Joint Cordova and Vineyard Community Planning Advisory Council Workshops

Jackson Corridor Master Plans Workshop #2 – Transportation

Department of Transportation
April 13, 2016
Agenda

- The General Plan Circulation Element
- The EIR Traffic Analysis
- Rural Roadways
- Transit Network and Service
- Trail Network
- Mitigation Strategy
The Circulation Element

- Sacramento County General Plan was Amended in 2011
- Guide for growth & development over the next 20 years
- Composed of numerous Elements
- Each Element includes Goals, Policies, & Implementation measures
The Circulation Element

- **The Transportation Plan - Roadways**
  - Defines the transportation network and infrastructure to support the mobility needs of the existing and proposed land uses of the General Plan.
  - Roadway and Transit Functional Classification
The Circulation Element

• **Transportation Policies**
  – Mobility
  – Roadways
  – Transit
  – Bicycle & Pedestrian Facilities
  – Transportation Systems Management
  – Rail Transportation
  – Air Transportation
  – Scenic Highways
  – Smart Growth Streets

• **79 Policies**
  – Example Policy
    “CI-3 Travel modes shall be interconnected to form an integrated, coordinated and balanced multi-modal transportation system, planned and developed consistent with the land uses to be served.”
Objectives

• Describes the traffic and circulation within the project area and the affected vicinity.

• Evaluates the impacts of the project on the transportation network.

• Provides recommendations for mitigation measures to reduce or eliminate significant impacts as a result of the project.
The EIR Traffic Analysis

The Study Area

• The study area encompasses the adjacent transportation network (roadways, intersections, freeways) that is likely to be impacted by the implementation of the project.

• The traffic consultant coordinates with County staff and other potentially affected jurisdictions.

• On large projects, the County will request an initial model run to verify the limits of the study area.
The Jackson Corridor Traffic Study

- The Study Area
  - 261 Roadway segments
  - 164 Intersections

- Coordination with:
  - Sacramento
  - Folsom
  - Rancho Cordova
  - Elk Grove
  - Caltrans
  - Connector JPA
Project Trip Generation

• Trip generation is a function of the specific land uses
  – Residential land uses (single family, multi-family) generate trips
  – Non-residential land uses (commercial, employment, schools) attracts trips

• Trip generation resources
  – Institute of Transportation Engineers (ITE) Trip Generation Manual
  – Traffic simulation model
Passenger Car Equivalents (PCE)

- PCE represents the number of passenger cars that are equivalent to a heavy truck
  - Accounts for the operational characteristics and larger size of trucks
  - Generally a PCE of 3.0 is used (range is 2.0 – 5.0)
  - Large number of Heavy trucks may require wider travel lanes, larger turning radius, and thicker roadway sections
The EIR Traffic Analysis

Project Trip Distribution

• Connecting trip origins to their destinations

  – On small projects, existing travel patterns and local knowledge are useful in assigning trip distribution
  – On large projects, a traffic simulation model will assign the trip distribution
Trip Route Assignment

• A trip will generally be made on the route that takes the least amount of time

• Factors that can affect route assignment
  – Congestion
  – Directness of path
  – Physical geometry and environment (class of facility, adjacent uses)
  – Potential delay (stop signs, traffic signals)
Level of Service (LOS)

• LOS is a letter designation (A – F) that describes a range of operating conditions on a roadway or at an intersection.

