

## 3.2 Transportation

This section evaluates potential transportation impacts resulting from implementation of the proposed General Plan. This impact analysis examines the roadway, truck route, transit, bicycle/pedestrian, and rail components of the overall transportation system. Impacts are evaluated based upon a comparison between existing conditions and future conditions with buildout of the proposed General Plan.

### **ENVIRONMENTAL SETTING**

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The existing physical and regulatory conditions for the transportation system are described below. This section provides an overview of existing transportation infrastructure and services including public transit, non-motorized components, as well as current operating conditions within the Planning Area.

### **PHYSICAL SETTING**

The circulation network serving Lemoore consists of roadways, transit, bicycle and pedestrian facilities and a rail line. A description of travel characteristics, major transportation facilities and existing travel conditions is provided in the proposed General Plan; a summary of those key travel characteristics is included in this section.

The City of Lemoore is located about 26 miles east of Interstate Highway 5 at the junction of SR-198 and SR-41. There are two grade separated interchanges and two at grade intersections along SR-198 and one grade separated interchange and two at grade intersections on SR-41. Plans have been developed to modify the SR-198 intersection at 19th Avenue, just east of the SR-41 interchange to be grade separated with improvements covering the NE, NW and SE areas, and requiring the closure of the Vine Street freeway access. The San Joaquin Valley Railroad tracks run east-west through the City north of and parallel to SR-198. Currently, all existing rail service is commercial in nature and provides important connections between local businesses and the rest of California and other states. Near Downtown, a multi-modal depot has been created adjacent to the railroad tracks for future connections between local transit and possible future regional passenger rail services. Naval Air Station Lemoore (NAS Lemoore) is located directly west of the City of Lemoore.

Currently, peak hour and daily traffic conditions are within normal level of service standards throughout the City. Selected corridors do experience short periods of congestion. These periods are normally associated with school drop-off times, along roadways with restricted capacity and within short segments between major roadway intersections. Portions of Hanford-Armona Road between SR-41 and the eastern side of the City operate at Level of Service D on a daily basis. Two other segments, Cinnamon Drive east of Lemoore Avenue and south of Hanford-Armona Road, operate at substandard levels of service (E or F). Details regarding the existing system and definitions of their level of service standards are provided below.

## **Existing Roadway System**

At the core of the City's circulation network is the roadway system, and all modes of transportation depend to some degree upon it. In Lemoore, this system is based on two grid patterns, one in the historic downtown paralleling the railroad, and the other, guiding newer development, oriented generally to the compass directions north-south and east-west. Regional access is provided by SR-198 running southwest-northeast in the southern part of the City and SR-41 running north-south along the western side.

### *Regional Roadways*

SR-198 is an east-west, four-lane highway that connects to Interstate Highway 5, about 26 miles west of the City, and Visalia at SR-99 to the east. SR-198 carries about 24,000 daily trips within the City and provides local access at 19<sup>th</sup> Avenue, Vine Street (which will be eliminated in the future), south Lemoore Avenue and D Street/Houston Avenue.

SR-41 is a north-south, four-lane highway that connects with Interstate 5 to the southeast near Kettleman City and Fresno at SR-99 to the north. Daily traffic varies from about 9,250 trips per day south of SR-198 to around 14,800 trips near Hanford-Armona Road to the north. Local access is provided at Idaho Avenue (which will be closed when traffic conflicts with the highway), Bush Street, and Hanford-Armona Road.

### *Local Roadways*

Figure 3.2-1 shows the local roadway system within the City. The major east-west roadways include: Hanford-Armona Road, D Street, Cinnamon Drive, Bush Street, Iona Avenue and Idaho Avenue. The major north-south roadways include: 19<sup>th</sup> Avenue, Vine Street, Lemoore Avenue/18<sup>th</sup> Avenue and 17<sup>th</sup> Avenue. Figure 3.2-2 shows the existing directional peak hour traffic volumes along the major roadways within the City.

## **Traffic Operations Analysis Methods**

### *Level of Service*

Level of Service (LOS) is a qualitative assessment of perceived traffic conditions by motorists. LOS generally reflects driving conditions such as travel time and speed, freedom to maneuver, and traffic interruptions. LOS uses quantifiable traffic measures such as average speed, intersection control delay, and volume-to-capacity ratio to determine driver satisfaction. LOS is reported for individual intersections and is designated by a range of letter—"A" represents the most favorable conditions (free flow) and "F" represents the least favorable conditions (jammed with excessive delays). Table 3.2-1 describes the characteristics of each LOS designation. For purposes of this EIR, intersection and freeway segment LOS was analyzed. A comparison of volumes on roadway segments is included in the alternatives analysis.

To evaluate the impacts of future growth on the roadway system, both daily and peak hour traffic volumes were compared to standard roadway capacities to establish both volume to capacity ratios and resultant levels of service. The source for the peak hour traffic capacities is the Florida Department of Transportation. The Florida standards have been adopted and applied throughout the transportation planning profession as a basis for evaluating roadway levels of service. The methodology used to calculate the volume-to-capacity (V/C) ratio and levels of service are found

in the 2000 Highway Capacity Manual, published by the Institute of Transportation Engineers. The peak hour capacities are shown in Table 3.2-2. Various roadway codes have been created to define each type of roadway. Freeways are coded at FWY with 4 or 6 travel lanes. Rural Highways, which are not freeways but allow limited access are coded as RurHwy with 2 or 4 lanes. Arterial streets are either Urban (UrbArt) or Rural (RurArt) in character. Finally, Collector streets are coded as Coll. The Florida Department of Transportation uses these designations to define different roadways with roadway widths, median, spacing of signalized intersections and other characteristics to establish appropriate peak hour capacities for each facility type.

**Table 3.2-1 Qualitative Description of Level of Service**

| <i>Level of Service</i> | <i>Driver's Perception</i>                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A / B                   | LOS A/B are characterized by light congestion. Motorists are generally able to maintain desired speeds on two and four lane roads and make lane changes on four lane roads. Motorists are still able to pass through traffic-controlled intersections in one green phase. Stop-controlled approach motorists begin to notice absence of available gaps.                                                                                                         |
| C                       | LOS C represents moderate traffic congestion. Average vehicle speeds continue to be near the motorist's desired speed for two and four lane roads. Lane change maneuvers on four lane roads increase to maintain desired speed. Turning traffic and slow vehicles begin to have an adverse impact on traffic flows. Occasionally, motorists do not clear the intersection on the first green phase.                                                             |
| D                       | LOS D is characterized by congestion with average vehicle speeds decreasing below the motorist's desired level for two and four lane roads. Lane change maneuvers on four lane roads are difficult to make and adversely affect traffic flow like turning traffic and slow vehicles. Multiple cars must wait through more than one green phase at a traffic signal. Stop-controlled approach motorists experience queuing due to a reduction in available gaps. |
| E                       | LOS E is the lowest grade possible without stop-and-go operations. Driving speeds are substantially reduced and brief periods of stop-and-go conditions can occur on two and four lane roads and lane changes are minimal. At signalized intersections, long vehicle queues can form waiting to be served by the signal's green phase. Insufficient gaps on the major streets cause extensive queuing on the stop-controlled approaches.                        |
| F                       | LOS F represents stop-and-go conditions for two and four lane roads. Traffic flow is constrained and lane changes minimal. Drivers at signalized intersections may wait several green phases prior to being served. Motorists on stop-controlled approaches experience insufficient gaps of suitable size to cross safely through a major traffic stream.                                                                                                       |

Source: *Dowling Associates, 2007; 2000 Highway Capacity Manual.*

**Table 3.2-2 Peak Hour Level of Service Criteria for Roadway Segments in Lemoore**

## Facility Capacity Volumes

| Facility Class | Code    | One Direction |           |  | LOS A | LOS B | LOS C | LOS D | LOS E |
|----------------|---------|---------------|-----------|--|-------|-------|-------|-------|-------|
|                |         | Lanes         | Area Type |  |       |       |       |       |       |
| Freeway        | Fwy4    | 2             | All       |  | 1,290 | 2,130 | 2,890 | 3,420 | 3,800 |
| Freeway        | Fwy6    | 3             | All       |  | 2,000 | 3,290 | 4,460 | 5,280 | 5,870 |
| Rural Highway  | RurHwy2 | 1             | Rural     |  | 100   | 330   | 620   | 870   | 1,200 |
| Rural Highway  | RurHwy4 | 2             | Rural     |  | 980   | 1,590 | 2,300 | 2,980 | 3,390 |
| Arterial       | RurArt2 | 1             | Rural     |  | 72    | 120   | 590   | 740   | 800   |
| Arterial       | UrbArt2 | 1             | Urban     |  | 77    | 100   | 590   | 810   | 850   |
| Arterial       | RurArt4 | 2             | Rural     |  | 166   | 290   | 1,360 | 1,570 | 1,660 |
| Arterial       | UrbArt4 | 2             | Urban     |  | 162   | 220   | 1,360 | 1,710 | 1,800 |
| Collector      | Coll2   | 1             | All       |  | 73    | 97    | 480   | 760   | 810   |
| Collector      | Coll4   | 2             | All       |  | 138   | 224   | 1,120 | 1,620 | 1,720 |

## Per Lane Capacity Volumes

| Facility Class | Code    | Single Lane | Area Type | LOS A | LOS B | LOS C | LOS D | LOS E |
|----------------|---------|-------------|-----------|-------|-------|-------|-------|-------|
| Freeway        | Fwy4    | 1           | All       | 645   | 1065  | 1,445 | 1,710 | 1,900 |
| Freeway        | Fwy6    | 1           | All       | 667   | 1097  | 1,487 | 1,760 | 1,957 |
| Rural Highway  | RurHwy2 | 1           | Rural     | 100   | 330   | 620   | 870   | 1,200 |
| Rural Highway  | RurHwy4 | 1           | Rural     | 490   | 795   | 1,150 | 1,490 | 1,695 |
| Arterial       | RurArt2 | 1           | Rural     | 72    | 120   | 590   | 740   | 800   |
| Arterial       | UrbArt2 | 1           | Urban     | 77    | 100   | 590   | 810   | 850   |
| Arterial       | RurArt4 | 1           | Rural     | 83    | 145   | 680   | 785   | 830   |
| Arterial       | UrbArt4 | 1           | Urban     | 81    | 110   | 680   | 855   | 900   |
| Collector      | Coll2   | 1           | All       | 73    | 97    | 480   | 760   | 810   |
| Collector      | Coll4   | 1           | All       | 69    | 112   | 560   | 810   | 860   |

## V/C Ratios as function of LOS E/F

| Facility Class | Code    | Both Direction |           |  | LOS A | LOS B | LOS C | LOS D | LOS E |
|----------------|---------|----------------|-----------|--|-------|-------|-------|-------|-------|
|                |         | Lanes          | Area Type |  |       |       |       |       |       |
| Freeway        | Fwy4    | 4              | All       |  | 0.34  | 0.56  | 0.76  | 0.9   | I     |
| Freeway        | Fwy6    | 6              | All       |  | 0.34  | 0.56  | 0.76  | 0.9   | I     |
| Rural Highway  | RurHwy2 | 2              | Rural     |  | 0.08  | 0.28  | 0.52  | 0.73  | I     |
| Rural Highway  | RurHwy4 | 4              | Rural     |  | 0.29  | 0.47  | 0.68  | 0.88  | I     |
| Arterial       | RurArt2 | 2              | Rural     |  | 0.09  | 0.15  | 0.74  | 0.93  | I     |
| Arterial       | UrbArt2 | 2              | Urban     |  | 0.09  | 0.12  | 0.69  | 0.95  | I     |
| Arterial       | RurArt4 | 4              | Rural     |  | 0.1   | 0.17  | 0.82  | 0.95  | I     |
| Arterial       | UrbArt4 | 4              | Urban     |  | 0.09  | 0.12  | 0.76  | 0.95  | I     |
| Collector      | Coll2   | 2              | All       |  | 0.09  | 0.12  | 0.59  | 0.94  | I     |
| Collector      | Coll4   | 4              | All       |  | 0.08  | 0.13  | 0.65  | 0.94  | I     |

Source: Dowling Associates, 2007.

