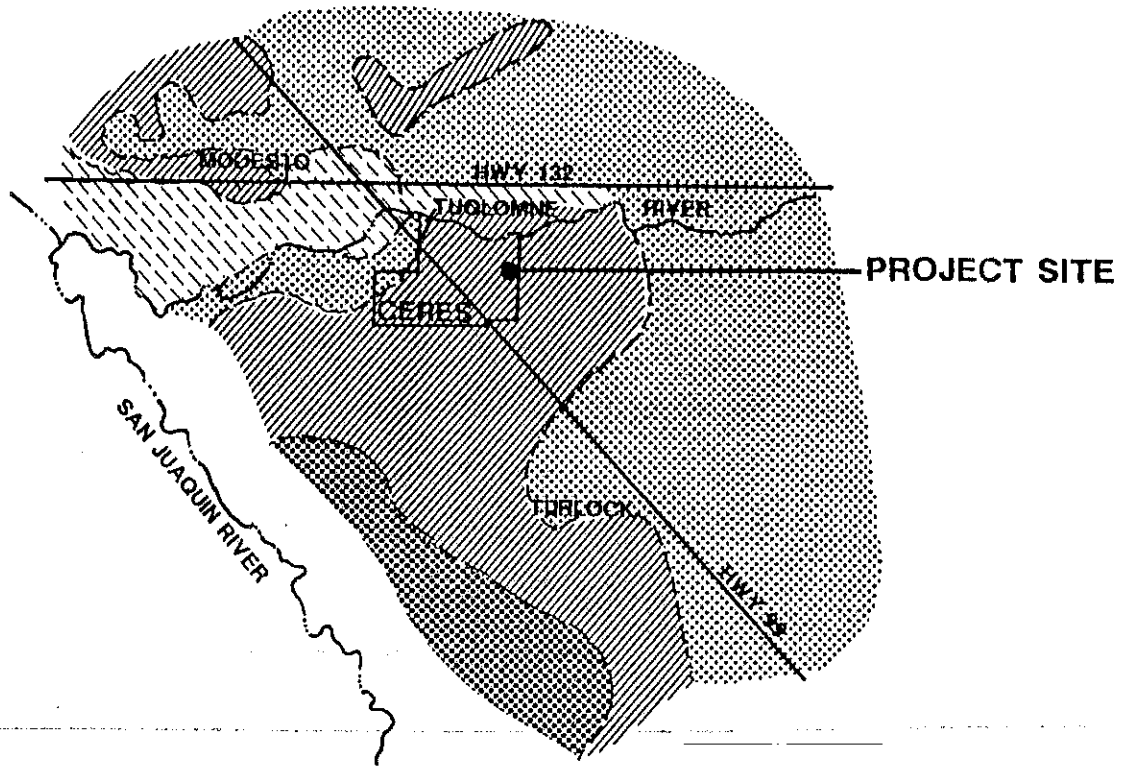
FIGURE 5

# CHLORIDE CONCENTRATIONS IN GROUNDWATER




CHLORIDE, MG/L

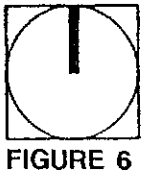
<20 21-40 41-100 >100

SOURCE: WASTE WATER TREATMENT FACILITY EXPANSION STUDY FOR THE CITY OF CERES; DEWANTE AND STOWELL, 1984.

# MITCHELL ROAD CORRIDOR EIR

## CITY OF CERES

NOT TO SCALE



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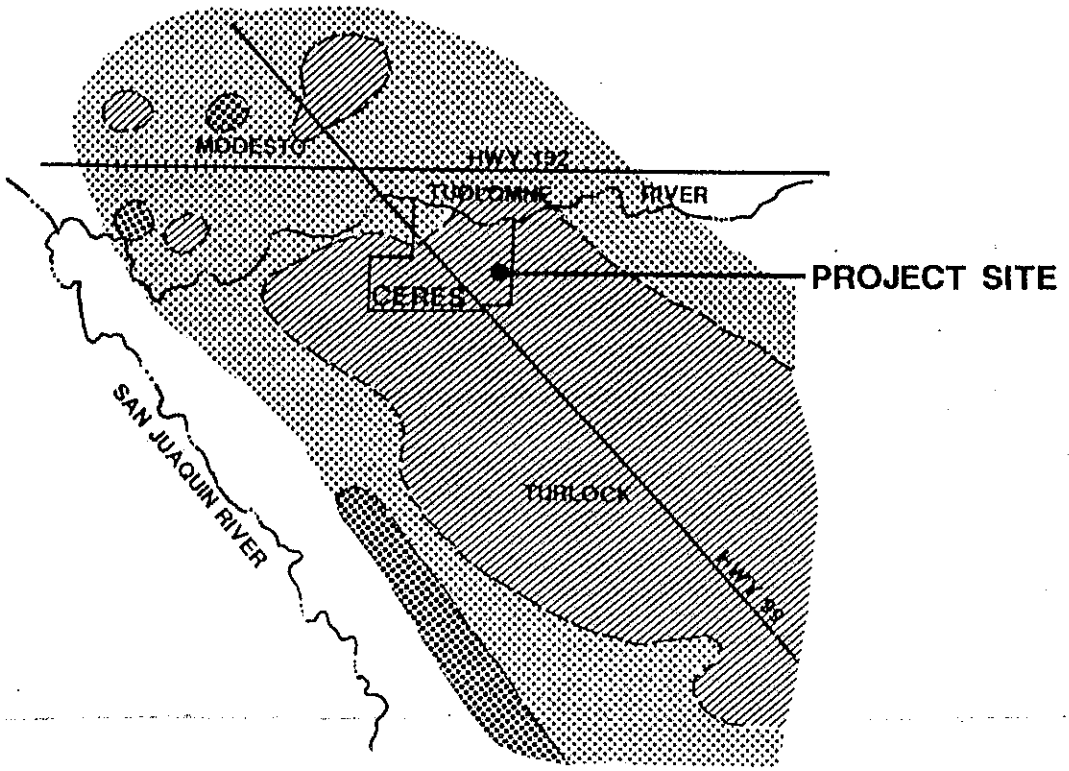
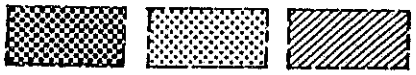
NEWPORT BEACH, CA 92660 (714) 851-8444

