Appendix A

Key Meetings and Presentations

Project Kick-off (February 23, 2009)
Agency Managers Status Meeting (July 22, 2009)
Public Outreach (August 25, 2009)
SANDAG Transportation Committee (September 18, 2009)
Agency Managers Status Meeting (March 24, 2010)
SANDAG Board of Directors (May 28, 2010)
Interstate 5 South Multimodal Corridor Study

Project Kickoff Meeting
February 23, 2009
Interstate 5 South Multimodal Corridor Study

I. PROJECT OVERVIEW
A. Introduction of Project Staff
B. Purpose of Meeting
C. Project Description/History
D. Purpose & Goal of Project
II. PROJECT ADMINISTRATION

A. Project Organization
   - Partnering Agencies
   - Working Groups

B. Communication Protocol
III. PROJECT SCHEDULE AND DELIVERABLES

A. Scope of Work
   - Review by Discipline
A. Review List of Deliverables
B. Review Project Schedule
C. Monthly Monitoring Tools
IV. PROJECT SAFETY REQUIREMENTS

Email notification required to Frank Rivera/Dave Kaplan prior to any site visit.

FRivera@ci.chula-vista.ca.us
DKaplan@ci.chula-vista.ca.us
V. Questions and Discussion
I-5 South Multimodal Corridor Study

SANDAG
Caltrans
Chula Vista
Manager’s Meeting

July 22, 2009
Project Background

• Chula Vista Received a SAFTEA-LU Earmark
• Collaborative Effort Between City of Chula Vista, Caltrans, SANDAG
• Evaluate All Modes in Corridor
• Recommended Alternative Will be Folded into 2050 Regional Transportation Plan Development
Project Study Area

- I-5 South Multimodal Corridor Study – SR 54 to Main Street in Chula Vista
- Caltrans I-5 South PSR – SR 15 to International Border with Mexico
Issues within I-5 South Corridor

Limited Travel Choices
Increasing Demand for Trolley Service
Multiple At-Grade Rail Crossings
Close Proximity Between Highway and Rail
Capacity Constraints for Goods Movement
Insufficient Interchange Spacing
Lack of Pedestrian and Bicycle Mobility
Population Growth and Increased Travel Demand
Nearby Environmental Resources

I-5 South Multimodal Corridor Study
Project Purpose and Need

Project Purpose:

Promote Movement of People and Goods in Corridor
Accommodate 2030 RTP Goals
Promote Intermodal Connections within Corridor
Minimize Conflicts Between Transportation Modes and Land Uses
Promote Economic Growth
Maintain or Improve Future Traffic LOS
Maintain or Improve Travel Times within the Corridor
Project Purpose and Need

Project Need:
Anticipated Growth
Increased Need for Transit and Carpool Incentives
Increasing Demand for Trolley Service
Increasing Demand for Park and Ride and Parking for Transit
Update Regional Planning Documents and Land Use Planning
Sustain Effective Goods Movement
Study Concept Alternatives for Evaluation

7 Build Alternatives Developed Containing Various Highway, Rail, and Transit Improvements

Primary Sources of Alternatives Being Considered are:

• SANDAG 2030 RTP
  • Chula Vista Planning Documents
    • Regional TCIF Proposal (South Rail Improvements)
**I-5 South Multimodal Corridor Study**

- TCIF Mainline Track Improvements
  - Centralized Track Control and Automatic Train Stop (CTC & ATS)
  - Improve Siding at Palomar Street

**LEGEND**
Concept Alternative 1

I-5 South Multimodal Corridor Study

LEGEND
• 8F + 2 HOV
8F + 2 HOV (Maintain I-5 Centerline)
Concept Alternative 1

LEGEND
- 8F + 2HOV
- Access Improvements (Ramp Metering and Aux Lanes)
- Grade Separations

I-5 South Multimodal Corridor Study
H Street Grade Separation Layout

I-5 South Multimodal Corridor Study
Cross-Sections

I-5 South Multimodal Corridor Study
Concept Alternative 1

LEGEND

- 8F + 2HOV
- Access Improvements (Ramp Metering and Aux Lanes)
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements

I-5 South Multimodal Corridor Study
Concept Alternative 2

I-5 South Multimodal Corridor Study

LEGEND
• 8F + 2HOV (Shift CL I-5 West)
8F + 2 HOV (Shift I-5 Centerline West)

