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## UTILITIES AND SERVICE SYSTEMS

### INTRODUCTION

This chapter evaluates the ability of local utilities to provide domestic water, wastewater conveyance and treatment, storm drainage and solid waste disposal services to the Plan area.

As a separate effort, the City of Ceres is in the process of coordinating with Stanislaus LAFCO to update their Sphere of Influence to reflect anticipated new growth, including that in the Plan area. A Municipal Service Review has been prepared to support that effort and was used in preparation of this report.

Documents used in preparation of this report include the June 26, 2009 Source Capacity Assessment prepared by West Yost Associates, the March 2010 draft West Landing Specific Plan prepared by Wood Rodgers, and the February 2010 draft Water Supply Assessment for the West Landing Specific Plan prepared by Tim Durbin and Claire Velayas, as well as studies completed by the Specific Plan preparers, Wood Rodgers, in preparation of the Specific Plan.

### WATER

#### SETTING

In the Plan area, most agricultural land is irrigated with surface water from the Turlock Irrigation District (TID), while rural residences use groundwater from private wells.

The City of Modesto currently has a well site on the G3 Enterprises site and supplies the G3 facility with water.

The Ceres Public Works Department, Water Division is a branch of the City of Ceres and would serve Plan area development.

Ceres Public Works Department currently provides water service to the County facilities in the Plan area and to the Flea Market site. A City of Ceres well site was recently added near the El Rematito Flea Market, north of Hackett Road. This well is dedicated to the existing Ceres Public Works Department system and will not contribute to supply for the remainder of the Plan area.

#### Water Supply and Distribution

The Ceres Public Works Department water supply is currently obtained entirely from groundwater pumping from the underlying Turlock groundwater basin. The City currently relies on fourteen wells located within the City to supply the City's water needs. The wells have a total production capacity of

about 13,796 gallons per minute (gpm). However, the firm capacity is only 11,971 gpm, assuming Well #20 is on standby as required by the State Department of Public Health.<sup>1</sup>

The City's well system currently has generally sufficient pumping capacity to meet existing demand. Additional wells will be needed in the future so the standby well does not need to be used as an active well, but can be reserved for situations when another well fails or is taken offline.<sup>2</sup>

The City regularly tests wells to ensure the safety of the water. The City has constructed well-head treatment as necessary to remove excess contaminants, and has taken wells off line when contaminant levels were exceeded. Groundwater has the potential for naturally occurring contaminants, such as arsenic, manganese, uranium and nitrate, as well as the potential for contamination from such sources as sewer systems, agricultural irrigation, gas stations and other sites working with petroleum products.<sup>3</sup> A trend toward increasing contaminants and decreasing allowable contaminant levels has and is expected to continue to increase well head treatment costs.<sup>4</sup>

The City's water system also includes two at-grade storage tanks. During high peak hour or fire flow demand periods, water from the well system is supplemented with water from these storage tanks using booster pump facilities. The City has adequate water storage and booster pump facilities to supply additional water during high peak hour or fire flow demand periods. However, the water system has difficulty maintaining the new minimum 40 psi water pressure levels during such periods.<sup>5</sup>

The City's park irrigation system has transitioned off the City's potable water system and is currently irrigated from individual wells that are not part of the existing potable water distribution system.<sup>6</sup>

The Ceres Public Works Department maintains over 138 miles of water system pipelines that deliver water to residents and businesses in the service area. Water pressure within the system typically averages 50 psi, with lower flow pressures experienced during the summer period.<sup>7</sup>

## **PLANNED WATER SYSTEM IMPROVEMENTS**

### City-Wide

Additional wells, storage tanks, pipelines and related facilities are anticipated to be constructed in the service area. In addition, the water system will likely be transitioning to a dual well/surface supply that will receive surface water from Turlock Irrigation District (TID) to meet total projected demand at General Plan build-out. At the time of drafting this EIR, an agreement had yet to be finalized but would involve water treatment plant capacity rights and construction of new transmission/

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<sup>1</sup> Correspondence with City of Ceres staff, J. Damas.

<sup>2</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, p.4.0-2.

<sup>3</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, p.4.0-2.

<sup>4</sup> Correspondence with City of Ceres staff, J. Damas.

<sup>5</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-3.

<sup>6</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-3.

<sup>7</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, p.4.0-5.

distribution infrastructure to utilize TID's surface water supply from Don Pedro Dam. It is anticipated that TID will supply the City with 6 million gallons per day of surface water in the initial phase to supplement the groundwater supply.<sup>8</sup>

Any development and urbanization would increase municipal water demands and require adequate water supply facilities and improvements. All future development is required to fund and install necessary infrastructure.

### Plan Area

The Plan proposes to meet the total demand generated by development within the Plan area entirely with three new on-site wells. A fourth on-site well is planned to allow a single well to be out of service at any given time. Each of these wells is anticipated to produce 700 gpm based on historic well yields in the area. Emergency and peak hour demands are planned to be provided by on-site storage for the Plan area. Water demands for open space, park, and road land use is not assumed to be supplied by the domestic distribution system. These areas will be supplied either by irrigation wells or a reclaimed water system once such a system is online.<sup>9</sup>

## **REGULATORY SETTING**

### Federal

The federal Clean Water Act establishes regulatory requirements for potable water supplies including raw and treated water quality criteria. The federal safe Drinking Water Act establishes standards for contaminants in drinking water supplies. Maximum contaminant levels or treatment techniques were established for each of the contaminants. The listed contaminants include metals, nitrates, asbestos, total dissolved solids, and microbes.

### State

The California Department of Public Health enforces the California Safe Drinking Water Act. Title 22 of the California Administrative Code sets forth standards for drinking water quality.

In 2002, the State enacted SB 610 (California Water Code Sections 10910 through 10915), which requires coordination between lead agencies and public water suppliers to ensure that existing and/or planned water supplies are adequate to serve proposed development. Upon request by a lead agency, a water supplier is required to prepare a Water Supply Assessment (WSA) that characterizes existing and planned water supply and demand, with and without the proposed Specific Plan, for five year increments, and for average, dry and multiple dry years. The WSA must make a determination regarding the adequacy of existing and planned supplies to meet demand for water from the project under consideration. The lead agency considers the WSA, as well as any other information regarding water supply in the administrative record, in deciding whether to approve or deny a project. The WSA prepared for this project can be found in Appendix G of this EIR.