Figure 3.2-1: Existing Roadway System

Figure 3.2-1 back

Figure 3.2-2: Existing Volumes

Figure 3.2-2 back

*Roadway Segments*

To determine the impacts of buildout of the proposed General Plan, a series of roadway segments were selected for analysis. These roadways represent the major highways, arterials and collectors in the City. Some additional collector roads were also included to address potential impacts within the proposed newer development areas. The analysis segments are listed in Table 3.2-3.

**Table 3.2-3 Analysis Roadway Segments**

| <i>Roadways</i>             | <i>Segment</i>                                                                              |
|-----------------------------|---------------------------------------------------------------------------------------------|
| Bush Street                 | Western Terminus to D Street (W)<br>Fox Street to D Street (E)                              |
| D Street                    | Bush Street (W) to SR-198 EB ramps                                                          |
| Hanford-Armona Road         | Belle Haven Drive to Liberty Drive<br>Fox Street to Cinnamon Drive                          |
| Cinnamon Drive              | 19 <sup>th</sup> 1/2 Avenue to 19 <sup>th</sup> Avenue<br>Fox Street to Hanford-Armona Road |
| 19 <sup>th</sup> 1/2 Avenue | Cinnamon Drive to Silverado Drive                                                           |
| 19 <sup>th</sup> Avenue     | Enterprise Drive to Lacey Boulevard                                                         |
| Fox Street                  | Bush Street to Hanford-Armona Road                                                          |
| Lemoore Avenue              | Golf Links Drive to Hanford-Armona Road                                                     |
| SR-(SH) 41                  | Idaho Avenue to Hanford-Armona Road                                                         |
| SR-(SH) 198                 | 21 <sup>st</sup> Street/Marsh Drive to D Street                                             |
| Liberty Drive/18 ¾ Avenue   | Cinnamon Drive to Lacey Boulevard                                                           |
| Daphne Extension            | D Street - Cinnamon Drive                                                                   |
| Cedar Lane                  | Vine Street - Lemoore Avenue                                                                |
| Cedar Lane Extension        | 19 <sup>th</sup> 1/2 Avenue - Pedersen Avenue                                               |
| Belle Haven Realignment     | Bush Street - Hanford-Armona Road                                                           |
| Semas Drive                 | Bush Street to Marsh Drive                                                                  |
| College Drive               | Bush Street - Hanford-Armona Road                                                           |
| Marsh Drive                 | SR-198 - Semas Drive                                                                        |
| 21 <sup>st</sup> Avenue     | Idaho Avenue to Jackson Avenue                                                              |
| Jackson Avenue              | 21 <sup>st</sup> Avenue to SR-41                                                            |
| Marsh Drive                 | Semas Drive to Bush Street                                                                  |
| Iona Avenue                 | 19 <sup>th</sup> Avenue to 18 <sup>th</sup> Avenue                                          |
| Follett Street              | Cinnamon Drive to RR Tracks                                                                 |
| Silverado Avenue            | 19 <sup>th</sup> ½ Avenue to 19 <sup>th</sup> Avenue                                        |
| Pedersen Avenue             | Semas Drive to Marsh Drive                                                                  |

*Source: Dowling Associates, 2007.*

These roadways have characteristics, which are used to define a specific classification for each segment. These classifications are defined below.

*Highways.* Highways are designed to carry heavy traffic volumes at speeds of 40-65 miles per hour and link the City with other nearby urban areas. Lemoore is bisected by two highways – SR-198 in an east-west direction and SR-41 in a north-south direction. On both highways, access is limited, crossings are generally signalized at grade or grade-separated, parking is not allowed, and a continuous median separates lanes moving in opposite directions. On SR-198 between the City of Hanford to Lemoore Avenue exit, a concrete wall separates eastbound and westbound traffic. In the near future, Caltrans anticipates continuing the wall to the Lemoore Naval Air Station.

*Arterial Streets.* Arterial streets are designed to move large volumes of traffic between highways and other arterials in Lemoore and to adjacent jurisdictions. Major arterials are access controlled roadways emphasizing mobility between major portions of the City and to regional freeways and highways. The only major arterial the City has is on a portion of Hanford-Armona Road from Blake Street (near Lemoore Avenue) to the Lemoore Canal. Minor arterials provide mobility through the City and access to major residential, employment, and activity centers. On-street parking should not be provided on major arterials but may be appropriate for minor arterials that emphasize accessibility over mobility. Minor arterials should provide two lanes and striped bike lanes in each direction of travel. Where inadequate room exists to stripe bike lanes in the street, large sidewalks should be installed to protect children walking or bicycling to school. Driveway access should be minimized, consistent with the primary function of arterials to move through traffic. Landscaped parkway strips, sidewalks, and transit facilities may also be accommodated within the right-of-way of minor arterials, depending on the right-of-way width. The design of existing arterials varies from 70 to 109 feet in right-of-way with different fetures and distances based on the time frame constructed. Where older streets cannot accommodate parkways, street trees should be planted in tree wells within sidewalks while maintaining adequate handicapped access. (Lemoore Avenue is a perfect example of a street with challenges.) Lemoore Avenue, 19th Avenue, Bush Street, D Street, Belle Haven Drive, Iona Avenue, College Drive, Pedersen Avenue, Marsh Drive, Semas Drive (which is also a parkway) and portions of Hanford-Armona Road are examples of this category.

*Median Parkways.* Median Parkways are designed to provide a scenic and pastoral driving experience. It is a street that has full or partial access control, divided by a wide, landscaped median with trees. It is usually located adjacent to residential neighborhoods or extremely wide roadways segments, and prohibits trucks or commercial vehicles on many segments. Buses are not considered commercial vehicles in this case. All of Cedar Lane, Golf Links Drive, and the proposed Semas Drive falls under this category of street system as well as portions of Hanford-Armona Road, Fox Street, and Bush Street.

*Collector Streets.* Collector streets provide a link between neighborhood streets and arterials. Collectors provide two through travel lanes, in addition to any bike lanes where called for in the bikeway plan. In fact, all collectors should be designed to include bicycle lanes. On-street parking may be provided if sufficient width is available. Collectors also provide access to adjacent properties, so driveway access should be discouraged but need not be restricted (subject to accepted engineering practices). Bike lanes, landscaped parkway strips, sidewalks, and transit facilities may also be accommodated depending on the right-of-way available. Collector Streets include Hanford-Armona Road, west of Belle Haven Drive, Industry Way, Cinnamon Drive, Cedar Lane, 19th ½ Avenue, Liberty Drive, Fox Street, Follett Street, Daphane Lane as well as the three proposed collectors (2 north-south and 1 east-west) in the north-easterly part of the City.

*Local Streets.* The primary function of local streets is to provide direct access to adjacent properties. Local streets should provide two travel lanes, landscaped parkway strips, and sidewalks. On-street parking may be restricted if needed. Bike lanes are usually not needed because these streets carry low traffic volumes and all are considered to be bicycle friendly.

*Rural Streets.* Rural streets are not a technical classification. However, the City uses this term to describe streets that are outside of or near the edge of the Urban Growth Boundary or Planning Area or can be located in very low density residential neighborhoods. Along the urban/rural edge, some collector and arterial streets have been designated to gain adequate right-of-way but should use rural edge road treatments. Rural Streets typically have two travel lanes without curbs or gutters and have little or no lighting. The only exception would be Marsh Drive, which is anticipated to contain four travel lanes and other City improvements on one side of the street.

**Intersections**

Intersections are not being evaluated as part of this EIR. Rather, roadway segments are the focus of the analysis, which is appropriate for a program-level General Plan EIR. Several locations where major changes in the roadway traffic demand that results in roadway widening will also require the consideration of traffic signal installation and/or modifications. Specific locations where these impacts may occur are discussed in the traffic impact section.

**Roadway Segment Operations**

*Local Roadways*

Table 3.2-4 provides the existing volume/capacity (v/c) ratios and resultant peak hour levels of service for all of the existing local roadway segments evaluated for this EIR. No segments currently operate at unacceptable levels of service under existing conditions.

**Table 3.2-4 Existing Local Roadway V/C ratios and Peak Hour Levels of Service**

| Segment Descriptions |                 |                     | Direction | Existing Lanes and Capacities |       |              | Existing Peak Hour V/C Ratio |      | Existing Level Of Service (LOS) |    |
|----------------------|-----------------|---------------------|-----------|-------------------------------|-------|--------------|------------------------------|------|---------------------------------|----|
| RoadName             | Segment Limit   | Segment Limit       |           | Class                         | Lanes | Turn Pockets | AM                           | PM   | AM                              | PM |
| 19th Avenue          | Idaho Avenue    | Iona Avenue         | NB        | UrbArt2                       | 1     | none         | 0.00                         | 0.01 | A                               | A  |
|                      | Idaho Avenue    | Iona Avenue         | SB        | UrbArt2                       | 1     | none         | 0.02                         | 0.01 | A                               | A  |
|                      | Iona Avenue     | SR-198 EB ramps     | NB        | UrbArt2                       | 1     | n/a          | 0.02                         | 0.03 | A                               | A  |
|                      | Iona Avenue     | SR-198 EB ramps     | SB        | UrbArt2                       | 1     | n/a          | 0.06                         | 0.03 | A                               | A  |
|                      | SR-198 EB ramps | SR-198 WB ramps     | NB        | UrbArt2                       | 1     | n/a          | 0.20                         | 0.31 | C                               | C  |
|                      | SR-198 EB ramps | SR-198 WB ramps     | SB        | UrbArt2                       | 1     | n/a          | 0.09                         | 0.07 | B                               | A  |
|                      | SR-198 WB ramps | Cedar Lane          | NB        | UrbArt2                       | 1     | 1 left turn  | 0.13                         | 0.20 | C                               | C  |
|                      | SR-198 WB ramps | Cedar Lane          | SB        | UrbArt2                       | 1     | 1 left turn  | 0.25                         | 0.11 | C                               | B  |
|                      | Cedar Lane      | Bush Street         | NB        | UrbArt2                       | 1     | none         | 0.20                         | 0.39 | C                               | C  |
|                      | Cedar Lane      | Bush Street         | SB        | UrbArt2                       | 1     | none         | 0.29                         | 0.39 | C                               | C  |
|                      | Bush Street     | Cinnamon Drive      | NB        | UrbArt2                       | 1     | 1 left turn  | 0.21                         | 0.32 | C                               | C  |
|                      | Bush Street     | Cinnamon Drive      | SB        | UrbArt2                       | 1     | 1 left turn  | 0.27                         | 0.33 | C                               | C  |
|                      | Cinnamon Drive  | Hanford-Armona Road | NB        | UrbArt2                       | 1     | 1 left turn  | 0.12                         | 0.23 | C                               | C  |