NEW HOV
J ST. TO E ST.
SECTION 2

Aux Lane

8F + 2 HOV Shift I-5 CL West

Existing 8F

Draft

I-5 South Multimodal Corridor Study
Concept Alternative 2

LEGEND

- 8F + 2HOV (Shift CL I-5 West)
- Braided Ramp System

I-5 South Multimodal Corridor Study
I-5 South Multimodal Corridor Study
I-5 South Multimodal Corridor Study
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I-5 South Multimodal Corridor Study
I-5 South Multimodal Corridor Study
I-5 South Multimodal Corridor Study

North

to Palomar Street

to SR-54

L Street
J Street
H Street
E Street

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi
I-5 South Multimodal Corridor Study
I-5 South Multimodal Corridor Study
I-5 South Multimodal Corridor Study
I-5 South Multimodal Corridor Study
Concept Alternative 2

LEGEND

- 8F + 2HOV (Shift CL I-5 West)
- Braided Ramp System
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Concept Alternative 3

LEGEND

- 8F + 4 ML (Shift CL I-5 West)
- Braided Ramp System
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements

I-5 South Multimodal Corridor Study
I-5 South Multimodal Corridor Study

LEGEND

- 8F + 2HOV (Shift CL I-5 West)
- Access Improvements (Ramp Metering and Aux Lanes)
- Third LRT Mainline Track (Express Trolley)
- Freight Shared Third Mainline Track
- Increase Bus Frequency
- BRT Route 627 and Route 635
- Increased Parking Facilities
- Arterial Improvements
Concept Alternative 5

LEGEND
• 8F + 2HOV
• Access Improvements (Ramp Metering and Aux Lanes)
• LRT Mainline Track West of I-5

• Freight Only East of I-5
• Relocated Transit Stations
• Increase Bus Frequency
• BRT Route 640 (2 In-Line Stations)
• Arterial Improvements

I-5 South Multimodal Corridor Study
Concept Alternative 6

I-5 South Multimodal Corridor Study

LEGEND
• 8F + 2HOV (Shift CL I-5 West)
• Braided Ramp System
• Grade Separations
• Third Freight Mainline Track

• Increase Bus Frequency
• BRT Route 640 (2 In-Line Stations)
• Increased Parking Facilities
• Arterial Improvements
Concept Alternative 7

**I-5 South Multimodal Corridor Study**

**LEGEND**
- 8F + 2HOV
- Access Improvements
- Grade Separations
- TCIF Mainline Track Improvements
- High Speed Rail/Commuter Rail West of I-5
  - *H Street Commuter Rail Station*
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Current Project Status

✓ Monthly Working Group Meetings
  • Caltrans
  • SANDAG
  • Port of San Diego
  • Chula Vista, National City, Imperial Beach, San Diego, Coronado
  • MTS
  • Railroad Operators (SD&AE, RailAmerica)

✓ Reoccurring Technical Group Meetings
  • Traffic Working Group
  • Rail Working Group
Current Project Status

✓ 7 Concept Alternatives and No-Build Evaluated

✓ 3 Concept Alternatives Identified that Best Meet the Need and Purpose of the Study
Introduce Evaluation Framework

- Initial Screening of Alternatives

Performance Measures:

- Quantitative Measures
- Qualitative Analysis

Goal: Identify Alternative that Best Meets Need and Purpose of Study
Evaluation Framework

• Serves Peak Period Trips
• Provides Congestion Relief
• Provides Travel Time Savings
• Provides Alternatives to SOV’s
• Serves Goods Movements
• Compatible with Regional Smart Growth Planning
• Minimizes Environmental Impacts
• Capital and Operating/Maintenance Costs
Evaluation Framework

• Built and Ran Transportation Model with Specific Network and Transit Components for Each Alternative

• Applied Evaluation Criteria to Each Alternative, Including No Build Alternative

• Compared Each Alternative Relative to Other Alternatives

Goal: Identify Alternative(s) that Best Meet Need and Purpose of Study
Transportation Model Study Area

I-5 South Multimodal Corridor Study
Evaluation Results

3 Alternatives Identified as Best Meeting Need and Purpose:

• Alternative 1 (Reasonably Expected RTP-modified)

• Alternative 2 (Braided Ramps on I-5)