SB 221 (Chapter 642, Statutes of 2001) also is intended to ensure that water supply is adequate by prohibiting approval of a tentative map, a parcel map, and/or a development agreement for a subdivision of property of more than 500 dwelling units, unless the City or County obtains written

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<sup>8</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-6, as modified by comments from City of Ceres staff, Phil Scott.

<sup>9</sup> City of Ceres, West Landing Specific Plan, prepared by Wood Rodgers, August 2010, p.8-15.

verification from the applicable public water system that a sufficient water supply is available or will be available prior to completion of the project.

### Local

#### *General Plan*

The City of Ceres General Plan contains the following goals and policies regarding water supply.

#### **GOAL 4.C**

To ensure a safe and reliable water supply sufficient to meet the future needs of the city.

#### **Policies**

- 4.C.1. The City shall continue to investigate the possibility of securing and using surface water supplies for domestic use within the Ceres area.
- 4.C.2. The City shall only approve new development that relies on a public water system and where an adequate water supply and conveyance system exists or will be provided.
- 4.C.3. The City shall promote efficient water use and reduced water demand by:
  - a. Requiring water-conserving design and equipment in new construction;
  - b. Encouraging water-conserving landscaping and other conservation measures; and
  - c. Encouraging retrofitting existing development with water-conserving devices.
  - d. Providing public education programs
  - e. Distributing outdoor lawn watering guidelines
  - f. Promoting water audit and leak detection programs
  - g. Enforcing water conservation programs
- 4.C.4. The City shall investigate the use of reclaimed wastewater to offset the demand for new water supplies. Such programs may include: dual water systems for potable and nonpotable water; reuse of grey water in homes or businesses for irrigation; and reuse of sewage effluent for irrigation of crops, golf courses, or city irrigation.
- 4.C.5. The City shall promote aquifer and wellhead protection programs to limit infiltration of pollutants that might contaminate the groundwater supply.
- 4.C.6. The City shall participate in a groundwater management program to preserve existing groundwater quality and quantity and to ensure future supplies.

#### *Municipal Code*

Chapter 13.04.130 of the Municipal Code has the following water conservation provisions:

The City shall provide a comprehensive water conservation program through limitations on water usage and through public education. Landscaping systems shall be properly designed, installed, maintained and operated to prevent the wasting of water. The use of drought-tolerant landscaping shall be encouraged. Serving water in restaurants only upon customer request shall be encouraged.

A. Utility customers shall not be permitted to waste water.

1. Acts constituting water wasting shall include, but shall not be limited to, any of the following acts:
  - a. Failure to comply with the following schedule when watering lawns, plants, or garden, or using outdoor water for other purposes.
    - (1) No lawn/garden watering, or other outdoor use, will be allowed between twelve o'clock (12:00) noon and seven o'clock (7:00) P.M., every day.
    - (2) Dwellings or establishments with odd-numbered street addresses shall use outdoor water only on Sundays, Wednesdays and Fridays.
    - (3) Dwellings or establishments with even-numbered street addresses shall use outdoor water only on Tuesdays, Thursdays and Saturdays.
    - (4) No dwelling or establishment may use outdoor water on Mondays unless a determination is made of special circumstances by the Director of Public Works or his designee. In no case shall any facility water more than three (3) days a week.
  - b. Watering lawns or gardens such that excess water leaves the property or area being watered.
  - c. Watering outdoor landscaping while raining.
  - d. Washing vehicles, equipment or boats using an open hose which is not equipped with a shut-off nozzle.
  - e. Hosing down driveways, streets, parking lots and building exteriors without the consent of the Director of Public Works or his designee except for valid health or safety reasons.
  - f. Having leaky faucets or plumbing fixtures on the premises.
  - g. Operating evaporated coolers which are not equipped with a recirculating pump.

## **WATER IMPACTS AND MITIGATION MEASURES**

### Standards of Significance

The proposed Specific Plan would have a significant effect on water supply if it would:

- Have insufficient water supplies available to serve the proposed plan from existing resources, such that new or expanded supplies must be developed;
- Require or result in the construction of new water treatment and/or conveyance facilities, or expansion of existing facilities, the construction of which would cause significant environmental impacts

### Water Supplies

**Impact Util-1: Increased Water Demand.** The proposed Specific Plan would increase demand for domestic water supply.

The proposed Specific Plan would convert the current agricultural and rural residential uses to low, medium, and high density residential, neighborhood commercial, and park and open space uses. As agricultural land is converted to urban uses, there is a reduction in agricultural water use and an increase in urban water use. In the case of the Plan area, most agricultural land is irrigated with surface water, while rural residences use groundwater.

The Plan area consists of approximately 960 acres consisting of planned land uses of low density residential, high density residential, commercial, industrial, and schools and parks. Utilizing unit water demands as presented in the City of Ceres Water System Hydraulic Model Update, a preliminary average demand of 1,165 gallons per minute (gpm) is estimated as the water demand associated with these uses. Using a maximum day and peak hour peaking factor, the maximum day demand for buildout of the Plan is estimated at 2,097 gpm and peak hour demand is estimated at 3,204 gpm.<sup>10</sup>

The Plan provides for the provision of up to four wells and storage tank(s) as required to meet the newly generated demand in the Plan area. The wells are presumed to yield an average of 700 gpm each. Two water storage tanks, totaling 4.22 million gallons of capacity are tentatively proposed to meet peak demands and fire flow demands.<sup>11</sup> The backbone water system plan is shown in **Figure 3.7**.

In addition, a reclaimed water system has been included in the Plan for irrigation of landscape areas. However, the City of Ceres does not currently implement a reclaimed water system in or near the Plan area, so the system can not be implemented at this time. However, the reclaimed water mains can be used to send water from agricultural wells to the various park sites, until such time as reclaimed water is available as a water source.