• Perceived impacts on speed, travel time, freedom to maneuver, driving comfort, delay

• LOS A (free flow condition, no delay)

• LOS F (heavy congestion, stop and go, extensive delay)

• Sacramento County utilizes a LOS E standard (Urban)
The EIR Traffic Analysis

Roadway Segment Impact

• Roadway segment capacity based on
  – Roadway characteristics (access control, shoulders)
  – Number of travel lanes

• LOS based on ADT (Average Daily Traffic) Volume
  – For a 2-lane Arterial with moderate access control LOS F represents an ADT greater than 18,000 vehicles
Intersections Impacts

- Methodology based on Highway Capacity Manual
- Utilizes an “operational analysis” method
- LOS is defined by total delay per vehicle in seconds
- For Signalized intersections: Delay greater than 80 seconds per vehicle is LOS F
- Stop Controlled Intersections: Delay greater than 50 seconds per vehicle is LOS F
Other Impacts

- Bicycle and Pedestrian Facilities
- Transit Facilities
- Safety
  - Adversely affect an existing or planned facility
  - Result in unsafe conditions
Scenarios Studied under CEQA

• **Existing Conditions**
  – Existing Conditions (based on traffic counts)
  – Existing Conditions plus Project (E+P)

• **Cumulative Conditions**
  – Cumulative Conditions
  – Cumulative Conditions plus Project (C+P)

• **Project Alternatives**

• **CEQA Alternatives**
The Jackson Corridor Traffic Study

- Existing – No Project
- Existing – Plus Project
- Existing – Plus Four Projects

- MTP Cumulative – No Project
- MTP Cumulative – Plus Four Projects

- CEQA Cumulative – No Project
- CEQA Cumulative – Plus Project
- CEQA Cumulative – Plus Four Projects

- Project Alternatives
- CEQA Alternatives

Impact ⇒ Mitigation Measure
Impact ⇒ Mitigation Measure
Standards of Significance

• An impact is significant if:
  
  – A roadway or intersection is operating at an acceptable LOS and the addition of the project traffic degrades the LOS to unacceptable LOS
  
  – A roadway or intersection is already operating at an unacceptable LOS and the addition of the project traffic increases the LOS by 0.05
Mitigation Measures

• CEQA Guidelines §15126.4(a) requires lead agencies to consider feasible mitigation measures to avoid or substantially reduce a project's significant environmental impacts
  – Widening roadways up to their General Plan Designation
  – Installing a new traffic signal or modifying an existing traffic signal
Mitigation Measures in another Jurisdiction

• County Policy - Cross Jurisdictional Impacts shall be mitigated provided that a Reciprocal Funding Agreement is entered into with that Jurisdiction
  
  – Sacramento County will mitigate impacts in another jurisdiction provided that it is agreed that the other jurisdiction mitigates for their impacts in Sacramento County
Smart Growth Principles

- **Smart Growth** advocates for compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices.
- Reduces dependence on the automobile for many trips
- Reduces VMT
- Improves air quality
Vehicle Miles Traveled (VMT)

• VMT is the total vehicle miles driven within a timeframe and geographic area.
• VMT is typically expressed as VMT/household or VMT/capita
• VMT is used when calculating Air Quality & Greenhouse Gas impacts
• The higher the VMT – the greater the impact on air quality
The EIR Traffic Analysis

Senate Bill 743 (Steinberg, 2013)

• Amends the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts.
• New criteria will require a VMT based analysis.
• Intent is to focus on GHG emissions rather than roadway capacity.
• Local jurisdictions can still condition land development projects through the entitlement process to make roadway capacity improvements.
• Guidelines in development, likely will be in effect in 2017.
Rural Roadways

• The existing roadway network in the eastern portion of the County consists of rural roadways with narrow travel lanes and no shoulders
Rural Roadways

• The proposed urban development changes the functionality of these rural roadways and introduces:

  – Increases in traffic volumes and speeds
  – Introduction of transit, pedestrians, and bicyclists
  – Increased conflicts between these varying travel modes
  – Greater roadway maintenance needs
  – Challenges for local residents
Rural Roadways

- Fourteen rural roadways affected by development in the Jackson Corridor
  - Douglas Rd
  - Eagles Nest Rd
  - Elder Creek Rd
  - Excelsior Rd
  - Florin Rd
  - Fruitridge Rd
  - Grant Line Rd
  - Happy Ln
  - Hedge Ave
  - Jackson Rd
  - Kiefer Blvd
  - Mather Blvd
  - Mayhew Rd
  - White Rock Rd
Rural Roadways