• Alternative 4 (Enhanced Transit)
I-5 South Multimodal Corridor Study

LEGEND

- 8F + 2HOV
- Access Improvements (Ramp Metering and Aux Lanes)
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Evaluation Highlights

• Lowest Capital and Maintenance Costs
• Lowest Potential Environmental Impacts
• Lowest Potential Community Impacts

• Highest Compatibility with Adjacent Land Uses
• Good Transit Improvements

I-5 South Multimodal Corridor Study
Concept Alternative 2

LEGEND

- 8F + 2HOV (Shift CL I-5 West)
- Braided Ramp System
- Grade Separations
- TCIF Mainline Track Improvements

- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements

I-5 South Multimodal Corridor Study
**Evaluation Highlights**

- Improved Freeway Operations
- Low Maintenance Costs (2nd of 7)
- Low Capital Costs (3rd of 7)
- Low Potential Environmental Impacts
- Low Potential Community Impacts
- Good Transit Improvements

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**I-5 South Multimodal Corridor Study**
F Street
G Street
H Street
J Street
L Street
E Street SR 54 Ramps

Concept Alternative 4

LEGEND

• 8F + 2HOV (Shift CL I-5 West)
• Access Improvements (Ramp Metering and Aux Lanes)
• Third LRT Mainline Track (Express Trolley)

I-5 South Multimodal Corridor Study

• Freight Shared Third Mainline Track
• Increase Bus Frequency
• BRT Route 627 and Route 635
• Increased Parking Facilities
• Arterial Improvements

SANDAG
City of Chula Vista
Evaluation Highlights

- Best Performing Transit Alternative
- High Potential for Increased Goods Movement
- High Compatibility with Smart Growth Planning

I-5 South Multimodal Corridor Study
Other Considerations

Alternative 3 (8F + 4ML)

Alternative 7 (High Speed Rail)
Concept Alternative 3

LEGEND

- 8F + 4 ML (Shift CL I-5 West)
- Braided Ramp System
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements

I-5 South Multimodal Corridor Study
Evaluation Highlights
• Improved Freeway Operations
• Provides Alternatives to SOV's
• Potential for Increased Goods Movement

Negative Findings
• Not Compatible with Regional Planning for Adjacent Highway Segments (8F + 2HOV planned for I-5 from SR 54 to I-8)
• Less Compatible with Adjacent Land Uses than Other Freeway Improvements
Concept Alternative 7

LEGEND
- 8F + 2HOV
- Access Improvements
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements

• High Speed Rail/Commuter Rail West of I-5
  *H Street Commuter Rail Station

I-5 South Multimodal Corridor Study

SANDAG
City of Chula Vista
Caltrans
Concept Alternative 7

**Evaluation Highlights**
- Excellent Transit Performance
- May Not Require Large Regional Investment

**Negative Findings**
- Project Development is in Early Stages
- Several Corridors Between Downtown and Otay Mesa are Being Evaluated

I-5 South Multimodal Corridor Study
Evaluation Recommendation

• Consider Alt 7 as a Design Variation Applicable to Other Alternatives
• Keep Apprised of High Speed Rail Project Development Status
• Do Not Preclude Future High Speed Rail Implementation

I-5 South Multimodal Corridor Study
Next Steps

• Discuss Evaluation and the 3 Recommend Alternatives with Project Working Group (8/3/09)

• Conduct Public Outreach (August)

• Present to SANDAG Transportation Committee (September)

• Adopt 3 Alternatives for Further Evaluation

• Proceed with Alternative Development and Secondary Screening
Open Discussion
I-5 South Multimodal Corridor Study
Public Meeting
August 25, 2009
Project Study Area

I-5 South Multimodal Corridor Study
Main Street to State Route 54
Multimodal Study

- **Multimodal** [muhl-tee-mohd-l]  
  - *adjective*  
  1. having more than one mode.