**Table 3.2-4 Existing Local Roadway V/C ratios and Peak Hour Levels of Service**

| Segment Descriptions    |                   |                     | Direction | Existing Lanes and Capacities |       |              | Existing Peak Hour V/C Ratio |      | Existing Level Of Service (LOS) |    |
|-------------------------|-------------------|---------------------|-----------|-------------------------------|-------|--------------|------------------------------|------|---------------------------------|----|
| RoadName                | Segment Limit     | Segment Limit       |           | Class                         | Lanes | Turn Pockets | AM                           | PM   | AM                              | PM |
|                         | Cinnamon Drive    | Hanford-Armona Road | SB        | UrbArt2                       | 1     | none         | 0.08                         | 0.16 | A                               | C  |
|                         | Hanford-Armona    | Lacey Boulevard     | NB        | UrbArt2                       | 0     | n/a          | 0.00                         | 0.00 | A                               | A  |
|                         | Hanford-Armona    | Lacey Boulevard     | SB        | UrbArt2                       | 0     | n/a          | 0.00                         | 0.00 | A                               | A  |
| 19th 1/2 Avenue         | Bush Street       | Cinnamon Drive      | NB        | Coll4                         | 2     | none         | 0.12                         | 0.06 | B                               | A  |
|                         | Bush Street       | Cinnamon Drive      | SB        | Coll4                         | 2     | none         | 0.07                         | 0.11 | A                               | B  |
|                         | Silverado Drive   | Bush Street         | NB        | Coll2                         | 1     | none         | 0.16                         | 0.01 | C                               | A  |
|                         | Silverado Drive   | Bush Street         | SB        | Coll2                         | 1     | none         | 0.00                         | 0.12 | A                               | C  |
| 21st Avenue             | Idaho Avenue      | SR-198              | NB        | UrbArt2                       | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                         | Idaho Avenue      | SR-198              | SB        | UrbArt2                       | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                         | Jackson Avenue    | Idaho Avenue        | NB        | UrbArt2                       | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                         | Jackson Avenue    | Idaho Avenue        | SB        | UrbArt2                       | 0     | none         | 0.00                         | 0.00 | A                               | A  |
| Belle Haven Realignment | Bush Street       | Hanford-Armona Road | NB        | UrbArt2                       | 1     | none         | 0.01                         | 0.00 | A                               | A  |
|                         | Bush Street       | Hanford-Armona Road | SB        | UrbArt2                       | 1     | none         | 0.01                         | 0.01 | A                               | A  |
| Bush Street             | SR-41 NB ramps    | SR-41 SB ramps      | WB        | UrbArt4                       | 2     | 1 left turn  | 0.25                         | 0.13 | C                               | C  |
|                         | SR-41 NB ramps    | SR-41 SB ramps      | EB        | UrbArt2                       | 1     | 1 left turn  | 0.22                         | 0.29 | C                               | C  |
|                         | SR-41 SB ramps    | Belle Haven Drive   | WB        | UrbArt4                       | 2     | 1 left turn  | 0.17                         | 0.10 | C                               | B  |
|                         | SR-41 SB ramps    | Belle Haven Drive   | EB        | UrbArt2                       | 1     | none         | 0.19                         | 0.25 | C                               | C  |
|                         | Belle Haven Drive | Semas Drive         | WB        | UrbArt2                       | 1     | none         | 0.29                         | 0.14 | C                               | C  |
|                         | Belle Haven Drive | Semas Drive         | EB        | UrbArt2                       | 1     | none         | 0.11                         | 0.19 | B                               | C  |
|                         | Semas Drive       | College Drive       | WB        | UrbArt2                       | 1     | none         | 0.30                         | 0.12 | C                               | C  |
|                         | Semas Drive       | College Drive       | EB        | UrbArt2                       | 1     | none         | 0.09                         | 0.23 | B                               | C  |
|                         | West of College   | Terminus of Bush    | WB        | UrbArt2                       | 1     | none         | 0.12                         | 0.06 | C                               | A  |
|                         | West of College   | Terminus of Bush    | EB        | UrbArt2                       | 1     | none         | 0.04                         | 0.09 | A                               | B  |
|                         | SR-41 NB ramps    | 19th 1/2 Avenue     | WB        | UrbArt4                       | 2     | none         | 0.24                         | 0.13 | C                               | C  |
|                         | SR-41 NB ramps    | 19th 1/2 Avenue     | EB        | UrbArt2                       | 1     | 1 left turn  | 0.38                         | 0.31 | C                               | C  |
|                         | 19th 1/2 Avenue   | 19th Avenue         | WB        | UrbArt2                       | 1     | 1 left turn  | 0.25                         | 0.13 | C                               | C  |
|                         | 19th 1/2 Avenue   | 19th Avenue         | EB        | UrbArt2                       | 1     | 1 left turn  | 0.17                         | 0.16 | C                               | C  |
|                         | 19th Avenue       | Lemoore Avenue      | WB        | UrbArt4                       | 2     | 1 left turn  | 0.19                         | 0.14 | C                               | C  |
|                         | 19th Avenue       | Lemoore Avenue      | EB        | UrbArt4                       | 2     | 1 left turn  | 0.07                         | 0.13 | A                               | C  |
|                         | Lemoore Avenue    | East D Street       | WB        | UrbArt2                       | 1     | none         | 0.06                         | 0.16 | A                               | C  |
| Lemoore Avenue          | East D Street     | EB                  | UrbArt2   | 1                             | none  | 0.27         | 0.12                         | C    | C                               |    |
| Cedar Lane              | 19th 1/2 Avenue   | Lemoore Avenue      | WB        | Coll2                         | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                         | 19th 1/2 Avenue   | Lemoore Avenue      | EB        | Coll2                         | 0     | none         | 0.00                         | 0.00 | A                               | A  |
| Cedar Lane Extension    | 19th 1/2 Avenue   | Pedersen Avenue     | WB        | Coll2                         | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                         | 19th 1/2 Avenue   | Pedersen Avenue     | EB        | Coll2                         | 0     | none         | 0.00                         | 0.00 | A                               | A  |
| Cinnamon Drive          | 19th 1/2 Avenue   | 19th Avenue         | WB        | Coll2                         | 1     | none         | 0.14                         | 0.14 | C                               | C  |
|                         | 19th 1/2 Avenue   | 19th Avenue         | EB        | Coll2                         | 1     | none         | 0.16                         | 0.20 | C                               | C  |
|                         | 19th Avenue       | Fox Street          | WB        | Coll2                         | 1     | 1 left turn  | 0.32                         | 0.30 | C                               | C  |
|                         | 19th Avenue       | Fox Street          | EB        | Coll2                         | 1     | 1 left turn  | 0.40                         | 0.32 | C                               | C  |
|                         | Fox Street        | Lemoore Avenue      | WB        | Coll2                         | 1     | 1 left turn  | 0.41                         | 0.47 | C                               | C  |

**Table 3.2-4 Existing Local Roadway V/C ratios and Peak Hour Levels of Service**

| Segment Descriptions |                   |                     | Existing Lanes and Capacities |         |       |              | Existing Peak Hour V/C Ratio |      | Existing Level Of Service (LOS) |    |
|----------------------|-------------------|---------------------|-------------------------------|---------|-------|--------------|------------------------------|------|---------------------------------|----|
| RoadName             | Segment Limit     | Segment Limit       | Direction                     | Class   | Lanes | Turn Pockets | AM                           | PM   | AM                              | PM |
|                      | Fox Street        | Lemoore Avenue      | EB                            | Coll2   | 1     | 1 left turn  | 0.30                         | 0.44 | C                               | C  |
|                      | Lemoore Avenue    | Daphne Lane         | WB                            | Coll2   | 1     | none         | 0.55                         | 0.45 | C                               | C  |
|                      | Lemoore Avenue    | Daphne Lane         | EB                            | Coll2   | 1     | none         | 0.18                         | 0.46 | C                               | C  |
|                      | Daphne Lane       | Hanford-Armona      | NB                            | Coll2   | 1     | none         | 0.23                         | 0.53 | C                               | C  |
|                      | Daphne Lane       | Hanford-Armona      | SB                            | Coll2   | 1     | none         | 0.43                         | 0.44 | C                               | C  |
| College Drive        | Bush Street       | Hanford-Armona Road | NB                            | UrbArt2 | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                      | Bush Street       | Hanford-Armona Road | SB                            | UrbArt2 | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                      | Pedersen Avenue   | Bush Street         | NB                            | UrbArt2 | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                      | Pedersen Avenue   | Bush Street         | SB                            | UrbArt2 | 0     | none         | 0.00                         | 0.00 | A                               | A  |
| D Street             | West Bush Street  | 19th Avenue         | WB                            | UrbArt2 | 1     | none         | 0.01                         | 0.00 | A                               | A  |
|                      | West Bush Street  | 19th Avenue         | EB                            | UrbArt2 | 1     | none         | 0.01                         | 0.00 | A                               | A  |
|                      | 19th Avenue       | Fox Street          | WB                            | UrbArt4 | 2     | none         | 0.01                         | 0.01 | A                               | A  |
|                      | 19th Avenue       | Fox Street          | EB                            | UrbArt4 | 2     | none         | 0.00                         | 0.01 | A                               | A  |
|                      | Fox Street        | Lemoore Avenue      | WB                            | UrbArt2 | 1     | 1 left turn  | 0.02                         | 0.02 | A                               | A  |
|                      | Fox Street        | Lemoore Avenue      | EB                            | UrbArt2 | 1     | 1 left turn  | 0.00                         | 0.03 | A                               | A  |
|                      | Lemoore Avenue    | Smith Street        | WB                            | UrbArt2 | 1     | none         | 0.11                         | 0.04 | B                               | A  |
|                      | Lemoore Avenue    | Smith Street        | EB                            | UrbArt2 | 1     | none         | 0.06                         | 0.08 | A                               | A  |
|                      | Smith Street      | 17th Avenue         | WB                            | UrbArt2 | 1     | none         | 0.16                         | 0.20 | C                               | C  |
|                      | Smith Street      | 17th Avenue         | EB                            | UrbArt2 | 1     | none         | 0.34                         | 0.19 | C                               | C  |
|                      | 17th Avenue       | SR-198 EB ramps     | WB                            | UrbArt2 | 1     | none         | 0.38                         | 0.39 | C                               | C  |
|                      | 17th Avenue       | SR-198 EB ramps     | EB                            | UrbArt2 | 1     | none         | 0.45                         | 0.32 | C                               | C  |
| Daphne Extension     | D Street          | Cinnamon Drive      | NB                            | Coll2   | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                      | D Street          | Cinnamon Drive      | SB                            | Coll2   | 0     | none         | 0.00                         | 0.00 | A                               | A  |
| Follett Street       | Cinnamon Drive    | RR Tracks           | NB                            | Coll2   | 1     | none         | 0.02                         | 0.02 | A                               | A  |
|                      | Cinnamon Drive    | RR Tracks           | SB                            | Coll2   | 1     | none         | 0.03                         | 0.00 | A                               | A  |
|                      | RR Tracks         | Bush Street         | NB                            | Coll2   | 1     | none         | 0.00                         | 0.00 | A                               | A  |
|                      | RR Tracks         | Bush Street         | SB                            | Coll2   | 1     | none         | 0.00                         | 0.00 | A                               | A  |
| Fox Street           | Bush Street       | D Street            | NB                            | Coll2   | 1     | none         | 0.06                         | 0.12 | A                               | C  |
|                      | Bush Street       | D Street            | SB                            | Coll2   | 1     | none         | 0.10                         | 0.12 | B                               | C  |
|                      | D Street          | Cinnamon Drive      | NB                            | Coll2   | 1     | 1 left turn  | 0.14                         | 0.26 | C                               | C  |
|                      | D Street          | Cinnamon Drive      | SB                            | Coll2   | 1     | 1 left turn  | 0.25                         | 0.18 | C                               | C  |
|                      | Cinnamon Drive    | Hanford-Armona Road | NB                            | Coll2   | 1     | 1 left turn  | 0.23                         | 0.31 | C                               | C  |
|                      | Cinnamon Drive    | Hanford-Armona Road | SB                            | Coll2   | 1     | 1 left turn  | 0.22                         | 0.38 | C                               | C  |
| Hanford-Armona Road  | College Drive     | Belle Haven Drive   | WB                            | RurArt2 | 1     | none         | 0.05                         | 0.03 | A                               | A  |
|                      | College Drive     | Belle Haven Drive   | EB                            | RurArt2 | 1     | none         | 0.03                         | 0.05 | A                               | A  |
|                      | Belle Haven Drive | SR-41 SB ramps      | WB                            | RurArt2 | 1     | none         | 0.05                         | 0.04 | A                               | A  |
|                      | Belle Haven Drive | SR-41 SB ramps      | EB                            | RurArt2 | 1     | none         | 0.03                         | 0.05 | A                               | A  |
|                      | SR-41 NB ramps    | 19th Avenue         | WB                            | RurArt2 | 1     | none         | 0.38                         | 0.27 | C                               | C  |
|                      | SR-41 NB ramps    | 19th Avenue         | EB                            | RurArt2 | 1     | none         | 0.31                         | 0.57 | C                               | C  |
|                      | 19th Avenue       | Liberty Drive       | WB                            | RurArt2 | 1     | none         | 0.38                         | 0.38 | C                               | C  |
|                      | 19th Avenue       | Liberty Drive       | EB                            | RurArt2 | 1     | none         | 0.27                         | 0.51 | C                               | C  |
|                      | Fox Street        | Lemoore Avenue      | WB                            | RurArt2 | 1     | 1 left turn  | 0.30                         | 0.31 | C                               | C  |