Per the Water Supply Assessment prepared to satisfy SB 610 for the West Landing Specific Plan, the existing groundwater supply has sufficient annual capacity for the proposed project as well as anticipated development of Ceres through build-out of the Plan area.<sup>12</sup> However, the productivity of individual wells and quality of groundwater varies by location. Well tests will be performed to determine the best locations for the new Plan area wells and the required level of treatment. The water system must be able to provide constant pressure at high enough levels to maintain fire flows. The City of Ceres is currently reviewing the cost effectiveness of incorporating a surface water source to supplement continued expansion of the City's well field. The benefits of a surface water source is to avoid the increasing levels of ground water contamination and the continuing reduction in allowable contaminant levels that are increasing the cost of treating ground water.

The City of Ceres is installing water meters at every residence in 2010, and such meters will be required for new development. City staff expects a fifteen to twenty percent reduction in per capita use once the meters are installed and metered rates become effective in 2011. As such, the projected demand in this report is conservative, as a 15 to 20 percent reduction in per capita water use could

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<sup>10</sup> City of Ceres, West Landing Specific Plan, prepared by Wood Rodgers, August 2010, p. 9-11.

<sup>11</sup> City of Ceres, West Landing Specific Plan, prepared by Wood Rodgers, August 2010, p. 9-12.

<sup>12</sup> City of Ceres, Water Supply Assessment, City of Ceres, West Ceres [Landing] Specific Plan, prepared by Tim Durbin and Claire Velayas, February 2010, p.15.

result in a town like Ceres of approximately 40,000 people, creating capacity in the existing water system for 6,000 to 8,000 people just through these water conservation measures. Regardless, this EIR analyzes the project water demands as if the project provides full capacity for its new water demand and takes no credit for this reduction.<sup>13</sup>

### Mitigation Measure

**Util-1:** **Plan Area Supply.** Prior to issuance of building permits, applicants of development projects in the Plan area shall demonstrate adequate capacity and pressure from new well(s) (and/or a surface water source), storage tank(s) and related infrastructure will be available to support the development proposed while providing water at required pressure. New wells must be permitted to operate by the State of California Department of Public Health with water meeting State Title 22 drinking water standards. In addition, all new water connections will be metered by equipment compatible with the City's anticipated remote read metering system to be implemented in 2010.

With implementation of mitigation measure Util-1, the proposed Specific Plan would fully offset its annual and peak demand for water, reducing the impact to a *less than significant* level.

### Interfere with Existing Wells

**Impact Util-2:** **Interference With Existing Wells.** Drawdown from new wells could lower the groundwater table in the immediate vicinity, which could interfere with the operation of other existing local wells.

Four new wells are proposed to meet demand generated under the Plan. The water plan, including final sizing and locations of wells, will need to be verified by a qualified engineer and reviewed by the City Engineer. While unlikely if properly located, it is theoretically possible that the proposed wells could interfere with operation of other existing local wells. Again, while not anticipated, drawdown from the new wells could lower the groundwater table in the immediate vicinity, which could cause agricultural or domestic wells located in the vicinity that draw from the same portion of the aquifer to become less efficient (see also discussion of groundwater aquifer capacity in Chapter 12, Hydrology). Ultimately, existing private wells in the Plan area would need to be removed and water service transitioned to the Ceres Public Works Department services as development occurs. However, interim impacts to existing wells could arise over the development period.

### Mitigation Measure

**Util-2a:** **Test Wells.** Prior to approval of any Tentative Map, the location of the new wells shall be determined based on the results of test wells. When siting the new wells, consideration shall be given to the location of other existing wells, the source of groundwater for those wells, the anticipated cone of depression of the new wells, and other factors that could affect operation of other wells. The new wells shall be sited so that groundwater extraction does not result in localized groundwater drawdown that will substantially reduce the production rate of existing nearby wells to a level that would not support existing land uses beyond the reasonable life-cycle expectancy and long-term productivity of those wells in the absence of the proposed Specific Plan or Mitigation Measure Util-2b shall be applicable.

<sup>13</sup> City of Ceres, Water Supply Assessment, City of Ceres, West Ceres [Landing] Specific Plan, prepared by Tim Durbin and Claire Velayas, February 2010, p.15.

### Mitigation Measure

**Util-2b:** **Rectify Impacts to Local Wells.** If a property owner demonstrates that the new well has substantially reduced the production rate of an existing private well that was installed prior to proposed Specific Plan development to a level that would not support existing land uses beyond the reasonable life-cycle expectancy and long-term productivity of that well in the absence of the proposed Specific Plan, the applicant shall replace the affected well, improve the well, provide connections to municipal water lines, or mitigate by other means, as appropriate. The option of connection to municipal water lines is only allowed for existing urban uses, and not for agricultural uses.

Implementation of mitigation measures Util-2a and Util-2b would reduce the impact to a *less than significant* level through ensuring that new wells do not adversely affect the productivity of nearby wells, if any, so that the agricultural and rural residential uses within and near the plan area will remain viable. As these areas are developed with urban uses, they would receive Ceres Public Works Department water, and their wells would be inactivated.

### Construction of New Water Infrastructure

Construction of the new wells and infrastructure required to serve the Plan area has been analyzed as part of the Project. Construction would generate air emissions, erosion and noise, which are analyzed and mitigated in the relevant chapters of this EIR. No off-site facilities or connections would be proposed to serve the Plan area, though off-site wells within the system could be an option if production or quality projections are determined to be inaccurate. This impact would be *less than significant*.

### Cumulative Water Impacts and Mitigation Measures

The WSA concludes that there is sufficient groundwater in the basin, provided water quality is maintained through treatment, to maintain supply even during future drought conditions..<sup>14</sup>

The proposed Specific Plan will satisfy Plan area demand for water through construction of new wells and/or provide for their share of a surface water source.