- **Mode** [mohd]  
  - *noun*  
  1. a manner of acting or doing; method; way:  
    *modern modes of transportation.*
Modes Evaluated within Corridor

- Highway (SOV and HOV)
- Local Roadway (Arterials)
- Rail Transit (Trolley)
- Bus Transit (Bus Rapid Transit, Local Bus, Arterial Rapid Transit)
- Rail Freight
- Bicycle
- Pedestrian
I-5 Corridor Study Limits: Main Street to SR-54

Main Street
Palomar Street
South Rail Corridor
I-5
SR 54
I-5 Corridor Study Limits: Main Street to SR-54

Main Street
Palomar Street
South Rail Corridor
I-5
SR 54

Main Street
Palomar Street
South Rail Corridor
I-5
SR 54

Main Street
Palomar Street
South Rail Corridor
I-5
SR 54
Issues within I-5 South Corridor

- Limited Travel Choices
- Increasing Demand for Trolley Service
- Multiple At-Grade Rail Crossings
- Close Proximity Between Highway and Rail
- Capacity Constraints for Goods Movement
- Insufficient Interchange Spacing
- Lack of Pedestrian and Bicycle Mobility
- Population Growth and Increased Travel Demand
- Nearby Environmental Resources
Project Purpose and Need

Project Purpose:

- Promote Movement of People and Goods in Corridor
- Accommodate 2030 RTP Goals
- Promote Intermodal Connections within Corridor
- Minimize Conflicts Between Transportation Modes and Land Uses
- Promote Economic Growth
- Maintain or Improve Future Traffic LOS
- Maintain or Improve Travel Times within the Corridor
Project Purpose and Need

Project Need:
- Anticipated Growth
- Increased Need for Transit and Carpool Incentives
- Increasing Demand for Trolley Service
- Increasing Demand for Park and Ride and Parking for Transit
- Update Regional Planning Documents and Land Use Planning
- Sustain Effective Goods Movement
Develop Concept Alternatives for Evaluation

- 7 Conceptual Alternatives Developed Containing Various Highway, Rail, and Transit Improvements
- Primary Sources of Alternatives Being Considered are:
  - SANDAG 2030 Regional Transportation Plan (RTP)
  - Chula Vista Planning Documents
  - South Rail Improvements - Regional Trade Corridors Improvement Fund (TCIF) (State Proposition 1B)
  - CA High Speed Rail Authority
Current Project Status

- 7 Concept Alternatives and No-Build Evaluated
- 3 Concept Alternatives Identified that Best Meet the Need and Purpose of the Study
Evaluation Framework

- Serves Peak Period Trips
- Provides Congestion Relief
- Provides Travel Time Savings
- Provides Alternatives to SOV’s
- Serves Goods Movements
- Compatible with Regional Smart Growth Planning
- Minimizes Environmental Impacts
- Capital and Operating/Maintenance Costs
Evaluation Results

- 3 Alternatives Identified as Best Meeting Need and Purpose:
  - Alternative 1 (Reasonably Expected RTP-modified)
  - Alternative 2 (Interchange Improvements on I-5)
  - Alternative 4 (Enhanced Transit with 3rd Mainline Track)
Concept Alternative 1

LEGEND

- 8F + 2HOV
- Access Improvements (Ramp Metering and Aux Lanes)
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
8F + 2 HOV = 8 Freeway Lanes and 2 High Occupancy Vehicle Lanes
Concept Alternative 1

LEGEND

- 8F + 2HOV
- Access Improvements (Ramp Metering and Aux Lanes)
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Grade Separation Potential Cross-Sections
Concept Alternative 1

LEGEND
- 8F + 2HOV
- Access Improvements (Ramp Metering and Aux Lanes)
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Concept Alternative 2

**LEGEND**
- **8F + 2HOV (Shift CL I-5 West)**
- **Braided Ramp System**
- **Grade Separations**
- **TCIF Mainline Track Improvements**
- **Increase Bus Frequency**
- **BRT Route 640 (2 In-Line Stations)**
- **Increased Parking Facilities**
- **Arterial Improvements**
I-5 Typical Cross-Sections

8F + 2 HOV (Shift I-5 Centerline)

8F + 2 HOV = 8 Freeway Lanes and 2 High Occupancy Vehicle Lanes
Concept Alternative 2

LEGEND
- 8F + 2HOV (Shift CL I-5 West) • Increase Bus Frequency
- Braided Ramp System • BRT Route 640 (2 In-Line Stations)
- Grade Separations • Increased Parking Facilities
- TCIF Mainline Track Improvements • Arterial Improvements
Braided Ramp System