- Traditional practice: *Widen roadway when traffic exceeds 2-lane roadway capacity of 18,000 ADT*

- Proposed practice: *Establish a 6,000 ADT threshold for improvement to County Standard 12-foot traffic lanes with 6-foot paved shoulders*

  - Threshold based on studies conducted by staff on Sacramento County rural roadways and by national transportation associations.
  - Improvements would be phased to be widened in the future to minimize throw away costs.
  - Staff would monitor use of widened rural roadways to minimize secondary impacts to local residents.
Transit Network & Service

• General Plan policies for new development provide guidance to integrate land use and transportation to encourage alternative modes of travel.

• Existing transit service in the Jackson Corridor is very limited.

• The Regional Transit’s Transit Action Plan proposes three future Hi-Bus lines (contingent on additional funding):
  – Jackson Road (west of Excelsior Rd)
  – South Watt Avenue
  – Florin Road (west of Bradshaw Rd)

• Even if implemented, would not meet the General Plan policy
Transit Network & Service

• An iterative process to develop a transit network and service to connect the proposed land uses and provide connections to the Light Rail Transit (LRT) network.

• Participants included:
  – County staff
  – Regional Transit
  – Jackson Corridor project applicants
  – DKS Associates

• Separate transit networks developed to support each stand-alone project that when combined serve cohesively together.

• Service standard goal of 15-minute headways.
Transit Network & Service

Bus Service Assumptions (10/24/13)
(All Projects - beyond No Project Scenario)
Jackson Corridor Joint TIS
Transit Network & Service

Bus Service Assumptions (10/24/13)
(All Projects - beyond No Project Scenario)
Jackson Corridor Joint TIS

Assumed Bus Routes
(all routes 15 minute all day)
- Regular Bus (42 passenger)
- Rock Creek Pkwy
- Jackson Express
- Kiefer - Jackson
- Shuttle Bus (15 passenger)
- West Jackson Shuttle
- Transit Center
- Park and Ride

Routes connect to light rail at Watt / Manlove station
Route connects to Rancho Cordova employment core and Sunnys LRT station
Transit Network & Service

- **Transit Performance - 2035 MTP plus four projects**
  
  - Rock Creek Parkway – 3,000 (daily boardings)
  - Jackson Express – 11,531
  - Kiefer Jackson – 4,991
  - West Jackson shuttle – 1,489

- **RT’s Route 51 bus line** – 4,800
- **RT’s LRT Gold Line** – 21,800

- **Work trip mode split** – 4.1 %
Transit Network & Service

• **Cost to provide the transit service - 2035 MTP plus four projects**

  - Capital costs $1,100,000
  - Operational/Maintenance costs $8,500,000
    $9,600,000 (per year)

  - Dwelling Unit Equivalent (DUE) 50,700

  - Average annual cost per DUE $189 (per year)

• **Costs could be reduced by:**

  - Charging a fee to ride
  - Additional revenue from RT revenue sources and programs
Transit Network & Service

- Transit performance and costs for various transit headways:

<table>
<thead>
<tr>
<th>Headways</th>
<th>Boardings</th>
<th>Yearly Costs</th>
<th>Reduction in Boardings</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-minute</td>
<td>21,400</td>
<td>$9,600,000</td>
<td></td>
</tr>
<tr>
<td>30-minute</td>
<td>14,500</td>
<td>$4,800,000</td>
<td>32%</td>
</tr>
<tr>
<td>60-minute</td>
<td>10,500</td>
<td>$2,500,000</td>
<td>51%</td>
</tr>
</tbody>
</table>
Trail Network

Signed Routes (No Pavement Markings)
A roadway designated as a preferred route for bicycles.