**Table 3.2-4 Existing Local Roadway V/C ratios and Peak Hour Levels of Service**

| Segment Descriptions |                     |                     | Direction | Existing Lanes and Capacities |       |                   | Existing Peak Hour V/C Ratio |      | Existing Level Of Service (LOS) |    |
|----------------------|---------------------|---------------------|-----------|-------------------------------|-------|-------------------|------------------------------|------|---------------------------------|----|
| RoadName             | Segment Limit       | Segment Limit       |           | Class                         | Lanes | Turn Pockets      | AM                           | PM   | AM                              | PM |
|                      | Fox Street          | Lemoore Avenue      | EB        | RurArt4                       | 2     | 1 left turn       | 0.08                         | 0.22 | A                               | C  |
|                      | Lemoore Avenue      | Cinnamon Drive      | WB        | RurArt4                       | 2     | 1 left turn       | 0.03                         | 0.04 | A                               | A  |
|                      | Lemoore Avenue      | Cinnamon Drive      | EB        | RurArt4                       | 2     | 1 left turn       | 0.04                         | 0.04 | A                               | A  |
| Industry Way         | College Drive       | Belle Haven Drive   | WB        | Coll2                         | 1     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | College Drive       | Belle Haven Drive   | EB        | Coll2                         | 1     | none              | 0.00                         | 0.00 | A                               | A  |
| Iona Avenue          | 19th Avenue         | 18th Avenue         | WB        | RurArt2                       | 1     | none              | 0.05                         | 0.05 | A                               | A  |
|                      | 19th Avenue         | 18th Avenue         | EB        | RurArt2                       | 1     | none              | 0.08                         | 0.11 | A                               | B  |
| Jackson Avenue       | 21st Avenue         | SR-41               | WB        | UrbArt2                       | 1     | none              | 0.10                         | 0.12 | B                               | C  |
|                      | 21st Avenue         | SR-41               | EB        | UrbArt2                       | 1     | none              | 0.10                         | 0.09 | B                               | B  |
| Lemoore Avenue       | Golf Links Dr.      | Iona Avenue         | NB        | UrbArt2                       | 1     | none              | 0.12                         | 0.35 | C                               | C  |
|                      | Golf Links Dr.      | Iona Avenue         | SB        | UrbArt2                       | 1     | none              | 0.28                         | 0.44 | C                               | C  |
|                      | Iona Avenue         | SR-198 EB ramps     | NB        | UrbArt2                       | 1     | none              | 0.23                         | 0.44 | C                               | C  |
|                      | Iona Avenue         | SR-198 EB ramps     | SB        | UrbArt2                       | 1     | none              | 0.34                         | 0.47 | C                               | C  |
|                      | SR-198 WB ramps     | Cedar Lane          | NB        | UrbArt4                       | 2     | none              | 0.22                         | 0.22 | C                               | C  |
|                      | SR-198 WB ramps     | Cedar Lane          | SB        | UrbArt4                       | 2     | none              | 0.18                         | 0.22 | C                               | C  |
|                      | Cedar Lane          | Bush Street         | NB        | UrbArt4                       | 2     | 1 left turn       | 0.22                         | 0.22 | C                               | C  |
|                      | Cedar Lane          | Bush Street         | SB        | UrbArt4                       | 2     | 1 left turn       | 0.18                         | 0.22 | C                               | C  |
|                      | Bush Street         | D Street            | NB        | UrbArt4                       | 2     | 1 left/ 1 parking | 0.09                         | 0.21 | B                               | C  |
|                      | Bush Street         | D Street            | SB        | UrbArt4                       | 2     | 1 left turn       | 0.21                         | 0.21 | C                               | C  |
|                      | D Street            | Cinnamon Drive      | NB        | UrbArt4                       | 2     | 1 left turn       | 0.13                         | 0.33 | C                               | C  |
|                      | D Street            | Cinnamon Drive      | SB        | UrbArt4                       | 2     | 1 left turn       | 0.31                         | 0.36 | C                               | C  |
|                      | Cinnamon Drive      | Hanford-Armona      | NB        | UrbArt4                       | 2     | 1 left turn       | 0.08                         | 0.17 | A                               | C  |
|                      | Cinnamon Drive      | Hanford-Armona      | SB        | UrbArt4                       | 2     | 1 left turn       | 0.14                         | 0.22 | C                               | C  |
| Liberty Drive        | Cinnamon Drive      | Hanford-Armona Road | NB        | Coll2                         | 1     | none              | 0.08                         | 0.07 | A                               | A  |
|                      | Cinnamon Drive      | Hanford-Armona Road | SB        | Coll2                         | 1     | none              | 0.10                         | 0.05 | B                               | A  |
|                      | Hanford-Armona Road | Lacey Boulevard     | NB        | Coll2                         | 0     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | Hanford-Armona Road | Lacey Boulevard     | SB        | Coll2                         | 0     | none              | 0.00                         | 0.00 | A                               | A  |
| Marsh Drive          | SR-198              | Semas Drive         | NB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | SR-198              | Semas Drive         | SB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | Semas Drive         | Pedersen Avenue     | NB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | Semas Drive         | Pedersen Avenue     | SB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | Pedersen Avenue     | Bush Street         | NB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | Pedersen Avenue     | Bush Street         | SB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
| Pederson Avenue      | Semas Drive         | Marsh Drive         | WB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | Semas Drive         | Marsh Drive         | EB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
| Semas Drive          | Bush Street         | Pedersen Avenue     | NB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |
|                      | Bush Street         | Pedersen Avenue     | SB        | UrbArt2                       | 0     | none              | 0.00                         | 0.00 | A                               | A  |

**Table 3.2-4 Existing Local Roadway V/C ratios and Peak Hour Levels of Service**

| Segment Descriptions |                 |               | Direction | Existing Lanes and Capacities |       |              | Existing Peak Hour V/C Ratio |      | Existing Level Of Service (LOS) |    |
|----------------------|-----------------|---------------|-----------|-------------------------------|-------|--------------|------------------------------|------|---------------------------------|----|
| RoadName             | Segment Limit   | Segment Limit |           | Class                         | Lanes | Turn Pockets | AM                           | PM   | AM                              | PM |
|                      | Pedersen Avenue | Marsh Drive   | NB        | UrbArt2                       | 0     | none         | 0.00                         | 0.00 | A                               | A  |
|                      | Pedersen Avenue | Marsh Drive   | SB        | UrbArt2                       | 0     | none         | 0.00                         | 0.00 | A                               | A  |
| Silverado            | 19th Avenue     | 19 1/2 Avenue | WB        | UrbArt2                       | 1     | none         | 0.07                         | 0.06 | A                               | A  |
|                      | 19th Avenue     | 19 1/2 Avenue | EB        | UrbArt2                       | 1     | none         | 0.05                         | 0.08 | A                               | A  |

Source: Dowling Associates, 2007.

**State Highways**

Table 3.2-5 provides the existing v/c ratios and resultant peak hour levels of service for segments of SR-198 and SR-41 within the Planning Area. None of these segments currently operates at unacceptable levels of service.