North

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

to SR-54

I-5

L Street  J Street  H Street  E Street

North to SR-54
**Braided Ramp System**

North

- **0.75 Mi**
- **0.55 Mi**
- **0.50 Mi**
- **0.75 Mi**
- **0.80 Mi**

**to Palomar Street**

**I-5**

**to SR-54**

**L Street**

**J Street**

**H Street**

**E Street**
Braided Ramp System

I-5

L Street
J Street
H Street
E Street

North

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street
to SR-54

0.75 Mi 0.50 Mi
Braided Ramp System

North

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

I-5

L Street J Street H Street E Street

to SR-54
Braided Ramp System

I-5

L Street

J Street

H Street

E Street

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

to SR-54

North
Braided Ramp System

I-5

L Street 0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi E Street
to Palomar Street to SR-54

North
Braided Ramp System

North

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

to SR-54

I-5

L Street J Street H Street E Street
Braided Ramp System

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

I-5

L Street  J Street  H Street  E Street
to SR-54

North
Braided Ramp System

North

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

to SR-54

I-5

L Street J Street H Street E Street
Braided Ramp System

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

I-5

L Street J Street H Street E Street

to SR-54

North
Braided Ramp System
Braided Ramp System

I-5

L Street

J Street

H Street

E Street

0.75 Mi

0.55 Mi

0.50 Mi

0.75 Mi

0.80 Mi

to Palomar Street

to SR-54

North
Braided Ramp System

- I-5
- L Street
- J Street
- H Street
- E Street

- To Palomar Street
- To SR-54

Distances:
- 0.75 Mi
- 0.55 Mi
- 0.50 Mi
- 0.75 Mi
- 0.80 Mi

North
Braided Ramp System

North

0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

I-5

L Street J Street H Street E Street
to SR-54
Braided Ramp System

I-5

<table>
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<td>H</td>
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<tr>
<td>E</td>
<td>0.75 Mi</td>
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to Palomar Street

to SR-54

North
Braided Ramp System

I-5

L Street
0.75 Mi

J Street
0.55 Mi

H Street
0.50 Mi

E Street
0.75 Mi

0.80 Mi
to SR-54

to Palomar Street

North
Concept Alternative 2

**LEGEND**
- 8F + 2HOV (Shift CL I-5 West)
- Braided Ramp System
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Concept Alternative 4

LEGENDEL드

- **8F + 2HOV (Shift CL I-5 West)**
- **Access Improvements (Ramp Metering and Aux Lanes)**
- **Third LRT Mainline Track (Express Trolley)**
- **Freight Shared Third Mainline Track**
- **Grade Separations**
- **Increase Bus Frequency**
- **ART Route 627 and Route 635**
- **Increased Parking Facilities**
- **Arterial Improvements**
Other Considerations

- Alternative 7 (High Speed Rail)
Concept Alternative 7

LEGEND

- **8F + 2HOV**
- **Access Improvements**
- **Grade Separations**
- **TCIF Mainline Track Improvements**
- **High Speed Rail/Commuter Rail West of I-5**
  - *H Street Commuter Rail Station*
- **Increase Bus Frequency**
- **BRT Route 640 (2 In-Line Stations)**
- **Increased Parking Facilities**
- **Arterial Improvements**
Next Steps

- Present to SANDAG Transportation Committee (September 18, 2009)
- Proceed with Alternative Development and Secondary Screening of the Three Alternatives
- Develop a Project Study Report/Project Development Support (PSR/PDS) to Address Highway Components of the Three Alternatives (Caltrans)
- Develop a Project Study Report/Project Development Support (PSR/PDS) to Address Rail and Transit Components of the Three Alternatives (Chula Vista/SANDAG)
- Recommend Improvements for SANDAG’s 2050 RTP
Question and Answer
For Further Information, Contact:

- Rachel Kennedy, SANDAG  
  (619-699-1929, rke@sandag.org)

- Frank Rivera, Chula Vista  
  (619-691-5045, frivera@ci.chula-vista.ca.us)

- Linda Culp, SANDAG (High Speed Rail)  
  (619-699-6957, lcu@sandag.org)
The End