Shared Lane Markings
A shared roadway with pavement markings providing wayfinding guidance to bicyclists and alerting drivers that bicyclists are likely to be operating in mixed traffic.
Trail Network

**On-Street Bike Lanes**
An on-road bicycle facility designated by striping, signing, and pavement markings.

**On-Street Buffered Bike Lanes**
Bike lanes with a painted buffer increase lateral separation between bicyclists and motor vehicles.
Trail Network

**Separated Bike Lanes**
A separated bike lane is an exclusive facility for bicyclists that is located within or directly adjacent to the roadway and that is physically separated from motor vehicle traffic with a vertical element.

**Off Street Trails / Sidewalks**
Bicycle facilities physically separated from traffic, but intended for shared use by a variety of groups, including pedestrians, bicyclists, and joggers.
Trail Network

• A community that includes a network of off-roadway trails for walking and bicycling encourages travel by an alternative mode and provides for health-oriented forms of travel and recreation

• County staff and the applicants developed an integrated trail network to link future residential communities with:
  – Schools
  – Parks
  – Transit centers
  – Employment and Commercial areas

• Connectivity to existing and future regional trails
Trail Network
Trail Network

- Hierarchy of trail cross sections:

<table>
<thead>
<tr>
<th>Regional Trail</th>
<th>Conventional Trail</th>
<th>Local Trail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectivity between projects and to other Regional trails</td>
<td>Feeder trail network to Regional trails and primary destinations within each project</td>
<td>Finer trail network connecting various land uses within each project</td>
</tr>
<tr>
<td>40-foot wide corridor</td>
<td>30-foot wide corridor</td>
<td>24-foot wide corridor</td>
</tr>
<tr>
<td>12-foot paved trail</td>
<td>10-foot paved trail</td>
<td>8-foot paved trail</td>
</tr>
<tr>
<td>2-foot DG shoulders</td>
<td>2-foot DG shoulders</td>
<td>2-foot DG shoulder (one side only)</td>
</tr>
</tbody>
</table>
Trail Network

- Enhanced crossings of major roadways
- Two bridge crossings of the Folsom South Canal
- Inclusion of Regional Trails and major enhanced crossings and bridges in the finance plan
  - Spread costs for regional trails and facilities to all users
  - Allows for implementation for entire trail segments without gaps
  - Allows for implementation when needed by the community
Trail Network

Completed section of the downtown Cultural Trail in Indianapolis, IN. (Source: Mark H. Zwoyer)
Mitigation Strategy

• Traditional practice: “You break it, you fix it”
  – General Plan Level of Service (LOS) policy
  – Each individual project treated independently
  – A single vehicle can result in funding or not funding a major improvement
  – No cost for using up existing roadway capacity
  – Unfair appropriation of funding obligation between multiple projects

• Proposed practice: “We break it, we fix it”
  – Total transportation improvements needed to support proposed projects
  – Each individual project responsible for funding their fair share based on their portion of the traffic
  – Treats each project fairly
Mitigation Strategy

• Improvement costs may be offset by other funding sources and programs:
  – SCTDF
  – Measure A Sales Tax
  – State & Federal funding programs
  – Cordova Hills SPA
  – North Vineyard SPA
  – Florin Vineyard Gap SPA
  – Cross Jurisdictional Impact fees

• Anticipates the sequencing of multiple projects approved over time
Mitigation Strategy

• Goal: Roadway improvements implemented in a timely manner to support the growth in land uses

• Traditional practice: *Roadway improvements triggered on the number of residential dwelling units (DU)*
  – Sequence of implementation pre-determined
  – No flexibility to restructure
  – May not be responsive to where actual growth occurs
Mitigation Strategy
Mitigation Strategy

• Proposed practice: *Roadway improvements triggered based on a Dynamic Implementation Tool*
  
  – Sequence of implementation based on actual development
  – Very responsive to changing conditions
  – Efficient use of transportation funding
  – Allows for better management of transportation funds
  – Can anticipate the future needs for improvements
  – Tool can be updated to reflect changing conditions
Questions?