FIGURE 6

# NITRATE CONCENTRATION IN GROUNDWATER




NITRATE, MG/L



<10 10-20 >20

SOURCE: WASTE WATER TREATMENT FACILITY EXPANSION STUDY FOR THE CITY OF CERES; DEWANTE AND STOWELL, 1984.

# MITCHELL ROAD CORRIDOR EIR

## CITY OF CERES

NOT TO SCALE

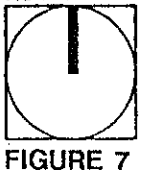


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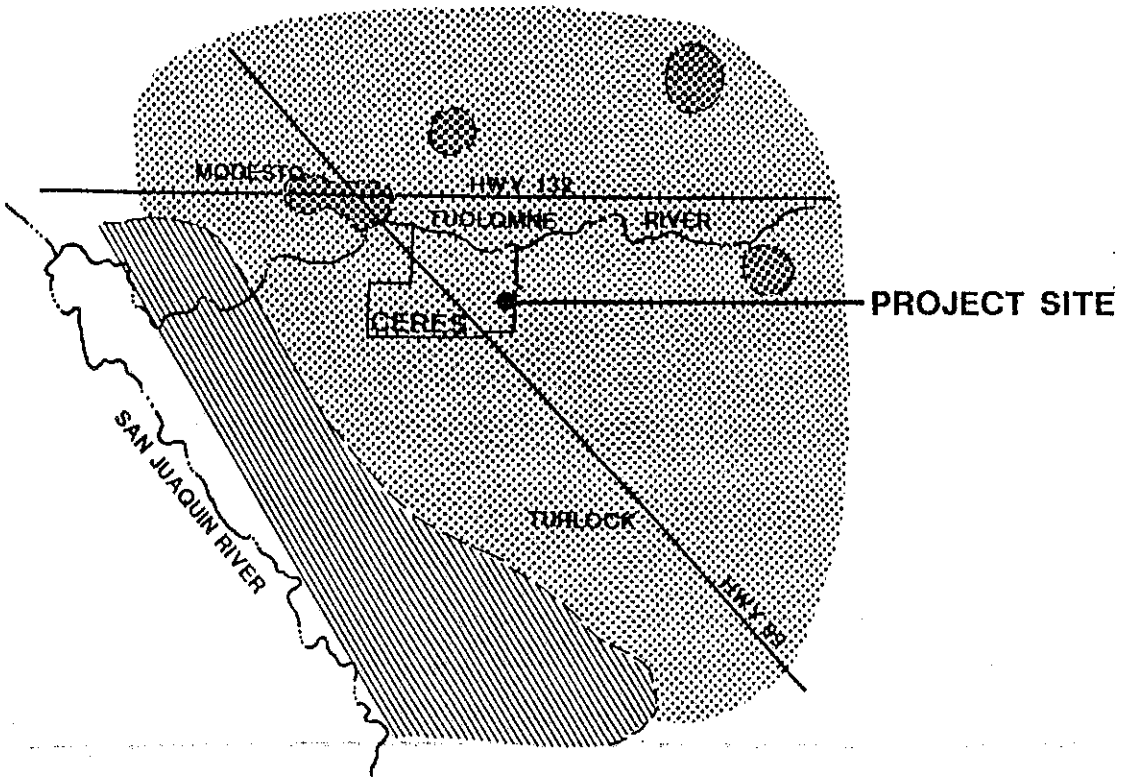
FIGURE 7

# SALINITY HAZARDS TO GROUNDWATER




SALINITY HAZARDS

| C1 | C2 | C3 |
|---|---|---|
| LOW | MEDIUM | HIGH |

SOURCE: WASTE WATER TREATMENT FACILITY EXPANSION STUDY FOR THE CITY OF CERES; DEWANTE AND STOWELL, 1984.