Thank You
### I-5 South Multimodal Corridor Study

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<tr>
<th>Work Completed:</th>
<th>Next Steps:</th>
<th>After I-5 South Multimodal Corridor Study:</th>
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<tbody>
<tr>
<td>• Identify Corridor Needs</td>
<td>• Conduct Engineering Technical Analysis</td>
<td><strong>EXAMPLE PROJECT DEVELOPMENT SCHEDULE</strong></td>
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<tr>
<td>• Develop Multimodal Concept Alternatives (No Build + 7 Concept Alternatives)</td>
<td>• Conduct Environmental Constraints Analysis</td>
<td>Total Project Development Time = Average 5-9 Years</td>
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<td>• Develop Evaluation Criteria</td>
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<td>• Utilize SANDAG Transportation Model</td>
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<td>• Identify 3 Concept Alternatives for Further Evaluation</td>
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<td>• Conduct Public Outreach 8/25/09</td>
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<td><strong>Develop Draft Project Report and Draft Environmental Document</strong></td>
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<td>24-36 Months</td>
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<td><strong>Circulate Draft Environmental Document/Public Comment</strong></td>
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<td><strong>Develop Final Environmental Document/Project Approval</strong></td>
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<td><strong>Construction</strong></td>
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Total project development time varies. Where projects are to be built adjacent existing communities, disturb wildlife habitat or waterways, or affect historical sites or parks, research and planning takes longer. The greater number of agencies and private interests involved, may effect approval time. Funding availability also affects project development time.
Project Study Area

I-5 South Multimodal Corridor Study

State Route 54 to Main Street
Study Participants

- Collaborative effort among Caltrans, City of Chula Vista, and SANDAG
- Ad Hoc Technical Working Group
  - Traffic Working Group
  - Rail Working Group
Modes Evaluated within Corridor

- Highway (single occupant vehicles and high occupant vehicles)
- Local roadway (arterials)
- Rail transit (trolley)
- Bus transit (bus rapid transit, local bus, arterial rapid transit)
- High speed rail/Commuter rail
- Rail freight
- Bicycle
- Pedestrian
I-5 South Corridor Study Limits: Main Street to SR 54

I-5 South Corridor Study Limits:
Main Street to SR 54
Issues within I-5 South Corridor

- Anticipated growth
- Increasing demand for Trolley service
- Multiple at-grade rail crossings
- Close proximity between highway and rail
- Capacity constraints for goods movement
- Insufficient interchange spacing
- Lack of pedestrian and bicycle mobility
- Nearby environmental resources
- Updates to regional planning documents and land use planning
I-5 South Corridor Project Purpose

- Improve movement of people and goods in corridor
- Accommodate RTP goals
- Promote intermodal connections within corridor
- Minimize conflicts between transportation modes and land uses
- Promote economic growth
- Maintain or improve future traffic LOS
- Maintain or improve travel times within the corridor
Concept Alternatives Evaluated

- 7 conceptual alternatives developed containing various roadway, rail, transit, and bicycle/pedestrian improvements
- 7 concept alternatives and the no-build evaluated
- 3 concept alternatives identified that best meet the need and purpose of the study
Evaluation Criteria

- Serves peak period trips
- Provides congestion relief
- Provides travel time savings
- Provides alternatives to SOV’s
- Serves goods movement
- Compatible with regional smart growth planning
- Minimizes environmental impacts
- Capital and operating/maintenance costs
Evaluation Results

- 3 alternatives identified as best meeting need and purpose:
  - **Alternative 1**
    (reasonably expected RTP-modified)
  - **Alternative 2**
    (interchange improvements on I-5)
  - **Alternative 4**
    (enhanced transit with 3rd mainline track)
Concept Alternative 1

LEGEND

- 8F + 2HOV
- Access Improvements (Ramp Metering and Aux Lanes)
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Concept Alternative 2

- 8F + 2HOV (Shift CL I-5 West)
- Braided Ramp System
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Braided Ramp System

North

I-5 0.75 Mi 0.55 Mi 0.50 Mi 0.75 Mi 0.80 Mi

to Palomar Street

L Street  J Street  H Street  E Street
to SR-54
I-5 Corridor Study Limits: Main Street to SR-54

I-5 South Multimodal Corridor Study
Concept Alternative 2

**LEGEND**

- 8F + 2HOV (Shift CL I-5 West)
- Braided Ramp System
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Concept Alternative 4

LEGEND

- • 8F + 2HOV (Shift CL I-5 West)
- • Access Improvements (Ramp Metering and Aux Lanes)
- • Third LRT Mainline Track (Express Trolley)
- • Freight Shared Third Mainline Track
- • Grade Separations
- • Increase Bus Frequency
- • ART Route 627 and Route 635
- • Increased Parking Facilities
- • Arterial Improvements
Other Considerations: High Speed Rail Concept Alternative 7