The City of Ceres is negotiating an agreement to receive surface water from TID to supplement the groundwater supply with 6 million gallons per day of surface water from Don Pedro Dam. The agreement would involve water treatment plant capacity rights and construction of new transmission/distribution infrastructure to utilize TID's surface water supply. The dual groundwater/surface water system could adequately serve the projected build-out of the City.<sup>15</sup>

Because the future supply would be adequate to serve future demand, the cumulative impact would be *less than significant*.

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<sup>14</sup> City of Ceres, Water Supply Assessment, City of Ceres, West Ceres [Landing] Specific Plan, prepared by Tim Durbin and Claire Velayas, June 3, 2009, p.15.

<sup>15</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-6.

## WASTEWATER

### SETTING

The City of Ceres' Wastewater Services Division within the Public Works Department provides wastewater services to the majority of the City. The City of Modesto provides treatment services for a small portion of the City, known as the North Ceres Sewer Area<sup>16</sup> and there are unincorporated islands within the City that are using private septic systems.

At the time of this report preparation, developed parcels within the WCSP area are currently being served by one of three means; 1) service from the City of Modesto, 2) service for the City of Ceres and 3) private septic systems.

The City of Modesto provides sewer services to the G3 Enterprises facility and a portion of the County facility to the South of Hackett Road, including the following parcels: APN's 086-015-019 (G3 ENTS Inc.), 086-015-020 (G3 ENTS Inc.), 086- 015-021(G3 ENTS Inc.), 086-015-015 (Stanislaus County), 086-015-016 (Stanislaus County) and a portion of APN 086-015-014 (Stanislaus County). These properties are being served by an existing sewer system comprised of a series of gravity sewers, pump stations, lift stations and a force main network conveying wastewater flows north to the City of Modesto WWTP. The existing commercial and industrial properties currently being served by the City of Modesto have previous agreements for service that are expected to remain in place, with service remaining unchanged.

The remainder of the County facility is currently served by an existing sewer system comprised of gravity sewers, conveying wastewater flows east to the City of Ceres WWTP including parcels: APN's 0876-015-005, 086-015-014(Portion).

The El Rematito Flea Market recently converted from a private septic system to Ceres sanitary services, with an interim pump station.

Remaining unincorporated parcels within the Plan area use private septic systems that are expected to remain active until a mechanism is in place to convert those properties to the City of Ceres public sewer system. All septic systems will need to be abandoned per local and state requirements once those properties connect to the city's wastewater system.

All newly developed properties in the Plan area west of Crows Landing Road will be served by the City of Ceres sewer facilities.

### Wastewater Collection and Treatment

The City of Ceres wastewater collection system consists of over 126 miles of pipes, 13 lift stations, cleanouts, manholes, and pumping stations to convey wastewater either the City of Modesto treatment facility located north of the Tuolumne River or to the City of Ceres' Wastewater Treatment Plant (WWTP)<sup>17</sup>, located east of the Plan area, near the intersection of East Service Road and Morgan Road.

<sup>16</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-12.

<sup>17</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-12.

The WWTP has a current physical capacity to treat 4.2 million gallons per day (mgd) and a disposal capacity of 2.4 mgd involving percolation and evaporation ponds. In addition, the City currently sends approximately 1.0 mgd, and has a contract in place to send an additional 1.0 mgd of treated wastewater to the City of Turlock for disposal. This results in an effective capacity of 4.2 mgd, since the treatment capacity is the current limiting factor. No wastewater is discharged directly to surface waters.<sup>18</sup>

The WWTP currently treats over 3.1 million gallons of wastewater per day (mgd) and is able to handle peak wastewater flows. The average wet weather flow is 3.3 mgd, well within the capacity. The peak wet weather flow is 5.5 mgd, which requires the WWTP to retain wastewater on-site until it can be treated. The WWTP has sufficient on-site capacity to retain temporary peak wet weather flows.<sup>19</sup>

## **PLANNED WASTEWATER SYSTEM IMPROVEMENTS**

### City-Wide

The existing WWTP is projected to be able to accommodate growth until 2015, not including the Project demand, at which point the City would need to expand the WWTP or obtain additional disposal capacity by contract with the City of Turlock (the existing force main has an additional 3.9 mgd capacity available, in addition to the 2 mgd already under contract).<sup>20</sup>

Long-term planning of the City's wastewater system infrastructure is necessary and anticipated to be performed in the near future. At the time of this report, the City had begun the process to prepare a Wastewater Master Plan.<sup>21</sup>

Any development and urbanization would increase wastewater demands and require adequate wastewater facilities and expansion of infrastructure to provide collection, treatment and disposal. All future development is required to connect to the City's wastewater system and fund and install necessary infrastructure.

### Plan Area

The City of Ceres' Wastewater Services Division will provide wastewater services to development in the Plan area. As development occurs, septic systems will need to be abandoned per local and state requirements once those properties connect to the city's wastewater system. The existing properties currently being served by the City of Modesto have previous agreements for service that are expected to remain in place with service unchanged.

According to the preliminary wastewater plan in the Specific Plan, sewage in the Plan area would be collected and conveyed by a combination of gravity sewer system, lift station and force mains

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<sup>18</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-12.

<sup>19</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-13.

<sup>20</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-13.

<sup>21</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp.4.0-2 and 4.0-14.

connecting to a permanent regional lift station located east of the Plan area. A sewer lift station sized to handle the entire Plan Area flow is proposed to be located west of Crows Landing Road, on the south side of W. Hackett Road, initially directing the discharge, via a new sewer force main, to an existing sewer system in Service Road but ultimately directing that flow to new gravity mains in Service Road to be installed by the Plan Area builders. Disposal will be handled at the City's Wastewater Treatment Plant (WWTP) located east of the Plan Area, near the intersection of East Service Road and Morgan Road.

## REGULATORY SETTING

### Federal and State

The owner or operator of facilities that discharge any waste to surface waters must obtain Waste Discharge Requirements (WDR) from the State Regional Water Quality Control Board (RWQCB). WDRs typically include standards for conventional pollutants, suspended solids (SS), biological oxygen demand (BOD) and nutrients. For projects that discharge directly to surface waters, WDRs must be renewed every 10 years. The Ceres WWTP does not discharge directly to surface water, so it is under self-monitored WDRs, which are generally reviewed and renewed every ten years. The City's WDR has not been reviewed in 15 years, and review by the RWQCB is anticipated within a few years.