# MITCHELL ROAD CORRIDOR EIR

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FIGURE 8

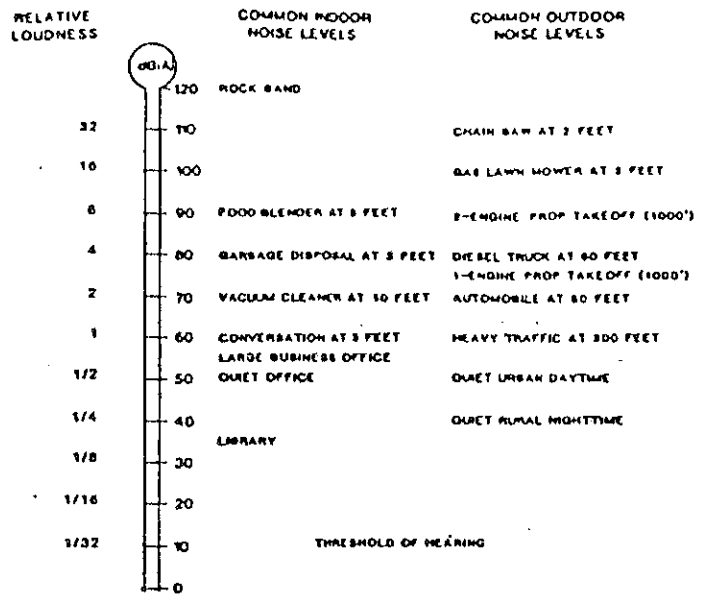
## SITE DEVELOPMENT STANDARDS MATRIX

| | FC | RC | HC | NC | IP | R* | MX1 | MX2 |
|---|---|---|---|---|---|---|---|---|
| 1. Site Dimensions | | | | | | | | |
| • Minimum Lot Area (square feet) | 27,000 | 27,000 | 10,000 | 10,000 | 10,000 | 6,200 | 10,000 | 7,500 |
| • Minimum Lot Width (feet) | 100 | 100 | 100 | 60 | 100 | 60 | 100 | 75 |
| • Minimum Lot Depth (feet) | 270 | 270 | 100 | 100 | 100 | 100 | 100 | 0 |
| 2. Buffer Yards (feet) | | | | | | | | |
| • Minimum Front Yard | 15 | 15 | 10 | 10 | 15 | 20 | 15 | 15 |
| • Minimum Side Yards | | | | | | | | |
| 1. General Residential | - | - | - | - | 10 | - | - | - |
| 2. Abutting Residential < 35' building | 10 | 10 | 5 | 5 | | 5 | 10 | 10 |
| 3. Abutting Residential ≥ 35' building | 20 | 20 | - | - | - | - | - | - |
| • Rear Yards | | | | | | | | |
| 1. General Residential | - | - | - | - | 10 | - | - | - |
| 2. Abutting Residential < 35' building | 10 | 10 | 10 | 10 | - | - | 10 | 10 |
| 3. Abutting Residential ≥ 35' building | 20 | 20 | - | - | - | - | - | - |

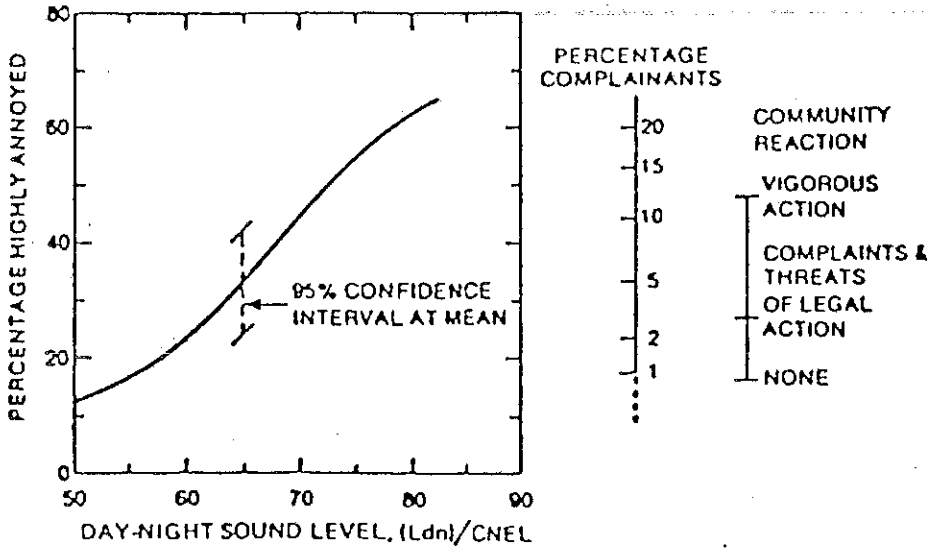
*Note: "R" (residential) is a combination of R1, R3, R4 and PC, and applies only to existing residential uses which shall abide by current zoning requirements as specified by the City Zoning Ordinance.