LEGEND
- 8F + 2HOV
- Access Improvements
- Grade Separations
- TCIF Mainline Track Improvements
- High Speed Rail/Commuter Rail West of I-5
- "H Street Commuter Rail Station"
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
Study Alternative Meetings

- Managers Meeting: July 22, 2009
- Ad Hoc Working Group: August 3, 2009
- Chula Vista City Council Information Item: August 11, 2009
- Public Outreach Meeting in Chula Vista: August 25, 2009
Next Steps

- Proceed with alternative development and refined screening of the three alternatives
- Develop a Project Study Report/Project Development Support (PSR/PDS) report to address highway components of the three alternatives (Caltrans)
- Develop a Project Study Report/Project Development Support (PSR/PDS) report to address rail and transit components of the three alternatives (Chula Vista/SANDAG)
- Recommend Improvements for evaluation in the SANDAG 2050 RTP
Action Requested

- The Transportation Committee is asked to approve the three recommended transportation alternatives for additional study.
I-5 South Multimodal Corridor Study
Agency Management Meeting
March 24, 2010
Project Study Area

I-5 South Multimodal Corridor Study

Caltrans I-5 South PSR/PDS
San Ysidro to I-15

SANDAG/Chula Vista
I-5 Corridor Study
Main Street to State Route 54
Study Participants

- Collaborative effort among Caltrans, City of Chula Vista, and SANDAG
- Ad Hoc Technical Working Group
  - Traffic Working Group
  - Rail Working Group
Modes Evaluated within Corridor

- Highway (single occupant vehicles and high occupant vehicles)
- Local roadway (arterials)
- Rail transit (Trolley)
- Bus transit (bus rapid transit, local bus, arterial rapid transit)
- High speed rail/Commuter rail
- Bicycle
- Pedestrian
- Freight rail
I-5 South Corridor Study Limits: Main Street to SR 54
Issues within I-5 South Corridor

- Anticipated growth
- Capacity constraints for goods movement
- Close proximity between highway and rail
- Increasing demand for Trolley service
- Insufficient interchange spacing
- Lack of pedestrian and bicycle mobility
- Multiple at-grade rail crossings
- Nearby environmental resources
- Updates to regional planning documents and land use planning
I-5 South Corridor Project Purpose

- Accommodate RCP and RTP goals
- Improve movement of people and goods in corridor
- Maintain or improve future traffic LOS
- Maintain or improve travel times within the corridor
- Minimize conflicts between transportation modes and land uses
- Promote economic growth
- Promote intermodal connections within corridor
Initial Concept Alternatives Evaluation

- Initial evaluation studied no-build and 7 concept alternatives containing various roadway, rail, transit, and bicycle/pedestrian improvements
  - *Alternative 1* (reasonably expected RTP-modified)
  - *Alternative 2* (RTP-modified w/ interchange improvements on I-5)
  - *Alternative 3* (RTP-modified and 8+4 ML on I-5)
  - *Alternative 4* (RTP-modified w/ enhanced transit & 3rd track)
  - *Alternative 5* (RTP-modified with LRT tracks west of I-5)
  - *Alternative 6* (RTP including 3rd mainline track for freight)
  - *Alternative 7* (RTP-modified with HSR west of I-5)
Initial Screening Evaluation Criteria

- Capital and operating/maintenance costs
- Compatible with regional smart growth planning
- Minimizes environmental impacts
- Provides alternatives to SOV’s
- Provides congestion relief
- Provides travel time savings
- Serves goods movement
- Serves peak period trips
Concept Alternatives Narrowed for Secondary Screening

- Concept alternatives were identified that best meet the need and purpose of the study
- Transportation Committee approved 3 concept alternatives for further study on 9/18/09
  - **Alternative 1** (reasonably expected RTP-modified)
  - **Alternative 2** (RTP-modified w/ interchange improvements on I-5)
  - **Alternative 4** (RTP-modified w/ enhanced transit and 3rd track)
- Secondary evaluation has been conducted and rankings have been prepared
Concept Alternative 1

LEGEND
• 8F + 2HOV
• Access Improvements (Ramp Metering and Aux Lanes)
• Grade Separations
• TCIF Mainline Track Improvements
• Increase Bus Frequency
• BRT Route 640 (2 In-Line Stations)
• Increased Parking Facilities
• Arterial Improvements
• Mean High Tide Line (MHT)
Concept Alternative 2