**Table 3.2-5 Existing Highway V/C ratios and Peak Hour Levels of Service**

| Segment Descriptions |                         |                     | Direction | Existing Lanes and Capacities |       |              | Existing Peak Hour V/C Ratio |      | Existing Level Of Service (LOS) |    |
|----------------------|-------------------------|---------------------|-----------|-------------------------------|-------|--------------|------------------------------|------|---------------------------------|----|
| RoadName             | Segment Limit           | Segment Limit       |           | Class                         | Lanes | Turn Pockets | AM                           | PM   | AM                              | PM |
| State Route (SR) 41  | Idaho Avenue            | SR-198              | NB        | Fwy4                          | 2     | none         | 0.14                         | 0.21 | A                               | A  |
|                      | Idaho Avenue            | SR-198              | SB        | Fwy4                          | 2     | 1 left       | 0.20                         | 0.13 | A                               | A  |
|                      | SR-198                  | Bush Street         | NB        | Fwy4                          | 2     | n/a          | 0.14                         | 0.18 | A                               | A  |
|                      | SR-198                  | Bush Street         | SB        | Fwy4                          | 2     | n/a          | 0.20                         | 0.13 | A                               | A  |
|                      | Bush Street             | Hanford-Armona Road | NB        | Fwy4                          | 2     | 1 left turn  | 0.10                         | 0.17 | A                               | A  |
|                      | Bush Street             | Hanford-Armona Road | SB        | Fwy4                          | 2     | 1 left turn  | 0.17                         | 0.12 | A                               | A  |
| State Route (SR) 198 | 21st Avenue/Marsh Drive | SR-41               | WB        | Fwy4                          | 2     | n/a          | 0.25                         | 0.16 | A                               | A  |
|                      | 21st Avenue/Marsh Drive | SR-41               | EB        | Fwy4                          | 2     | n/a          | 0.13                         | 0.23 | A                               | A  |
|                      | SR-41                   | 19th Avenue         | WB        | Fwy4                          | 2     | 1 left       | 0.29                         | 0.19 | A                               | A  |
|                      | SR-41                   | 19th Avenue         | EB        | Fwy4                          | 2     | 1 left       | 0.17                         | 0.29 | A                               | A  |
|                      | 19th Avenue             | Vine Street         | WB        | Fwy4                          | 2     | 1 left       | 0.24                         | 0.16 | A                               | A  |
|                      | 19th Avenue             | Vine Street         | EB        | Fwy4                          | 2     | 1 left       | 0.14                         | 0.24 | A                               | A  |
|                      | Vine Street             | Lemoore Avenue      | WB        | Fwy4                          | 2     | n/a          | 0.21                         | 0.21 | A                               | A  |
|                      | Vine Street             | Lemoore Avenue      | EB        | Fwy4                          | 2     | n/a          | 0.21                         | 0.25 | A                               | A  |
|                      | Lemoore Avenue          | D Street            | WB        | Fwy4                          | 2     | n/a          | 0.26                         | 0.25 | A                               | A  |
|                      | Lemoore Avenue          | D Street            | EB        | Fwy4                          | 2     | n/a          | 0.22                         | 0.28 | A                               | A  |

Source: Dowling Associates, 2007.

## **Truck Routes**

There are a number of existing and proposed trucks routes within and adjacent to the City. These include:

- SR-41 and SR-198
- Hanford-Armona Road between College Drive and 17th Avenue
- Cinnamon Drive between 19 ½ Avenue and Lemoore Avenue
- Industry Way between Production Place and Belle Haven Drive
- Bush Street between 19 ½ Avenue and Semas Drive
- Bush Street between Lemoore Avenue and East D Street
- East D Street east of East Bush Street to SR-198
- Iona Avenue between 19th Avenue and Lemoore/18th Avenue
- Idaho Avenue between SR-41 and Vine Street- 18 ½ Avenue
- College Drive between Hanford-Armona Road and Industry Way
- Semas Drive between Bush Street and Pedersen Avenue
- Belle Haven Drive between Bush Street and Hanford-Armona Road
- 19 ½ Avenue between Cinnamon Drive and Bush Street
- 19th Avenue between Jackson Avenue and Hanford-Armona Road
- 18th Avenue/Lemoore Avenue between Iona Avenue and Hanford-Armona Road
- 17th Avenue between East D Street and Hanford-Armona Road

Refer to Truck Routes map, **Figure 3.2-3**.

Figure 3.2-3: Truck Routes

Figure 3.2-3 back

## Transit System

Local and regional transit service is provided by Kings County Area Rural Transit Agency (KCARTA). The transit service is called Kings Area Rural Transit (KART). KART offers two levels of service: Fixed routes and demand/response service. KART transit route #7 provides service within Lemoore and between the City and the NAS Lemoore and the Hanford Amtrak station. One-hour service is provided between Lemoore and Hanford from 6:30 AM until 10:30 PM weekdays from Monday to Friday. Saturday service is provided 8 AM to 5 PM. One-hour service is also provided between Lemoore and the NAS Lemoore Monday through Friday from 5:00 AM until 7:00 PM. The service also operates Saturdays from 9:00 AM until 5:00 PM. However, this service to the base may have to be reduced due to lack of funding. KART dial-a-ride service is available in Lemoore weekdays from 6:30 AM to 5:30 PM and Saturdays from 9:00 AM to 3:30 PM for persons located more than ½ mile from the fixed route within the service area. Disability service is available any time during normal operating hours.

## Bicycle Circulation

Bicycle facilities are normally provided for under all roadway classifications except freeways. The City of Lemoore roadway standards for arterial, collector and local streets include bicycle facilities. Often, the bicycle and pedestrian facilities are integrated into a single 8 to 10 foot wide lane. Kings County's Regional Bicycle Plan, adopted in 2005, illustrates both existing and planned bikeways for the City. Currently, Lemoore's bikeways extend throughout central Lemoore to the Municipal Golf Course and Little League fields and out 18th Avenue to the north.

The City also has an existing bicycle system, with bicycle facilities divided into three categories:

- *Class I Bikeway.* A path for the exclusive use of bicycles, separated from the road by space or a physical barrier. It may be on part of a road right-of-way (Lemoore's are shared in large 10 foot sidewalks) or on a separate right-of-way.
- *Class II Bikeway.* A separate lane primarily for the use of bicycles on a road right-of-way. Travel within the lane by autos or pedestrians are excluded, although vehicle parking is permissible.
- *Class III Bikeway.* A route where bikes share the right-of-way with either moving autos or pedestrians.

The existing system includes:

- *Class I facilities* occur on portions:
  - Hanford-Armona Road (19th Avenue to Lemoore Avenue), Lemoore Avenue (Cinnamon Drive to Hanford-Armona Road and SR-198 to Iona Avenue), around Heritage Park, D Street (Smith Avenue to East Bush Street), West of Fox Street (Fallenleaf Drive to Cinnamon Drive), 19th Avenue (Bush Street to Atlantic Avenue), and Belle Haven Drive south of Bush Street.

- *Class II facilities* occur on portions:
  - Hanford-Armona Road (Lemoore Avenue to Cinnamon Drive), Cinnamon Drive (19 ½ Avenue to Hanford-Armona Road), Fox Street (Cinnamon Drive to Hanford-Armona Road), Fallenleaf Drive (Liberty Drive to Fox Street), Liberty Drive (Hanford-Armona Road to Cinnamon Drive), Hill Street (D Street to Bush Street), Lemoore Avenue (SR-198 to Bush Street, 19th Avenue (Silverado Avenue to Cedar Lane), 19th Avenue (Cinnamon Drive to D Street), Belle Haven short section north of Bush Street, Golf Links Drive (Iona Avenue to Lemoore Avenue), D Street (Smith Street to Lemoore Avenue), E Street (Fox Street to Olive Street).
- *Class III facilities* occur on portions:
  - Cinnamon Drive (19 ½ Avenue to 19th Avenue).

For a map of bicycle routes and public transit services, please refer to **Figure 3.2-4**.

### **Rail Facilities**

The San Joaquin Valley Railroad (SJVR) is one of several short line railroad companies and is part of the Sunset Division of Rail America. It operates about 207 miles of track primarily on several lines in California's Central Valley/San Joaquin Valley outside of Fresno, California and Bakersfield, California. The SJVR has trackage rights over Union Pacific (formerly Southern Pacific) from Fresno–Goshen Junction–Famoso–Bakersfield–Algo. The SJVR also operates for the Tulare Valley Railroad (TVRR) from Calwa to Corcoran and Famoso. The SJVR tracks operate through the center of the City of Lemoore. The alignment is generally north of Bush and D Streets. A station is located near the downtown at 300 E Street.

In 2004, 45 miles of trackage was upgraded to serve 286,000 rail cars to encourage shipping by rail instead of trucks. The City then upgraded our industrial park adjacent to rail to attract more industries that could utilize rail. Currently, only freight rail service is provided on the SJVR trackage. Passenger service is available on AMTRAK in the City of Hanford about 7 miles to the north-east of the City of Lemoore on the north-south Burlington Northern Santa Fe rail line.

## **REGULATORY SETTING**

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### **Federal**

The Safe, Accountable, Efficient Transportation Equity Act, or SAFETEA, was approved by Congress in July 2005 and signed into law by the President in August 2005. This law provides \$244 billion in guaranteed funding for federal surface transportation programs for the next 5 years, an average annual increase of 35 percent from previous years. This law replaces the Transportation Equity Act for the 21st Century (TEA-21), which expired in September 2003.

### **State**

Caltrans is responsible for planning, design, construction, and maintenance of all State highways. Caltrans' jurisdictional interest extends to improvements to these roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements are subject to review by Caltrans staff and the California Transportation Commission.

Figure 3.2-4: Bike & Transit map

Figure 3.2-4 back

*The Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2001) provides consistent guidance for Caltrans staff who review local development and land use change proposals as well as informs local agencies of the information needed for Caltrans to analyze the traffic impacts to State highway facilities including freeway segments, on- or off-ramps, and signalized intersections.

Caltrans also has prepared a *Transportation Concept Report for State Route 198* (2002) in which a level of service standard C is established for segments in the Lemoore Planning Area. The report also notes that this segment will be expanded to a four-lane freeway, but that this improvement alone will not be enough to maintain LOS C.

### **Regional**

*Regional Transportation Plan 2007*. The 2007 Regional Transportation Plan (RTP) for King's County was adopted May 30, 2007. The plan sets priorities for funding and implementation of transportation related projects throughout the County. This 2007 RTP update was prepared by the staff of the Kings County Association of Governments (KCAG) with the assistance of each of its member agencies: the cities of Avenal, Corcoran, Hanford and Lemoore, and the County of Kings. The Santa Rosa Tachi-Yokuts tribe was also consulted during the development of the RTP, as members of the TAC. Caltrans District 6 and San Joaquin Valley Air Pollution Control District staff provided an invaluable service by furnishing helpful information, comments, and general support.

### **Local**

The City of Lemoore does not currently have any adopted level of service (LOS) standard. However, recent traffic studies have used level of service D as the standard for evaluating project impacts at intersections. Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on SR-facilities, however, Caltrans acknowledges that this may not always be feasible and recommends the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing measures of effectiveness should be maintained. Given that this EIR focuses upon roadway segment rather than intersections, a target LOS at the transition of LOS "C" and LOS "D" is being used to assess the impacts of this General Plan Update (the point at which the LOS changes from C to D).

## **IMPACT ANALYSIS**

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### **SIGNIFICANCE CRITERIA**

Implementation of the proposed General Plan would have a potentially significant transportation/traffic impact if it would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the V/C ratio for freeways, or congestion at intersections);
- Exceed, either individually or cumulatively, a level of service (LOS) standard established by the county congestion management agency or City of Lemoore for designated roads or

highways; i.e., target LOS at the transition between LOS “C” and LOS “D” (the point at which the LOS changes from C to D).

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Increase substantially hazards due to a design feature (i.e., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or
- Conflict with adopted policies, plans, or programs supporting alternative transportation.