# NOISE GRAPHS

## A. TYPICAL NOISE LEVELS




## B. COMMUNITY RESPONSE TO NOISE LEVELS




SOURCE: "IMPACT OF NOISE ON PEOPLE" FAA, OFFICE OF ENVIRONMENTAL QUALITY, MAY 1977

# MITCHELL ROAD CORRIDOR EIR

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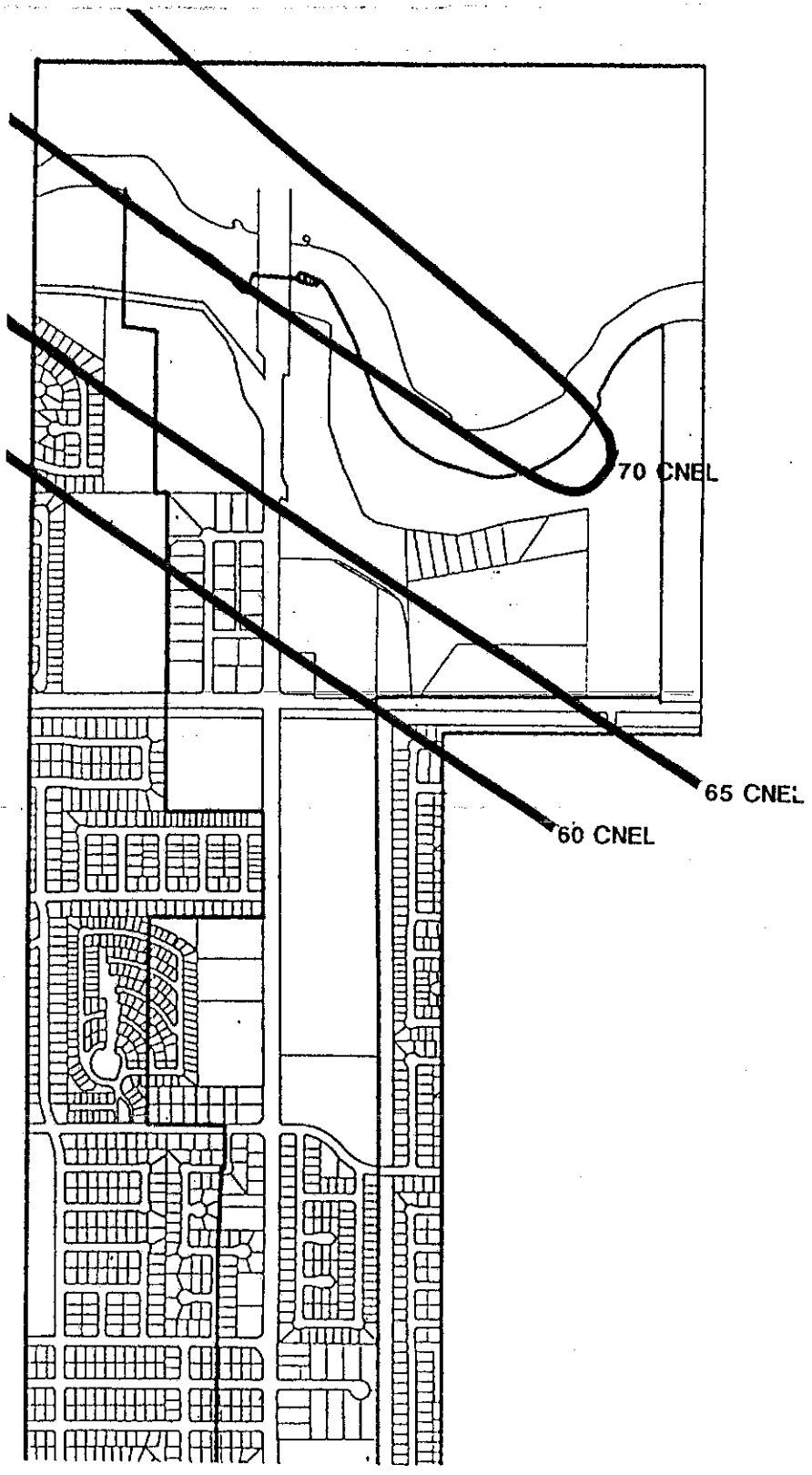
FIGURE 9

# AIRPORT NOISE CONTOURS




# MITCHELL ROAD CORRIDOR EIR

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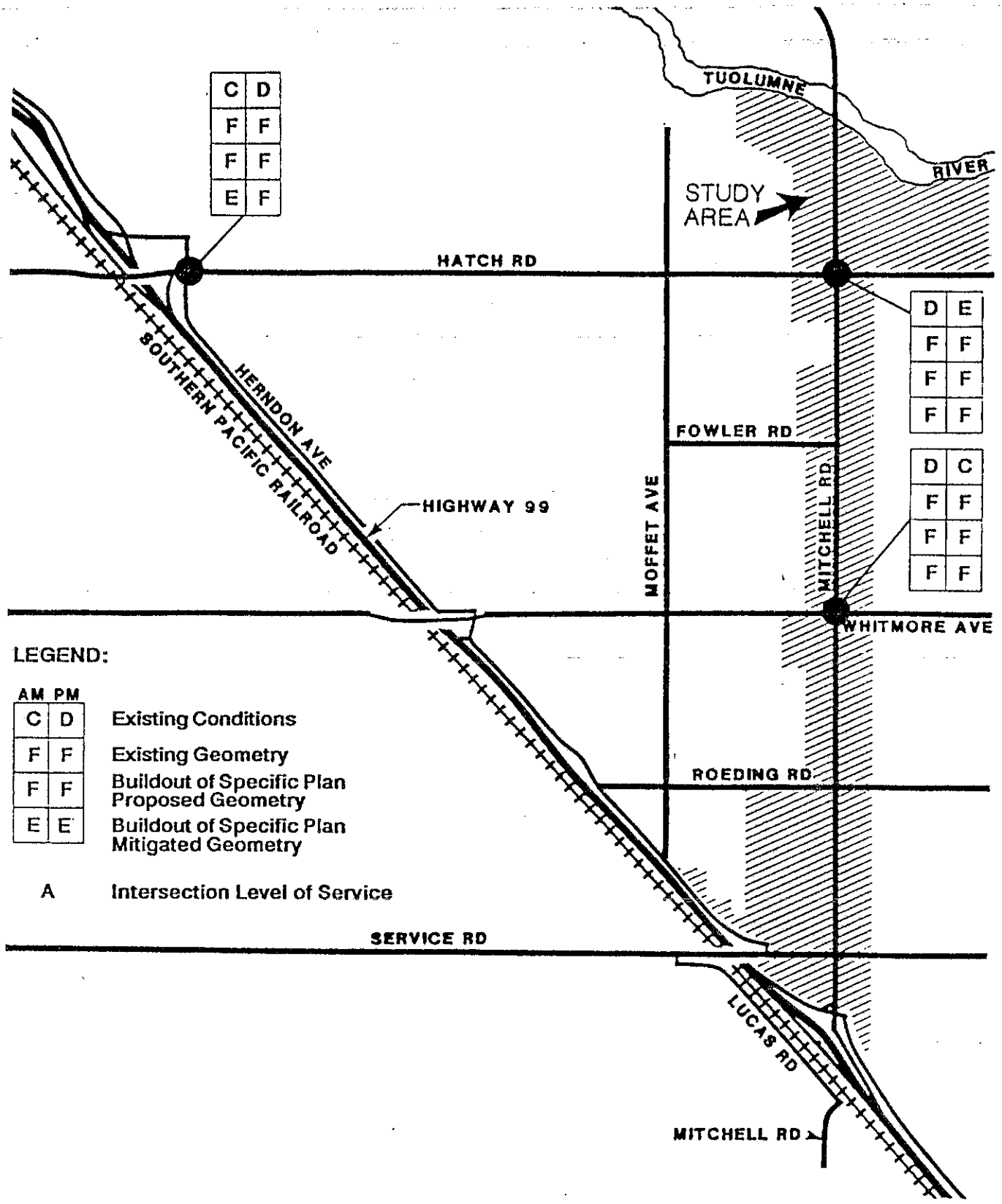
FIGURE 11