The WWTP must comply with Title 40 of the Code of Federal Regulations (CFR) Part 503, Title 23 California Code of Regulations and standards established by the CVRWQCB that regulate disposal of biosolids.

The WWTP must also comply with Title 22 of the California Code of Regulations, which regulates the use of treated wastewater for irrigation. In most cases, only disinfected tertiary water may be used on food crops where the recycled water would come into contact with the edible portion of the crop. Disinfected secondary treatment may be used for food crops where the edible portion is produced above ground and will not come into contact with the edible portion of the crop. Lesser levels of treatment are required for other types of crops, such as orchards, vineyards and fiber crops. Standards are also prescribed for the use of treated wastewater for irrigation of parks, playgrounds, landscaping, and other non-agricultural irrigation.<sup>22</sup>

### Local

The City of Ceres General Plan contains the following policies regarding wastewater treatment:

- 4.D.1. The City shall promote reduced wastewater system demand through efficient water use by:
- a. Requiring water-conserving design and equipment in new construction;
  - b. Encouraging and retrofitting with water-conserving devices; and
  - c. Designing wastewater systems to minimize inflow and infiltration to the extent economically feasible.
- 4.D.2. The City shall prohibit on-site treatment and disposal facilities within its service area, except where such systems are deemed appropriate and will not pose health risks or risks to groundwater.

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<sup>22</sup> California Code of Regulations, Title 22, Division 4, Chapter 3, Article 3, Section 60304.

4.D.3. The City will review development proposals in the vicinity of the wastewater treatment plant site to ensure their safety and compatibility.

4.D.4. The City will investigate options for the reuse of treated wastewater.

The City's Municipal Code also has water conservation requirements (see Water Supply Regulatory Setting, above), some of which would reduce the amount of wastewater by reducing potable water use.

## WASTEWATER IMPACTS AND MITIGATION MEASURES

### Standards of Significance

The proposed Specific Plan would have a significant effect on wastewater if it would:

- Increase demand for wastewater treatment, conveyance and/or disposal to the extent that expanded and/or new facilities are required.

### Project-Specific Wastewater Impacts and Mitigation Measures

**Impact Util-3: New and Expanded Wastewater Facilities.** The proposed Specific Plan would increase demand for wastewater collection, treatment and disposal, which would require expansion of the existing wastewater collection system and treatment plant and/or construction of new facilities.

In order to determine whether the proposed Specific Plan would trigger the expansion of the WWTP, the amount of wastewater to be generated is estimated and compared to existing and planned capacity of the plant. For this analysis, it is assumed that the Proposed Specific Plan would result in a total wastewater generation of 1.61 mgd average dry weather flow (including infiltration and inflow).<sup>23</sup> The existing treatment capacity of the WWTP is 4.2 mgd, and the disposal capacity is approximately 4.4 mgd. The WWTP may be expanded on its existing site to a treatment capacity of 5.8 mgd with added treatment pond aeration on the existing site and additional disposal to Turlock.<sup>24</sup> These capacity upgrades would use the existing WWTP site and the existing Turlock disposal pipe so would not result in off-site impacts.

The WWTP is designed based on average dry weather flows (including infiltration and inflow) and includes on-site retention for associated peak flows.<sup>25</sup> The plant receives approximately 3.10 mgd at present, leaving 2.70 mgd of projected capacity. With development of the Plan area, the amount treated and discharged would increase to approximately 4.71 mgd, which would be above the current 4.2 mgd capacity of the WWTP but within the projected 5.8 mgd capacity of the plant. Infrastructure improvements in the form of additional WWTP treatment and disposal capacity, sewer line extensions, and an on-site lift station would be required to serve build-out of the Plan area. Additional demand will also be generated by other cumulative projects, also requiring additional infrastructure and capacity.

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<sup>23</sup> City of Ceres, West Landing Specific Plan, prepared by Wood Rodgers, August 2010, p. 9-3.

<sup>24</sup> City of Ceres, PFF Study- Final Report, dated November 2008, p.6-1.

<sup>25</sup> Telephone correspondence with Glenn Gebhardt, City of Ceres Public Works Director/City Engineer, March 30, 2010.

New development would be required to pay Public Facilities Fees (PFF), which are intended to fund improvements in facilities and services. Although the City's PFF study included development of the proposed Sphere of Influence, including the project area, the level of development in the Specific Plan area is modified from what was anticipated in the current General Plan. The PFF fees calculated in that study were intended to serve as interim fees until the City completes a comprehensive master plan that analyses the wastewater treatment facility expansion requirements needed for future build-out of the entire Sphere of Influence. The City is in the process of updating its Wastewater Treatment Master Plan, and once that study is complete, the City's PFF program will likely be updated as well. Development projects in the Plan area will be required to pay the PFF in place at the time of new development.

### **Mitigation Measure**

**Util-3: Demonstration of Wastewater System Capacity.** It is assumed that wastewater treatment and disposal capacity will be increased as the Plan area develops, but exact timing has yet to be proposed. Development project applicants within the Plan area shall coordinate with the City Engineer. If adequate system capacity is not available through the City of Ceres facilities, interim sewer facilities, such as "onsite" storage and/or temporary sewer service from Modesto, may be proposed by a qualified engineer and will be subject to review and approval from the City of Ceres, Department of Public Works and the City Engineer. If adequate capacity cannot be demonstrated or interim facilities approved, projects shall not proceed until capacity is available.

Development would not be allowed to proceed without coordinating with the City Engineer to ensure the availability of adequate sewer service (mitigation measure Util-3). This would prevent any potential temporary impacts that could result from development prior to planned WWTP treatment and disposal increases. With implementation of mitigation measure Util-3 and the ultimate plans identified for WWTP capacity upgrades, the project's impact related to wastewater will be reduced to a *less than significant* level .