## **METHODOLOGY AND ASSUMPTIONS**

The City of Lemoore in coordination with the County of Kings County has developed a regional travel demand-forecasting model, which has been refined for use in this EIR. The model is designed to forecast average daily traffic throughout the County. Several local communities including the City of Lemoore have requested the County to modify the model to incorporate a more detailed roadway and local circulation system. The City of Lemoore model includes 46 traffic analysis zones and most freeways, arterials, collectors and major local streets. It also includes planned improvements as identified in the proposed General Plan. The model was validated against existing traffic counts conducted by the County throughout the City. Further, peak hour traffic turn movement counts were extracted from recent traffic studies to round out the traffic count database.

The procedures for forecasting traffic are outlined below.

1. Raw (unadjusted) model traffic volumes are extracted and imported into a post-processing spreadsheet. The extracted data includes: 1) the model estimates for the existing base year traffic volumes; and 2) the model estimates for the future year traffic volumes.
2. The base year and future year traffic volumes are subtracted and then added to the existing traffic count to create a future traffic volume.
3. For those roadway segments where no existing traffic volume exists, the future forecast volumes are used. The model was validated against existing traffic counts and was adjusted to match these counts as close as possible. Given that the overall margin of error is small, it is assumed that the estimates for existing traffic are close to the actual traffic volumes.
4. The future (projected) traffic volumes are then divided by the daily or directional peak hour capacities depending upon the street classifications used for the roadway segment. The resultant volume-to-capacity ratios are then assigned a daily or peak hour level of service.

5. For those roadway segments that operate at sub-standard levels of service, either the roadway classification or the number of travel lanes is changed to reflect future mitigation. The resultant roadway configuration is then retested for level of service.

### **Planned Roadway Improvements**

The following roadway improvements have been included in the future roadway network and incorporated into the proposed General Plan. In addition to normal roadway widening a number of new roadway connections have been proposed. **Figure 3.2-5** illustrates these improvements.

- 18th Avenue - SR-198 to Iona Avenue widen from 2 to 4 lanes
- 19th Avenue - Construct 2 new lanes connecting north of Hanford-Armona Road to 18 ¾ Avenue
- 19th Avenue - Hanford-Armona Road to Idaho Avenue widen portions from 2 to 4 lanes, as needed
- 19 ½ Avenue - Cinnamon Drive to Silverado Drive widen from 2 to 4 lanes
- Belle Haven Drive – North of Bush Street to Railroad realign 4 lanes as shown on **Figure 3.2-5** at least 525 feet west of the existing southbound SR-41 ramp intersection
- Belle Haven Drive - South of Bush Street (new roadway) construct newly aligned private roadway with a minimum of 6 lanes (as required to accommodate final design)
- Bush Street – Marsh Drive to College Drive widen from 2 to 4 lanes
- Bush Street - College Drive to Semas Drive widen from 2 to 6 lanes
- Bush Street - Semas Drive to Belle Haven Drive widen to 8 lanes with landscaped median (includes turn lanes per Wal-Mart administrative Draft TIS)
- Bush Street - Belle Haven Drive to SR-41 SB ramps widen between 7 to 8 lanes
- Bush Street - Between the SR-41 SB and NB ramps widen to 8 lanes
- Bush Street - SR-41 NB ramps to 19 ½ Avenue - widen to 6 lanes with landscaped median
- Bush Street - 19 ½ Avenue to 17th Avenue widen from 2 to 4 lanes with landscaped median
- Bush Street - Lemoore Avenue to East D Street stripe and widen from 2 to 4 lanes where missing
- Cedar Lane - Blue Jay Avenue to 19th ½ Avenue construct with 2 through lanes
- Cedar Lane - Brooks Drive to Lemoore Avenue construct with 2 through lanes
- Cinnamon Drive - 19 ½ Avenue to Lemoore Avenue stripe and widen from 2 to 4 lanes
- College Drive - South of Bush Street widen or construct new street to 4 lanes on missing portions (new roadway)
- College Drive - North of Bush Street to Hanford-Armona Road construct with 2 lanes (acquire adequate right-of-way to accommodate a standard arterial street)

- College Drive at railroad tracks - construct new railroad crossing in coordination with the Public Utilities Commission (PUC) and the railroad
- D Street - Smith Avenue to 17th Avenue widen from 2 to 4 lanes
- Daphne Lane Extension - Daphne Lane north of railroad tracks to D Street construct new 2-lane collector roadway and railroad crossing in coordination with PUC and railroad
- Follett Street - Cinnamon to G Street construct with 2 lanes
- Hanford-Armona Road - 17th Avenue to a point approximately 525 feet east of SR-41 widen from 2 to 4 lanes where segments are missing.
- Hanford-Armona Road – 525 feet east of SR-41 to a point approximately 525 feet west of SR-41 widen from 2 to 6 lanes
- Hanford-Armona Road - 525 feet west of SR-41 to new College Drive extension widen from 2 to 4 lanes
- Iona Avenue - 19th Avenue to Lemoore/18th Avenue widen from 2 to 4 lanes.
- Industry Extension - Construct 2-lanes west of Production Place
- Lemoore Avenue - Bush Street to "G" Street widen street
- Liberty Drive - Hanford-Armona Road to Lacey Boulevard widen from 2 to 4 lanes
- Marsh Drive - North of SR-41 (new roadway) construct with 4 lanes
- Pederson Avenue (new roadway) - Construct with 4 lanes
- Semas Drive - South of Bush Street to Marsh Drive (new roadway) construct with 4 lanes
- Silverado Avenue - 19 ½ Avenue to 19th Avenue stripe from 2 to 4 lanes
- SR-198 and 19th Avenue - Construct new interchange
- SR-198 - D Street to 21st Street westbound widen from 2 to 3 lanes (Caltrans' responsibility)
- SR-198 - Vine Street to D Street eastbound widen from 2 to 3 lanes (Caltrans' responsibility)
- SR-198 at Marsh Drive - Construct new interchange
- SR-41 at Hanford-Armona Road - Add 2 left turn lanes for each approach at the intersection as per August 2007 Leprino mitigated negative declaration
- New Arterials within the development area west of SR-41 - Construct with 4 lanes
- Vine Street on both sides of SR-198 - Cul-de-sac when new interchange is built at 19th Avenue
- Between Liberty Drive/18 ¾ Avenue to 17th Avenue one block north of the Glendale Ave-

nue alignment - Construct new east-west Collector street

- North of Glendale Avenue to Lacey Boulevard between 18th and 17th Avenues - Construct new north-south rural Collector street

### **Anticipated Intersection Improvements**

- Signalize or install full or small scale roundabouts at 19th /Hanford-Armona Road, Fox/Hanford Armona Road, Fox Street/Cinnamon Drive, Cinnamon Drive/Hanford-Armona Road, Bush Street/19th Avenue, 19th/Avenue/Cedar Lane, East D Street/East Bush Street, Pedersen Avenue/Marsh Drive, Iona Avenue/Lemoore Avenue, Semas Drive at angled street (after signal warrants and appropriate studies are done)
- Signalize Liberty Drive/Hanford-Armona Road, Cinnamon Drive/19th Avenue, and Bush Street at College Drive, Semas Drive, Bellehaven Drive, SR-41 SB ramps, SR-41 NB ramps, and 19 ½ Avenue (after signal warrants and appropriate studies are done)
- Upgrade existing railroad crossings at Lemoore Avenue, Follett Street, Fox Street, and 19th Avenue

### **Additional Traffic Calming and Pedestrian Oriented Street Improvements**

- Urban/Rural Edge tree plantings along 19th Avenue, Bellehaven Drive, Idaho Avenue, Iona Avenue, Industry Way, Jackson Avenue, Marsh Drive, 18th Avenue, East D Street as shown, 19th Avenue, and the Lemoore Canal as shown on Figure 3-2.5
- Landscaped medians added to all of Cedar Lane, Golf Links Drive, and Semas Drive, as well as portions of Hanford-Armona Road, Fox Street, and Bush Street as depicted in Figure 3.2-5
- Widen/improve Lemoore Avenue to include contiguous 6-10 foot sidewalks with trees in landscape strips or tree wells
- Additional parkway strips along Cedar Lane
- Obtain a total of 84 feet of right-of-way along D Street from Lemoore Avenue to a point 100 feet to the east of the intersection and widen street and curb radius to accommodate truck route traffic
- Cul-de-sac Larish Street 220 feet west of Lemoore Avenue once Cedar Lane connects to Lemoore Avenue to stop cut-through traffic and allow for the improvement of the adjacent neighborhood commercial
- Add pedestrian bridge over SR-198 at Vine Street

## SUMMARY OF IMPACTS

Buildout of the proposed General Plan will have a less than significant impact on the local transportation system, with increased congestion on arterial roads and collectors, but no unacceptable levels of service with implementation of General Plan policies and planned improvements. Buildout of the proposed General Plan also will increase traffic on State highways, but this will not result in unacceptable levels of service, except for a series of segments on SR-198 for one peak-hour time period where LOS D is anticipated. Total daily vehicle trips is expected to increase over 250 percent over existing levels, from 1 million to 2.6 million vehicle miles traveled.

To mitigate the effects of traffic growth, the proposed General Plan will establish policies and programs to ensure that levels of service are maintained and a wide range of transportation alternatives are provided to minimize total vehicle miles traveled, minimize vehicle emissions and save energy. Specific proposals include a Transportation Performance Monitoring Program to reduce traffic generated in the planned Business, Technology, and Industrial Reserve Area, southwest of the SR-41 and SR-198 interchanges, and policies to promote transit ridership, bicycle use and pedestrian activity, as well as physical improvements to roadway segments and intersections and construction of new roadways.

The proposed General Plan will have no impact on air traffic patterns as these are controlled by the U.S. Navy, nor will it increase vehicle hazards due to design features or incompatible uses or impact in anyway emergency access. Buildout will increase demand for on-street and off-street parking, but Plan policies and zoning requirements to be updated following Plan adoption will ensure that adequate parking is provided. Finally, the proposed Plan will not conflict with any adopted policies or programs intended to support alternative transportation. Together, the proposed improvements and the Plan policies will ensure the roadway LOS is kept to an acceptable level even though there may be increased traffic volumes on local roads and State highways during peak hours.

## IMPACTS AND MITIGATION MEASURES

The significant impacts of the proposed General Plan are summarized and compared to existing conditions. To the extent that policies from the proposed General Plan reduce transportation impacts associated with its implementation, the policies are included in the discussion below.

### Impact

- 3.2-1 Implementation of the proposed General Plan will cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system, but with planned improvements required by the proposed General Plan, an acceptable level of service will be maintained on City roadways. (*Less than Significant*)**

Traffic impact modeling conducted for the proposed General Plan using projected increases in housing and employment for the travel demand model shows specific effects on trip generation, trip distribution and future levels of service on local roadways, as described below.

Figure 3.2-5

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**Trip Generation**

Table 3.2-6 details the daily and peak hour trip generation for the existing condition and build out of the proposed General Plan and its resultant traffic assigned to the proposed Circulation Element, including the planned street improvements. A comparison of the total trip generation between the existing street system and the proposed General Plan shows only minor changes in all trip categories. The growth over existing conditions is about 250 percent.