# INTERSECTION LEVEL OF SERVICE




# MITCHELL ROAD CORRIDOR EIR

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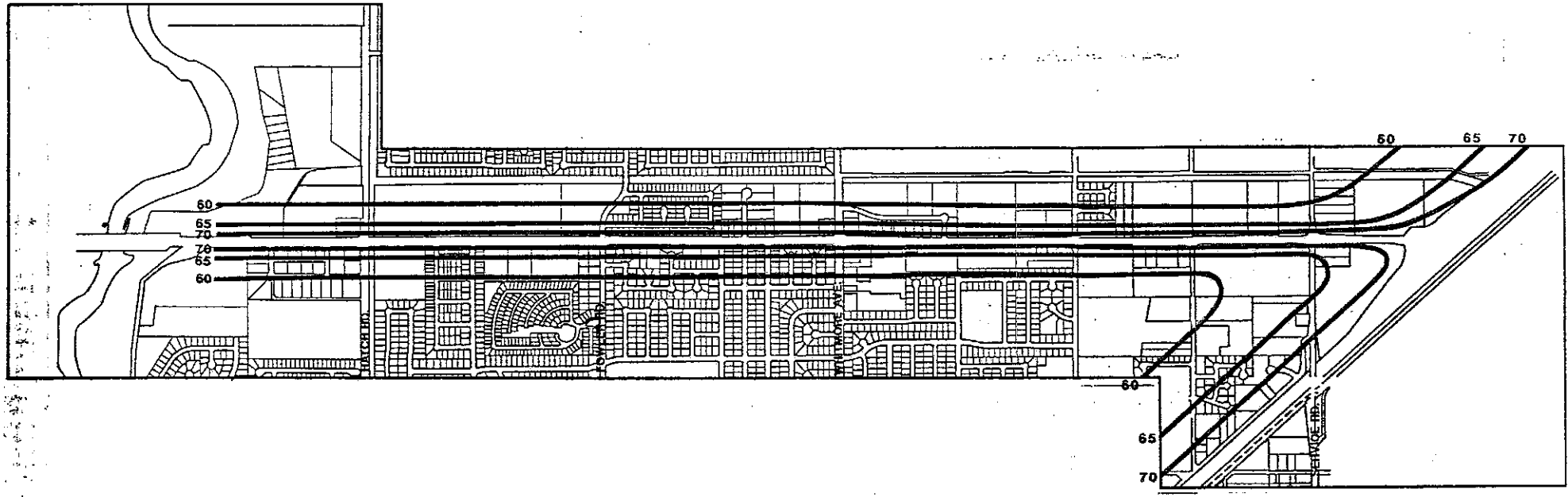
FIGURE 17

## MITCHELL ROAD EXISTING (WORST CASE) CNEL CONTOURS




# MITCHELL ROAD CORRIDOR EIR

CITY OF CERES

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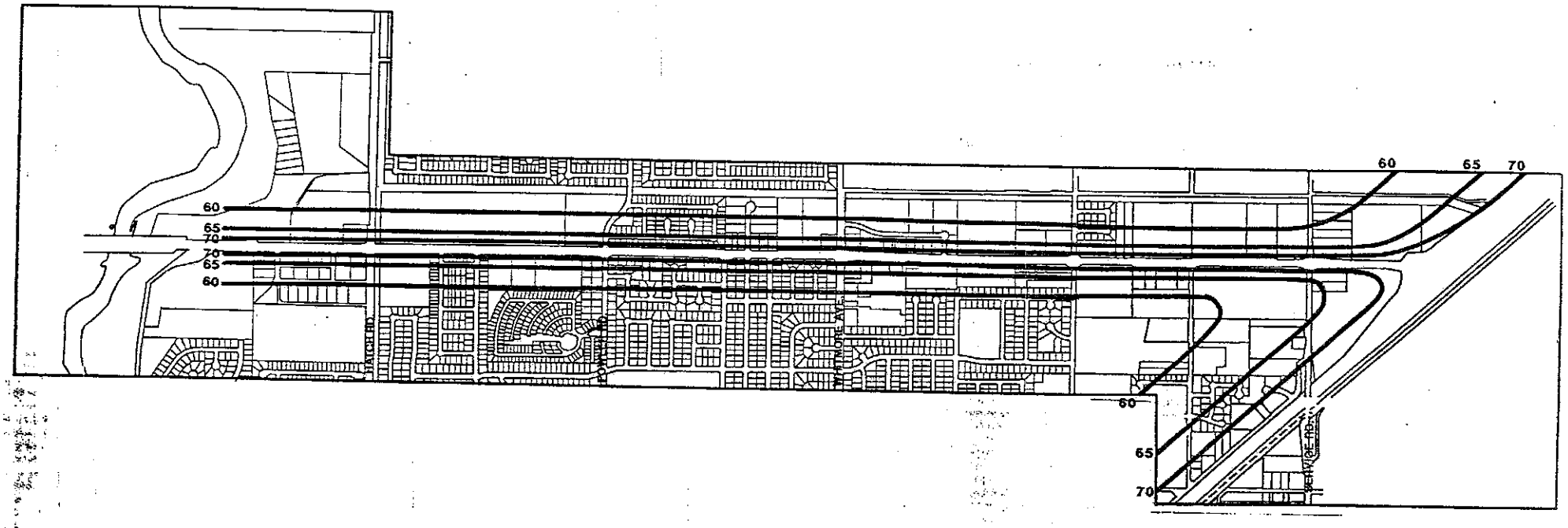
FIGURE 10