### Cumulative Wastewater Impacts and Mitigation Measures

**Impact Util-4: Cumulative Need for New and Expanded Wastewater Facilities.** Development of the proposed Specific Plan would contribute to a cumulative increase in demand for wastewater conveyance and treatment facilities, which would require expansion of the existing wastewater treatment plant and/or construction of new facilities.

Development under the Specific Plan would be more intensive than that anticipated for the area in the 1997 General Plan. However, the City is currently reassessing its development assumptions and utilities needs with a current Sphere of Influence Boundary change supported by a Municipal Services Review (MSR). This document was being drafted during the drafting of this report and was available in administrative draft form only. It identified the need for a more comprehensive long-term Wastewater Master Plan, which would need to be completed soon.

An update long-term Wastewater Master Plan would take proposed development in the Plan area into account. However, capacity upgrades have been identified utilizing existing infrastructure and the existing WWTP that could accommodate planned growth in Ceres plus the proposed Plan area growth.<sup>26</sup> Therefore, the proposed Specific Plan would contribute to cumulative increases in

<sup>26</sup> City of Ceres, PFF Study- Final Report, dated November 2008, p.6-1.

wastewater flows and the need for new and expanded wastewater facilities and infrastructure, but this impact would be reduced through identified improvements to the wastewater system.

**Mitigation Measure Util-3** would also help reduce this impact through requiring case-by-case consideration of wastewater capacity to avoid potential temporary impacts that could result from timing of development in relation to capacity upgrades.

With implementation of identified wastewater system improvements and the project-specific mitigation measure Util-3, the cumulative impact would be considered *less than significant*.

## STORM DRAINAGE FACILITIES

### SETTING

The Plan area is essentially flat, with an average slope across the Plan area of approximately 0.15 percent resulting in surface flows that move in a roughly south-easterly direction. Most of the natural drainage courses in the Plan area have been altered by agricultural activities, and surface water flows are directed into agricultural and roadside ditches.

Existing development in the Plan area includes onsite provisions to handle the local storm drainage run-off for their property including drainage pipes and retention basins.

#### Storm Drainage System

The City of Ceres' Streets Division, within the Public Works Department, is the stormwater drainage services provider for the City. The City does not have a citywide storm drainage system, but rather several overlapping storm drainage systems that are discussed in this analysis as the storm drainage "system". The storm drainage system is composed of neighborhood collection systems, 33 detention/retention basins, approximately 100 rockwells, 41 stormwater pump station, stormwater trunks, and 27 discharge points. Water that goes into the storm drains flows directly into neighborhood park retention basins, detention ponds, Turlock Irrigation District canals, the Tuolumne River, or seeps into rockwells. Most of the stormwater is ultimately discharged into TID canals from the detention basins, which then discharge to the San Joaquin River. Discharge to the TID facilities is permitted under an agreement between the City and TID. A limited portion of the stormwater is discharged directly into the Tuolumne River or TID canals, or disposed of by percolation.<sup>27</sup>

The City's stormwater facilities have been designed to adequately handle most major storm events. Detention/retention facilities are designed for a 50-year 24-hour storm and most of the City's system operates within this standard. Some older portions of the City experience street flooding problems during major storm events.<sup>28</sup>

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<sup>27</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, p. 4.0-16.

<sup>28</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, p. 4.0-17.

## PLANNED STORM DRAINAGE SYSTEM IMPROVEMENTS

### City-Wide

A Storm Drain Study and Master Plan was conducted in 1995, but an update of the long-term planning of the City's storm drainage system infrastructure is necessary at this time to determine the major infrastructure and facilities upgrades required to support new development and to adapt to anticipated stricter stormwater quality requirements.<sup>29</sup>

Any development and urbanization would increase runoff and require adequate storm drainage facilities and improvements. All future development is required to fund and install necessary infrastructure.

### Plan Area

The Plan proposes a series of onsite retention basins, with a gravity piping network to redirect and collect stormwater from the entire Plan area then percolation and evapo-transpiration with no other form of discharge. Residential and school uses will drain to these area basins included in Plan area park sites, and the remaining uses (commercial and business park) are required to be designed to drain internally to onsite drainage retention basins. The drainage retention facilities will be sized and designed considering the concept of dual use, where portions of these basins will allow for recreational use during non-peak times. The drainage system has been designed to retain all storm water from the 100-year storm event within the Plan area; no discharge to any canal or other waterway is planned.

## REGULATORY SETTING

### Federal and State

There are no federal or State standards affecting drainage to the plan area.

### Local

#### *General Plan*

The City of Ceres General Plan contains the following goals and policies regarding storm drainage.

#### GOAL 4.E

To collect and dispose of stormwater in a manner that minimizes inconvenience to the public, minimizes potential water-related damage, and enhances the environment.

#### Policies

- 4.E.1. The City shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the city and immediately adjacent to the city in unincorporated Stanislaus County.

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<sup>29</sup> City of Ceres, Municipal Services Review / Sphere of Influence Plan, prepared by PMC, LAFCO Review Draft March 2009, pp. 4.0-17 and 4.0-18.