**Table 3.2-6 Trip Generation**

| Network Scenarios     | Daily   | AM Peak-Hour |        |        | PM Peak-Hour |        |        |
|-----------------------|---------|--------------|--------|--------|--------------|--------|--------|
|                       |         | In           | Out    | Total  | In           | Out    | Total  |
| Existing              | 171,436 | 7,368        | 7,358  | 14,726 | 8,634        | 8,591  | 17,225 |
| Proposed General Plan | 426,410 | 18,971       | 16,807 | 35,778 | 20,527       | 21,660 | 42,187 |

Source: Dowling Associates, 2007.

**Trip Distribution Patterns**

Trip distribution patterns created by the proposed General Plan are shown in Table 3.2-7. The trip patterns are divided into three groupings that include the following:

- Trips that start and end within the City of Lemoore;
- Trips between the City of Lemoore and the region; and
- Trips that travel through the City of Lemoore using regional roadways.

The amount of trips under future conditions is significantly higher than existing conditions.

**Table 3.2-7 Daily Vehicle Trip Patterns under the Proposed General Plan**

| Network Scenarios     | Trips between        |       |                    |       |               |       |         |
|-----------------------|----------------------|-------|--------------------|-------|---------------|-------|---------|
|                       | Trips within Lemoore |       | Lemoore and region |       | Through-Trips |       | Total   |
| Existing              | 110,248              | 64.3% | 42,758             | 24.9% | 18,430        | 10.8% | 171,436 |
| Proposed General Plan | 318,385              | 74.7% | 64,365             | 15.1% | 43,660        | 10.2% | 426,410 |

Source: Dowling Associates 2007, from Kings County Travel Demand Model.

**Vehicle Miles Traveled**

Another variable for evaluating the impacts of the proposed General Plan is vehicle miles traveled (VMT) during the PM Peak Hour. VMT is the total number of peak hour trips times the total number of miles traveled between trip origins and destinations. This metric can be useful as a gross comparison of the amount of traffic generated by different alternatives and also takes into account the circuitous routes that drivers can take to avoid congested areas. Table 3.2-8 shows the VMT for all local trips that start and end within the City and all regional trips, which include an origin or destination outside the City.

**Table 3.2-8 Local and Regional Vehicle Miles Traveled (VMT)**

| Network Scenarios     | Local VMT |       | Regional VMT |       | Total     |
|-----------------------|-----------|-------|--------------|-------|-----------|
| Existing              | 136,034   | 13.0% | 908,789      | 87.0% | 1,044,823 |
| Proposed General Plan | 346,394   | 13.1% | 2,294,375    | 86.9% | 2,640,769 |

Local VMT= All trips that start and end within Lemoore. - Regional VMT = All trips that start or end in Lemoore

Source: Dowling Associates 2007, from Kings County Travel Demand Model.

Table 3.2-9 shows the V/C ratios and resultant Levels of Service (LOS) for all of the local roadway segments evaluated in this EIR for two future conditions: the proposed General Plan with planned roadway improvements and the proposed Plan without these improvements. With planned improvements, all roadway segments operate at LOS D or better conditions. If the planned improvements are not constructed, portions of Bush Street and Hanford-Armona Road will operate at unacceptable levels of service.<sup>1</sup>

See Figure 3.2-6, Future Volume map.

***Proposed General Plan Policies that Reduce the Impact***

The following proposed policies are specifically targeted at reducing the potential impacts of buildout of the proposed General Plan on the circulation system.

- C-I-7 Develop and manage the roadway system to obtain Level of Service (LOS) D or better for two hour peak periods (a.m. and p.m.) on all major roadways and arterial intersections in the City. This policy does not extend to local residential streets (i.e., streets with direct driveway access to homes) or state highways and their intersections, where Caltrans policies apply. Exceptions to LOS D policy may be allowed by the City Council in areas, such as Downtown, where allowing a lower LOS would result in clear public benefits, social interaction and economic vitality, and help reduce overall automobile use.

*No new development will be approved unless it can be shown that required LOS can be maintained on affected roadways either through this General Plan documentation or more specific traffic studies conducted through the City where appropriate.*

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<sup>1</sup> In Table 3.2-9, the recommendations for left or right turn lanes would apply to the intersections located along the roadway segments. The recommendation for a center turn lane would apply to the mid-block portion of the roadway segment. Further analysis of peak hour operations at all critical intersections will be undertaken as part of implementation of the recommended turn lanes to ensure that where independent turning lanes are needed, they are provided.

- C-I-9 Establish a Transportation Performance Monitoring (TPM) program for the Business, Technology, and Industrial Reserve Area, generally located in the Southwest quadrant of SR-198 and SR-41, to monitor and control traffic arising from new development.

*Development occurring within the TPM program area or any other such designated portion of the City must submit data to the City Engineer to calculate the number of site trips generated per developable acre. Within this area, development “caps” will be assigned to maintain service levels within traffic analysis zones (TAZs). These “caps” will be developed through density thresholds while monitoring roads and intersections for each land use category allowed per gross 1,000 square feet area. Developers must provide data to the City Traffic Engineer for site trip calculations and reduce the number of housing units or size of non-residential buildings if the number of trips exceeds the allowed cap to gain development approval. The City will maintain a “trip ledger” showing all site trips that have been approved for each TAZ, with allocations made on the basis of receipt of a Certificate of Reservation of Site Trips or a building permit application. The City Council will periodically review the trip generation rates and allowable adjustments and exceptions established for the TPM program and the trip allocations by TAZ, and allow for recalculation of the maximum number of site trips allowed based on approved changes in trip generation rates or other adjustment factors. Details on how trip generation rates are established, how site trips are calculated, how the trip ledger is maintained, how exceptions are granted and what happens when unallocated site trips are unavailable will be included in the ordinance establishing the TPM once a Specific Plan has been developed.*

- C-I-10 Require traffic impact studies for any proposed General Plan amendment that will generate significant amounts of traffic (such as 100 or more peak hour trips).

*Specific thresholds will be based on location and project type, and exceptions may be granted where the traffic generation is consistent with the assumptions made for this General Plan or traffic studies have been completed for adjacent development and the City knows what mitigation, if any, will ensure that LOS standards will be maintained. The City’s new traffic model developed for the 2030 General Plan will facilitate this analysis. Detailed intersection and queuing analyses may be required to determine site specific improvements as circumstances warrant.*

- C-I-11 Establish and implement additional programs to maintain adequate peak hour LOS at intersections and along roadway segments as circumstances warrant, including the following actions:

- Collect and analyze traffic volume data on a regular basis (at least every 5 years) and monitor current intersection and roadway segment levels of service on a regular basis. Use this information to update and refine the City's travel forecasting model, so that estimates of future conditions are more strongly based upon local travel behavior and trends.
- Consider, on a case by case basis, how to shift travel demand away from the peak period by changing work shift starting times, especially in those situations where

peak traffic problems result from a few major generators (e.g. the West Hills College area and Bush Street corridor and the Industrial Area south of the City).

- Perform routine, ongoing evaluation of the efficiency of the urban street traffic control system, with emphasis on traffic signal timing, phasing and coordination to optimize traffic flow along arterial corridors. Use traffic control systems to balance arterial street utilization (e.g. timing and phasing for turn movements, peak period and off-peak signal timing plans).

*To assure acceptable traffic operating standards over time, the Public Works Department will conduct on-going traffic counts and the City Engineer or other designee will monitor conditions on an ongoing basis and apply applicable remedial measures as needed.*

No additional mitigation is needed.

Figure 3.2-6: Future Volume map

Figure 3.2-6 back

## Impact

### 3.2-2 Implementation of the proposed General Plan will create traffic that will increase congestion, but will not create unacceptable levels of service on State highways with planned improvements. (*Less than Significant*)

Table 3.2-10 shows the impacts of the proposed General Plan with the Planned Roadway Improvements on the freeway system. Under this scenario, the freeway system operates at acceptable levels of service for all segments, assuming that the proposed planned improvements are carried out. As portrayed in the table, without the planned improvements, some sections of SR-198 would perform at LOS D at buildout of the proposed General Plan.

The potential development of the southwest quadrant of the intersection of SR-198 and SR-41 includes the new interchange at SR-198 and Marsh Drive. Further, the conceptual roadway system for the southwest area focuses upon the SR-198/Marsh Drive interchange to protect the operational integrity of SR-41 south of SR-198. Access to the areas south of SR-198 and east of SR-41 are limited to the Jackson Avenue corridor.

The LOS D conditions (without planned improvements) are caused by job-related traffic generated by development of the southwest quadrant of land south of SR-198 and west of SR-41. The planned improvements listed in the proposed General Plan are necessary to avoid these unacceptable levels of service on SR-198. Policy LU-I-41 requires a specific plan for the southwest quadrant, and through this policy, as well as others listed under Impact 3.2-1, the proposed General Plan holds developers responsible for the construction of road improvements as needed to mitigate the traffic impacts of their development.

#### *Proposed General Plan Policies that Reduce the Impact*

LU-I-41 Allow up to 1.5 million square feet of non-residential development in the Business, Technology & Industrial Reserve Area, with up to 60 percent industrial, 35 percent office flex/R&D space/support services, and 15 percent retail space. A specific plan, including a financing plan for public facilities and services must be prepared prior to consideration of any development proposals. More non-residential space may be permitted under an approved specific plan only if the City determines that acceptable levels of service would be maintained on the Marsh Drive interchange at SR-198 and other access roads. The specific plan is at a minimum to provide for:

- Road connections and traffic capacity to accommodate planned development;
- Infrastructure necessary to support the area and benefit the City;
- Development and design program, including standards and guidelines for building scale and location, landscaping, parking design and location, undergrounding of utilities, and signs.
- Open space protection program, including designation of permanent open space and buffers adjacent to farmlands and the freeway corridors.

- Implementation program, including Zoning Ordinance amendments (if required), cost and responsibility for necessary capital and other improvements, phasing of development financing measures, plan administration and enforcement.

*The 400-acre Business, Technology and Industrial Reserve Area, located in the southwest quadrant of the SR-198/SR-41 interchange, with access from Marsh Drive, is intended for long-term development. Planning for this area is not likely to be initiated before 2020, at a time when at least 75 percent of the planned development north of SR-198 has occurred. This space will not be needed to achieve the community jobs-housing balance within the General Plan 2030 horizon.*

The policies cited under Impact 3.2.1 also to reduce Impact 3.2.2, and thus are incorporated by reference. No additional mitigation is needed.