## ESTIMATED (WORST CASE) CNEL CONTOURS FOR MITCHELL ROAD WIDENING




# MITCHELL ROAD CORRIDOR EIR

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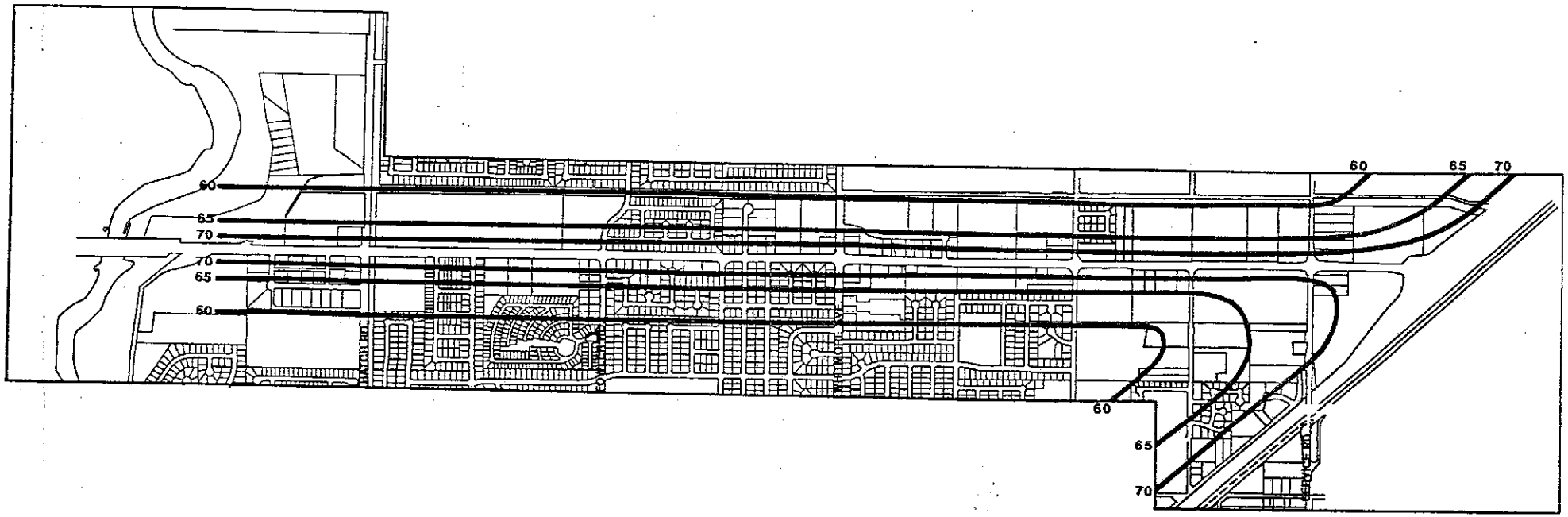
FIGURE 12

## FUTURE (WORST CASE) CNEL CONTOURS

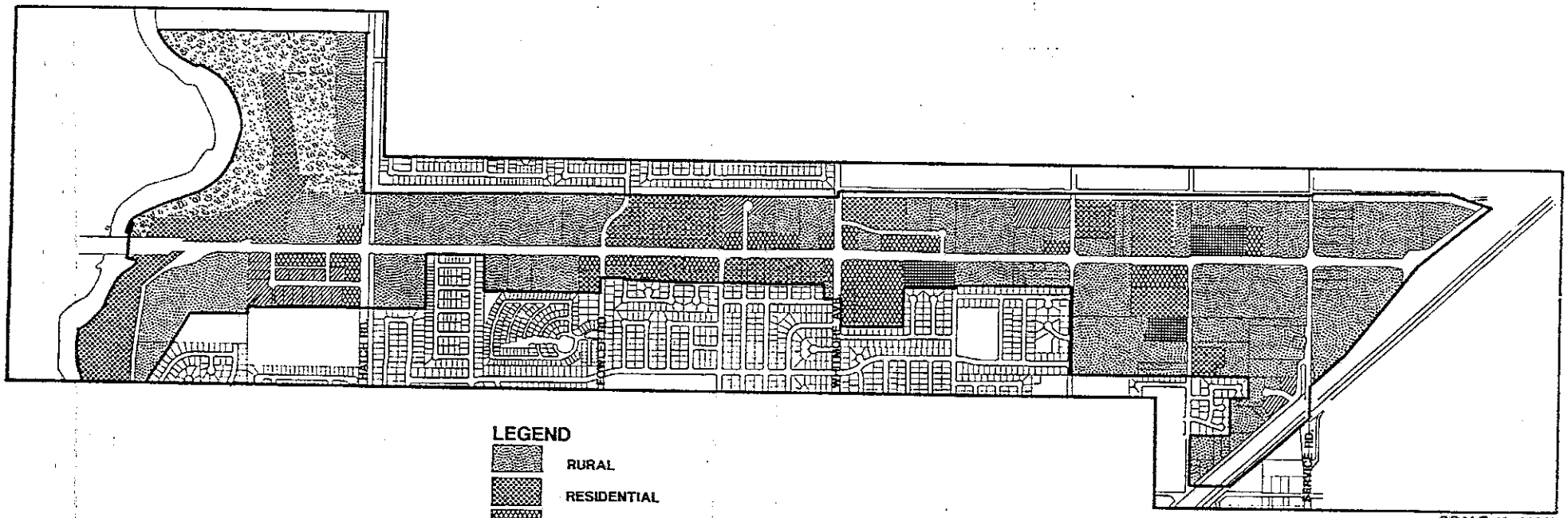



MITCHELL ROAD CORRIDOR
EIR
CITY OF CERES

THE PLANNING CENTER

FIGURE 13

## EXISTING LAND USES




SCALE 1"=1100'