- 4.E.2. All drainage designs shall be in accordance with the accepted principles of civil engineering, the Stanislaus County *Storm Drainage Design Manual*, and City improvement standards.
- 4.E.3. New development shall have surface drainage disposal accommodated in one of the following ways:
  - a. Positive drainage - positive drainage to a river, stream, creek, or other natural water course.
  - b. Irrigation facility - drainage into an irrigation district facility, either by gravity or pumping, pursuant to the City - Turlock Irrigation District agreement.
  - c. Drainage ponds - ponds, either in individual lots within a subdivision or in the case of larger developments, within a depressed portion of a common area.
  - d. Drainage unit - use of french drains within depressed areas of the street right-of-way for those subdivisions or portions of subdivisions of such size that one of the solutions in subsections a, b, or c is not feasible, as determined by the City Engineer
  - e. On-site drainage - drainage retained on-site within the development.
- 4.E.4. The City shall encourage project designs that minimize drainage concentrations and impervious coverage.
- 4.E.5. The City shall require appropriate mitigation for grading activities during the rainy season to avoid sedimentation of storm drainage facilities.
- 4.E.6. The City shall require projects that have significant impacts on the quality of surface water runoff to incorporate mitigation measures for water quality impacts related to urban runoff.
- 4.E.7. Future drainage system requirements shall comply with applicable state and federal pollutant discharge requirements.
- 4.E.8. The City shall seek to minimize operational complexities and maintenance requirements of the storm drainage system.
- 4.E.9. The City shall allow stormwater detention facilities to mitigate drainage impacts and reduce storm drainage system costs. To the extent practical, stormwater detention facilities should be designed for multiple purposes, including recreational and/or stormwater quality improvement.
- 4.E.10. The City shall consider using stormwater of adequate quality to replenish the local groundwater basin, restore wetlands and riparian habitat, and irrigate agricultural lands, or as open space or recreational enhancements.
- 4.E.11. The City shall, when necessary to meet federal stormwater quality requirements, establish a storm drain utility to address these requirements on a citywide basis.

#### *Storm Drain Study and Master Plan*

The City has an adopted Storm Drain Study and Master Plan (June 21, 1995) that provides design criteria for drainage facilities. These design criteria require that the 10-year frequency design storm be used to size drainage facilities for residential development, except for retention/detention basins, which must be designed to accommodate a 50-year storm. The design criteria also require the use of best management practices (BMPs) to protect water quality, such as education, drainage swales, first

flush management, artificial wetlands, and oil-water separators.<sup>30</sup> Subsequently, the City Engineer has required the project storm drainage to accommodate a 100-year storm event.

## STORM DRAINAGE IMPACTS AND MITIGATION MEASURES

### Standards of Significance

The proposed Specific Plan would have a significant effect on stormwater if it would:

- Increase demand for storm water conveyance and/or disposal to the extent that expanded and/or new facilities are required.

### Project-Specific Drainage Impacts and Mitigation Measures

The proposed Specific Plan would urbanize a largely agricultural area, which would increase the potential for stormwater runoff. The Plan proposes an entirely on-site stormwater system that would ensure that the peak post-development flows are attenuated to the pre-development peak flows through the use of retention basins. (See also discussion of changes in peak runoff in Chapter 12, Hydrology.) Therefore, the impact on the City's storm drainage system and regional flood control facilities would be *less than significant*.

### Cumulative Drainage Impacts and Mitigation Measures

Because the Plan proposes an entirely on-site stormwater system that would ensure peak post-development flows are attenuated to the pre-development peak flows, the contribution to a cumulative impact would not be considerable and would be considered *less than significant*.

## SOLID WASTE

### SETTING

#### Solid Waste Disposal and Recycling

Solid waste disposal and recycling collection in Ceres is provided by Ceres Bertolotti Disposal, through an agreement with the City. Garbage and green waste is collected on a weekly basis and recycling is collected on a bi-weekly basis.<sup>31</sup> Collection services are funded by refuse service fees based on container sizes.

Solid waste is taken to the Stanislaus County Fink Road landfill and waste-to-energy facility. The Fink Road Landfill has a permitted total capacity of approximately 14,500,000 cubic yards, of which approximately 69 percent was remaining in 2000. The facility is permitted to receive a maximum of 2,400 tons/day.<sup>32</sup>

The Waste-to-Energy facility is a cogeneration plant, which operates under a separate permit. Appropriate types of waste are diverted to the Waste-to-Energy facility, which reduces the amount of

<sup>30</sup> Lew-Garcia-Davis, *City of Ceres Storm Drain Study & Master Plan*, June 21, 1995, page 5.9.

<sup>31</sup> City of Ceres, *Municipal Services Review / Sphere of Influence Plan*, prepared by PMC, LAFCO Review Draft March 2009, p. 4.0-19.

<sup>32</sup> California Integrated Waste Management Board, *Active Landfills Profile for Fink Road Landfill*, <http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=0&FACID=50-AA-0001>, accessed June 2009.

waste requiring landfilling. Approximately 800 to 1,200 tons per day are processed at the Fink Road landfill. Typically, most of the waste is processed by the Waste-to-Energy facility, leaving approximately 300 to 400 tons per day to be landfilled.<sup>33</sup>

In 2008, the City of Ceres disposed of 17,685 tons of residential waste and 9185.47 tons of non-residential waste, with an average weight of 109 pounds per cubic yard.<sup>34</sup>

## **PLANNED SOLID WASTE DISPOSAL AND RECYCLING**

### Plan Area

Solid waste generated from development in the Plan area will be collected by Ceres Bertolotti Disposal consistent with existing collection in the City.

## **REGULATORY SETTING**

### Federal Regulations

The federal government regulates the location, operation, design, groundwater monitoring and closure of landfills through the Resource Conservation and Recovery Act (Volume 40 of the Code of Federal Regulations, Part 258).

### State Regulations

The California Integrated Waste Management Act of 1989 (Public Resources Code 41780, also called AB 939) was designed to increase the life of landfills and conserve other resources through increased recycling. AB 939 requires counties to prepare Solid Waste Management Plans to implement AB 939, particularly the goal of diverting approximately 50 percent of solid waste by 2000. AB 939 also requires that cities and counties prepare Source Reduction and Recycling Elements (SRRE) in their General Plans. The SRRE is intended to develop programs to achieve landfill diversions goals, stimulate local recycling in manufacturing and stimulate the purchase of recycled products.

The State agency charged with the permitting of solid waste facilities is the California Integrated Waste Management Board.

### Local Regulations

The Stanislaus County Integrated Waste Management Plan (IWMP) and City of Ceres Source Reduction and Recycling Element are designed to reduce the amount of solid waste that is generated and/or requires disposal through a variety of programs, including source reduction, recycling and composting and safe transformation and land disposal of solid wastes.<sup>35</sup> The IWMP and SRRE are also intended to ensure the safe transformation and land disposal of solid waste.