Table 3.2-9: Future Local Roadway V/C Ratios and Peak Hour Levels of Service

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**Table 3.2-9: Future Local Roadway V/C Ratios and Peak Hour Levels of Service  
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**Table 3.2-9: Future Local Roadway V/C Ratios and Peak Hour Levels of Service**  
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**Table 3.2-9: Future Local Roadway V/C Ratios and Peak Hour Levels of Service  
Page 3**

**Table 3.2-9: Future Local Roadway V/C Ratios and Peak Hour Levels of Service**  
**Page 3 back**

**Table 3.2-10: Future Freeway V/C Ratios and Peak Hour Levels of Service Front**

**Table 3.2-10: Future Freeway V/C Ratios and Peak Hour Levels of Service Back**

## Impact

- 3.2-3 Implementation of the General Plan may create local impacts at intersections and along major access routes to future developments, including increases in vehicles queuing and requirements for left turn storage lanes. (*Less than Significant*)**

These types of impacts are localized and quantifying them is outside the scope of a General Plan analysis. However, policy C-I-10 in the proposed General Plan will require specific traffic studies for all development projects to identify these types of local impacts and determine appropriate mitigation measures. The Plan also calls for establishing and implementing additional programs that may be needed to ensure that peak hour LOS standards are maintained at all intersections in the Planning Area. The General Plan provides guidelines and policies for establishing the right-of-ways and major travel lane configurations for all of the roadways within the City. Localized traffic impact studies augment the General Plan by refining the peak hour traffic forecasts at major intersections. These studies thus define the requirements for turn lanes and other capacity enhancements that may be warranted for a specific development project.

It should also be noted, that project-specific traffic studies may use different build out scenarios than those used in the proposed General Plan travel demand model. Further, the General Plan model incorporates all of the planned improvements in the Circulation Element, which can affect the traffic forecasts throughout the City. Consequently, local focused traffic studies can result in different future roadway volumes and resultant level of service than identified in this General Plan impact assessment. The proposed General Plan provides the context for the evaluation of specific developments and the identification of more detailed local mitigation measures. It should be noted that, as part of the calibration of the travel demand model used to project traffic along the street system, care was given to match the peak hour traffic flows with those estimated as part of recent traffic impacts studies to the west of SR-41 and in other portions of the City. In fact, the travel demand model forecasts were used as the baseline for the cumulative traffic assessment in these Traffic Impact Analyses (TIA).

### ***Proposed General Plan Policies that Reduce the Impact***

The policies cited under Impact 3.2.2 also reduce Impact 3.2.3, and thus are incorporated by reference. No additional mitigation is needed.

## Impact

- 3.2-4 Implementation of the proposed General Plan could substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses as well as potentially adversely affect emergency access needs. (*Less than Significant*)**

Implementation of the proposed General Plan would increase the amount of vehicle traffic and the number of potential safety and emergency access conflicts. However, planned improvements in the proposed General Plan includes a number of new roadway extensions to enhance connectivity and local neighborhood circulation. These connections will provide alternative egress and access routes for the neighborhoods they serve, which will improve emergency access.

One connector, the easterly extension of Cedar Lane to Lemoore Avenue, requires some restrictions. Specifically, this connection would intercept Lemoore Avenue just north of the SR-198 westbound freeway ramps. The spacing between the ramp intersections and the new connector is too short to provide adequate left turn storage lanes on Lemoore Avenue. Therefore, specific mitigation measures are recommended to minimize vehicle and pedestrian conflict at this location. (See Section 3.3, Public Services and Utilities for additional discussion on emergency access.)

Finally, the proposed General Plan includes policies on roadway standards, which are designed to reduce vehicle conflicts and provide adequate capacity for vehicle operations.

***Proposed General Plan Policies that Reduce the Impact***

The following proposed policies are specifically targeted at reducing the potential impacts of General Plan buildout on road safety and emergency access.

- C-I-1 Adopt street standards that provide flexibility in design, especially in residential neighborhoods. Revise right-of-way and pavement standards to reflect adjacent land use and/or anticipated traffic, and permit reduced right-of-way dimensions where necessary to maintain neighborhood character.

*Proposed cross-sections and design standards are shown on Figure 4-3 of the General Plan. Some existing areas may require additional right-of-way to accommodate buildout traffic demand, or may be constrained by existing land use, which may limit the City's ability to meet the standards in Table 4.4 of the General Plan.*

- C-I-2 Require all new developments to provide right-of-way and improvements consistent with the General Plan street designations and cross-street section standards. Further, ensure that either the City Capital Improvement Program Budgets or new development carry out the planned improvements described in the General Plan. Alternative improvements shall be considered if supported by a traffic assessment conducted under the guidance of City staff.

*Within infill areas, the City may just require that street improvements match the designs and cross-sections of abutting streets.*

- C-I-3 Provide for greater street connectivity by:

- Incorporating in subdivision regulations requirements for a minimum number of access points to existing local or collector streets for each development (e.g. at least two access points for every 10 acres of development, with additional access, if warranted, for multi-family housing);
- Encouraging the construction of roundabouts instead of traffic signals and 4-way stop signs, where feasible;
- Requiring bicycle and pedestrian connections from cul-de-sacs to nearby public areas and main streets; and

- Requiring new residential communities on undeveloped land planned for urban uses to provide stubs for future connections to the edge of the property line. Where stubs exist on adjacent properties, new streets within the development should connect to these stubs.
- C-I-12 To increase roadway safety and maintain emergency access between Cedar Lane and Lemoore Avenue:
- Construct the extension of Cedar Lane to Lemoore Avenue as a two-lane collector roadway with restricted access on Lemoore Avenue to only allow northbound left, southbound right, and eastbound right turn movements;
  - Construct a center median along Lemoore Avenue to restrict all other movements (such as eastbound left turns from Cedar Lane onto northbound Lemoore Avenue). Further, do not provide any pedestrian crossings of Lemoore Avenue at this location;
  - Provide crosswalks across Cedar Lane at Lemoore Avenue;
  - Provide a stop control sign on the Cedar Lane approach to the intersection with Lemoore Avenue. No signalized traffic controls will be provided on Lemoore Avenue; and
  - Cul-de-sac Larish Street approximately 220 feet west of Lemoore Avenue to eliminate cut-through traffic and better facilitate southbound left turn movements into the High School parking lot.

Implementation of General Plan policies C-I-1 through C-I-3 and the above mitigation measure 3.2.4 as well as compliance with County and City codes would reduce this impact to less than significant for all alternatives.

### Impact

#### 3.2-5 Implementation of the General Plan will have an impact on pedestrian circulation and bicycling. (*Less than Significant*)

Increased traffic will mean that it may take pedestrians longer to cross streets and bicyclists may avoid traffic on arterials, increasing total travel time. Increases in traffic, particularly truck traffic, also may increase bicycling hazards. However, the proposed Plan includes policies, which are directed towards improving pedestrian and bicycle safety and operation. These policies are intended to mitigate any adverse impacts to the pedestrian and bicycle circulation system.

#### *Proposed General Plan Policies that Reduce the Impact*

The following proposed policies are specifically targeted at reducing the potential impacts on pedestrian activity and bicycling in the City.

- C-I-21 Coordinate with Caltrans and Kings Area Rural Transit to identify and implement Park & Ride sites with convenient access to public transit.

*Park & Ride areas should include secure parking for cars, motorcycles, and bicycles, and have minimal impact on neighborhoods.*

C-I-24 Provide incentives for City employees to commute by public transit, car-pool, or use alternative fuel technology vehicles.

C-I-27 Implement the Lemoore Bikeway Plan in coordination with the County's Regional Bicycle Plan, which is updated every four years.

C-I-28 Establish bicycle lanes, bike routes, and bike paths consistent with the General Plan.

*This would include establishing a new, more specific, Lemoore Bike Map.*

C-I-29 Increase bicycle safety by:

- Sweeping and repairing bicycle lanes and paths on a regular basis;
- Ensuring that bikeways are delineated and signed in accordance with Caltrans' standards, and lighting is provided, where needed;
- Providing bicycle paths or lanes on bridges and overpasses;
- Ensuring that all new and improved streets have bicycle-safe drainage grates and are kept free of hazards such as uneven pavement, gravel, and other debris;
- Providing adequate signage and markings warning vehicular traffic of the existence of merging or crossing bicycle traffic where bike routes and paths make transitions into or across roadways;
- Working with the Lemoore Union School districts to promote classes on bicycle safety in the schools; and
- Installing large sidewalks along arterial and median parkway streets so that children may ride safely away from traffic (e.g., Lemoore Avenue and Hanford-Armona Road).

C-I-30 Amend the Zoning Ordinance to require bicycle parking facilities at large commercial and industrial employer sites, including racks and lockers that are integrated into the overall site and building design.

C-I-31 Develop a series of continuous walkways within new office parks, commercial districts, and residential neighborhoods so they connect to one another.

C-I-32 Provide for pedestrian-friendly zones in conjunction with the development, redevelopment, and design of mixed-use neighborhood core areas, the Downtown area, schools, parks, and other high use areas by:

- Providing intersection "bulb outs" to reduce walking distances across streets in the Downtown and other high use areas;

- Providing pedestrian facilities at all signalized intersections;
- Providing landscaping and shade that encourages pedestrian use;
- Constructing adequately lit and safe access through subdivision sites; and
- Providing mid-block electronic warning lights and signals, where warranted, to inform motorists of the presence of pedestrians at the crosswalk.

C-I-33 Establish specific standards for pedestrian facilities to be accessible to physically disabled persons, and ensure that roadway improvement projects address mobility or accessibility for bicyclists or pedestrians.

*The City will incorporate Federal and State requirements of the Americans with Disabilities Act (ADA) into standards for circulation access and pedestrian facilities (such as provisions for ramp improvements, curb cuts, audible traffic signals, etc.)*

C-I-34 Amend the Zoning Ordinance to include standards in all new development for pedestrian circulation including: patterned concrete sidewalks across vehicular streets, signalization crossings, bulb-outs, bicycle parking and lockers integrated with parking areas, and street lighting.

No additional mitigation is needed.

### Impact

**3.2-6 Implementation of the proposed General Plan Update will create additional demand for parking facilities but on-street and off-street parking capacity will accommodate these needs. (*Less than Significant*)**

Along with increases in traffic volumes along existing roadways, development under the proposed General Plan will increase demand for on-street and off-street parking. In addition, construction of roadway improvements could result in the loss of some parking at existing developed sites.

### *Proposed General Plan Policies that Reduce the Impact*

The following proposed policies are specifically targeted at reducing the potential impacts on the circulation system.

C-I-35 Ensure that all residential development provides adequate on-site parking for residents and guests.

*As part of the Zoning Ordinance update, the City will evaluate what best practices are for parking standards and establish procedures and criteria for requiring that developers provide parking surveys where spillover parking demand could cause neighborhood impacts.*

- C-I-36 Amend the Zoning Ordinance to require large employers to implement a Traffic Demand Management program that combines parking restrictions with transit or bicycle subsidies, such as promoting carpooling, free bus passes, priority bicycle parking and car share programs.

*These requirements would apply to businesses employing more than 100 people for any single shift. They also will help the City meet greenhouse gas reduction targets.*

- C-I-37 Amend the Zoning Ordinance to allow shared parking for mixed-uses where peak parking demands do not overlap.

*Different standards may be established for downtown and mixed-use areas. Shared parking should include residential in its typical nighttime use.*

- C-I-38 Amend the City's Parking Design Standards to promote multiple benefits, including shared parking for mixed-use projects, solar panels on parking structures to generate energy for parking lot lighting, and pervious pavement for parking lots to improve groundwater recharge.

Implementation of these General Plan policies will mitigate this impact to a level that is less than significant. No further mitigation is needed.