**LEGEND**

- RURAL
- RESIDENTIAL
- COMMERCIAL
- LIGHT INDUSTRIAL
- INSTITUTIONAL
- OPEN SPACE/RECREATION

# MITCHELL ROAD CORRIDOR EIR

CITY OF CERES

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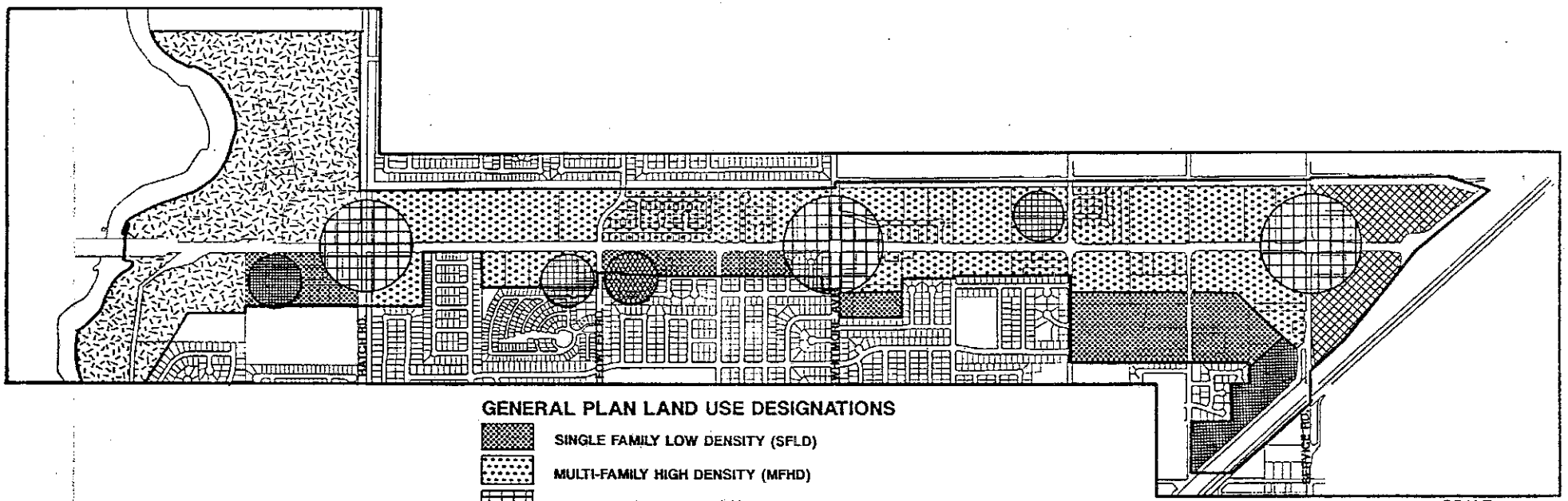
FIGURE 14

# EXISTING LAND USE DESIGNATIONS




SCALE 1"=1100'

## GENERAL PLAN LAND USE DESIGNATIONS

- SINGLE FAMILY LOW DENSITY (SFLD)
- MULTI-FAMILY HIGH DENSITY (MFHD)
- COMMUNITY CENTER (CC)
- NEIGHBORHOOD COMMERCIAL (NC)
- SERVICE COMMERCIAL (SC)
- PROFESSIONAL OFFICE (PO)
- HIGHWAY COMMERCIAL (HC)
- RESIDENTIAL AGRICULTURE (RA)