### *City of Ceres General Plan*

The General Plan contains the following goal and policy addressing solid waste disposal.

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<sup>33</sup> City of Ceres, West Landing Specific Plan, prepared by Wood Rodgers, August 2010, p. 8-5.

<sup>34</sup> Telephone conversation with Kay Dunkel, Administrative Analyst, City of Ceres, March 31, 2010.

<sup>35</sup> City of Ceres, *City of Ceres General Plan*, January 1994, page 107.

## Goal 4.F

To ensure the safe and efficient disposal or recycling of solid waste generated in Ceres.

## Policies

- 4.F.1. The City shall require waste collection in all new development.
- 4.F.2. The City shall promote maximum use of solid waste source reduction, recycling, composting, and environmentally-safe transformation of wastes.
- 4.F.3. The City shall require that all new development complies with applicable provisions of the City of Ceres *Source Reduction and Recycling Element* and the Stanislaus County *Integrated Waste Management Plan*.
- 4.F.4. The City shall encourage development of regional and community-based recycling facilities in heavy commercial and industrial areas.
- 4.F.5. The City shall require screening of waste and recycling containers in commercial, industrial, and multi-family residential areas.
- 4.F.6. The City shall encourage businesses to use recycled products in their manufacturing processes and consumers to buy recycled products.
- 4.F.7. The City shall continue to work with Stanislaus County in securing additional waste disposal capacity.

**SOLID WASTE IMPACTS AND MITIGATION MEASURES**Standards of Significance

For the purposes of this EIR, the increase in solid waste is considered significant if the proposed Specific Plan would:

- Be served by a landfill with insufficient permitted capacity to accommodate the plan's solid waste disposal needs; or
- Be inconsistent with federal, state or local statutes related to solid waste.

Project-Specific Solid Waste Impacts and Mitigation Measures

Residential development in the Plan area would be expected to result in 21 tons of solid waste per day.<sup>36</sup> While the specifics of the commercial, office and business park development could result in variations to the solid waste generation and the density of that waste, an estimate of 6 pounds per one thousand square feet per day was used for this analysis. Based on this generation factor, other uses in the Plan area could generate an additional 6.2 tons of solid waste per day.<sup>37</sup>

<sup>36</sup> City of Ceres, West Landing Specific Plan, prepared by Wood Rodgers, August 2010, p. 8-5.

<sup>37</sup> California Department of Resources Recycling and Recovery website, <http://www.calrecycle.ca.gov/wastechar/wastegenrates/>, accessed March 31, 2010. A generation rate of 6 lbs/1,000 sf/day was used for commercial, office and business park uses.

Assuming that 20 to 50 percent is recycled (per the City's Source Reduction and Recycling Element (SRRE) and the County Integrated Waste Management Plan)<sup>38</sup>, the Plan area could generate between 13.6 to 21.8 tons per day. The landfill is permitted to accept 2,400 tons per day, of which it currently receives approximately 1,200 tons per day. Full build-out of the Plan area would increase that total to about 1,222 tons per day to the landfill. Therefore, the landfill could accept the additional waste generated by the proposed Specific Plan within the existing daily permit levels. As discussed in the setting, the amount to be landfilled would depend on how much waste could be processed by the Waste to Energy facility. Typically, over half of the waste received at the landfill is processed by the Waste to Energy facility, reducing the amount of waste requiring landfilling. In 2006, the City of Ceres had a 61-percent diversion rate.<sup>39</sup>

The landfill has a total remaining capacity of approximately 10 million cubic yards. The waste generated by full buildout of the Specific Plan would amount to approximately 0.67 million cubic yards per year prior to compaction, given Ceres' average 109 lbs per cubic yard weight for waste. Compacted waste in the landfill has a conversion of approximately 1.5 cubic yards per ton<sup>40</sup>, which equates to 0.015 million cubic yards per year, or up to 0.15 percent of the existing capacity in a year (assuming no recycling). Recycling efforts and the Waste to Energy facility would significantly reduce the amount of waste requiring landfilling over time. Because the Fink Road landfill has adequate capacity to serve the proposed Specific Plan, the impact is considered *less than significant*.

#### Cumulative Solid Waste Impacts and Mitigation Measures

The Fink Road landfill is permitted to accept a total of approximately 14.5 million cubic yards. Approximately 10 million cubic yards of capacity remain. If the landfill were to operate at its daily permitted capacity, 2,400 tons, or approximately 3,600 cubic yards, it would take more than 8 years to exhaust the capacity of the landfill. However, at present, most of the waste received at the landfill is processed at the Waste-to-Energy facility, with only one-third to one-half requiring landfilling. Therefore, the life of the landfill could be at least 25 years under current disposal rates. As the development increases throughout the landfill service area, the life of the landfill would be shortened. The current assumed closure date is December 2023<sup>41</sup>.

The proposed Specific Plan would contribute to the reduced lifetime of the landfill slightly. Over 20 years, the proposed Specific Plan would generate approximately 3 million cubic yards of total waste. Assuming continued recycling of at least 20% and 61% being diverted to the Waste to Energy facility, this number would be anticipated to be less than 1 million cubic yards over 20 years, which equates to approximately 1 percent of remaining landfill capacity. Therefore, the proposed Specific Plan would not contribute substantially to above-capacity increases in solid waste, and this would be a cumulatively *less than significant* impact.

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<sup>38</sup> City of Ceres, *General Plan Final Environmental Impact Report*, November 12, 1996, page 5-25.

<sup>39</sup> California Integrated Waste Management Board, Jurisdiction Diversion and Disposal Profile, California Waste Stream Profiles, Jurisdiction Profile for City of Ceres, <http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile2.asp?RG=C&JURID=616&JUR=Ceres>, accessed June 2009.

<sup>40</sup> California Integrated Waste Management Board, Active Landfills Profile for Fink Road Landfill, <http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=0&FACID=50-AA-0001>, accessed June 2009.

<sup>41</sup> California Integrated Waste Management Board, Active Landfills Profile for Fink Road Landfill, <http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=0&FACID=50-AA-0001>, accessed June 2009.