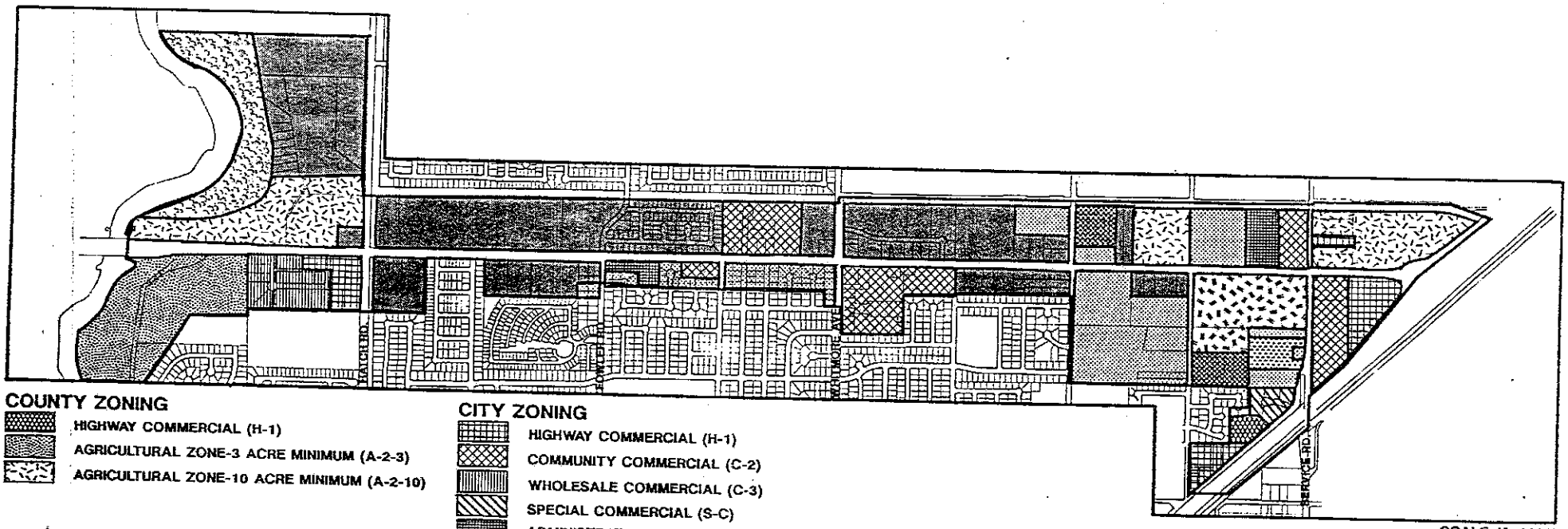
**MITCHELL ROAD CORRIDOR EIR**

CITY OF CERES

THE PLANNING CENTER

FIGURE 15

# EXISTING ZONING




SCALE 1"=1100'

**COUNTY ZONING**

- HIGHWAY COMMERCIAL (H-1)
- AGRICULTURAL ZONE-3 ACRE MINIMUM (A-2-3)
- AGRICULTURAL ZONE-10 ACRE MINIMUM (A-2-10)

**CITY ZONING**

- HIGHWAY COMMERCIAL (H-1)
- COMMUNITY COMMERCIAL (C-2)
- WHOLESALE COMMERCIAL (C-3)
- SPECIAL COMMERCIAL (S-C)
- ADMINISTRATIVE PROFESSIONAL (A-P)
- PLANNED COMMUNITY (P-C)
- SINGLE FAMILY RESIDENTIAL (R-1)
- MEDIUM DENSITY MULTI-FAMILY RESIDENTIAL (R-3)
- MEDIUM-HIGH DENSITY MULTI-FAMILY RESIDENTIAL (R-4)
- OPEN SPACE/RECREATION (OS-R)
- AGRICULTURE (A)

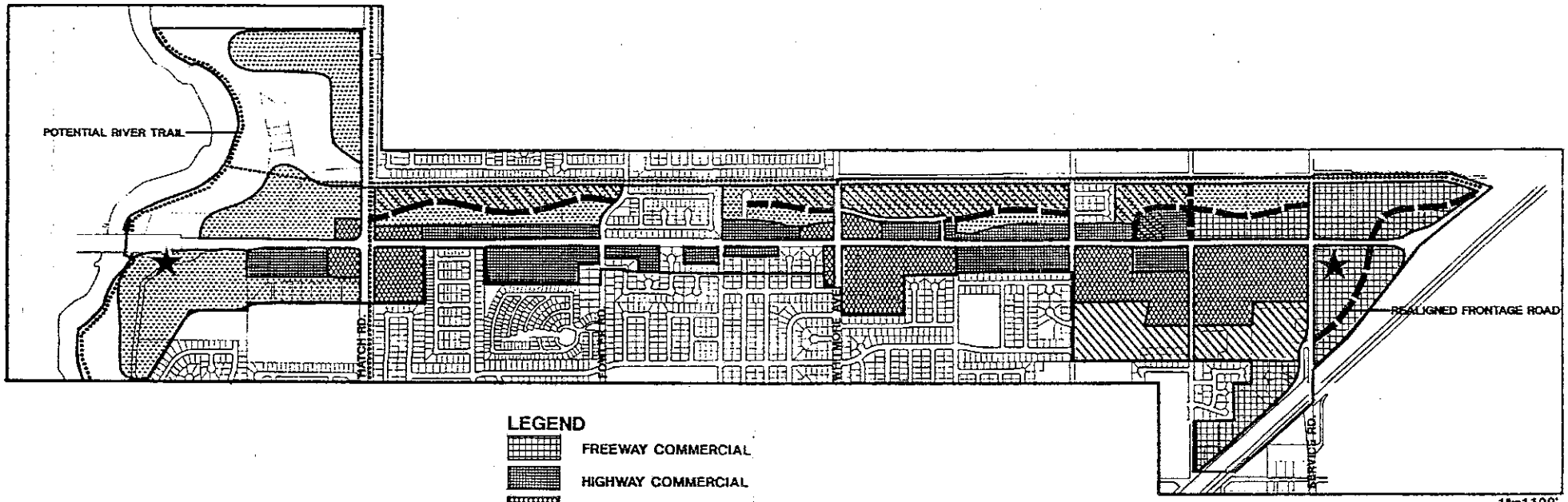
## MITCHELL ROAD CORRIDOR EIR

CITY OF CERES

THE PLANNING CENTER

FIGURE 16

## LAND USE ALTERNATIVE 1




LEGEND

- FREEWAY COMMERCIAL
- HIGHWAY COMMERCIAL
- COMMERCIAL
- OFFICE/BUSINESS PARK
- RESIDENTIAL
- OFFICE/BUSINESS PARK WITH RESIDENTIAL OPTION
- POTENTIAL SECONDARY ACCESS ROAD
- ACTIVITY CENTER
- CANAL PARK TRAIL

# MITCHELL ROAD CORRIDOR EIR

CITY OF CERES

THE PLANNING CENTER

FIGURE 18