LEGEND

- 8F + 2HOV (Shift CL I-5 West)
- Braided Ramp System
- Grade Separations
- TCIF Mainline Track Improvements
- Increase Bus Frequency
- BRT Route 640 (2 In-Line Stations)
- Increased Parking Facilities
- Arterial Improvements
- Mean High Tide Line (MHT)
Concept Alternative 4

LEGEND
- 8F + 2HOV (Shift CL I-5 West)
- Access Improvements (Ramp Metering and Aux Lanes)
- Third LRT Mainline Track (Express Trolley)
- Freight Shared Third Mainline Track
- Grade Separations
- Increase Bus Frequency
- ART Route 627 and Route 635
- Increased Parking Facilities
- Arterial Improvements
- Mean High Tide Line (MHT)
Technical and Environmental Evaluation and Studies

- Cost Estimating for Concept Alternatives (Capital, Operations, Maintenance)
- Preliminary Environmental Study
- Regional Transportation Model Runs for Concept Alternatives (2020 and 2030)
- Shared LRT/Freight Rail Improvements Project Initiation Document (PID)
- Traffic Technical Report
Secondary Screening Evaluation Criteria

- Freeway Segment Capacity Analysis
- Ramp Capacity Analysis
- Weaving Analysis
- Intersection Capacity Analysis
- Interchange Spacing
- Cost Effectiveness Index
- Regional Transportation Model - Multimodal
Secondary Screening Evaluation Criteria

- Natural Resources Impact
- Potential for Increased Goods Movement
- Promotes Smart Growth
- Community Impact
Secondary Screening Evaluation Rankings

1. *Alternative 2* (RTP-modified w/ interchange improvements on I-5)

2. *Alternative 4* (RTP-modified with enhanced transit and 3rd track)

3. *Alternative 1* (reasonably expected RTP-modified)
Next Steps

- Meet with I-5 South Ad Hoc Working Group on 4/5/10
- Present to Transportation Committee on 4/16/10
- Provide input for 2050 RTP development
- Caltrans continue development of I-5 South PSR/PDS
- Develop prioritization recommendations for Alternative components
Open Discussion
INTERSTATE 5 MULTIMODAL CORRIDOR STUDY: RECOMMENDED ALTERNATIVE

Introduction

SANDAG, in collaboration with the City of Chula Vista and Caltrans, is conducting an Interstate 5 (I-5) Multimodal Corridor Study (Study) to examine potential transportation improvements between State Route 54 (SR 54) and Main Street in the City of Chula Vista. This Study will complement a larger effort by Caltrans to prepare a highway Project Study Report (PSR) for a longer segment of I-5 from SR 15 to the international border with Mexico. The I-5 South Multimodal Corridor Study was initiated in February 2009. On September 18, 2009, the Transportation Committee recommended three alternatives for further study. At its May 7, 2010, meeting the Transportation Committee was briefed on the analysis of these alternatives and recommended that the Board of Directors approve Alternative 2 for consideration in the 2050 Regional Transportation Plan (RTP) network development.

Recommendation

The Transportation Committee recommends that the Board of Directors approve Alternative 2 of the I-5 South Multimodal Corridor Study for consideration in the development of the 2050 Regional Transportation Plan.

Approved by the Board of Directors May 28, 2010

Discussion

Study Background

The Study is evaluating multimodal improvements to accommodate current and future traffic demand including freeway and interchange improvements, light rail transit, and freight rail services running parallel to I-5, and bus transit/pedestrian/bicycle circulation adjacent to I-5. This study proposes capital improvements with estimated costs and a conceptual phasing plan for financing and construction. The study effort is being led by the City of Chula Vista and SANDAG, with collaboration from Caltrans. A consultant firm has been hired to perform planning and preliminary engineering work for the Study.

An Ad Hoc Technical Working Group was established to provide input on various aspects of the Study. The working group, which meets on a monthly basis, includes staff from Caltrans, the City of Chula Vista, City of Coronado, City of Imperial Beach, City of National City, City of San Diego, Metropolitan Transit System, Port of San Diego, San Diego Imperial Valley Railroad, Burlington Northern Santa Fe (BNSF) Railway, California Northern Railroad - RailAmerica, and SANDAG. Additionally, separate Rail and Traffic Working Group meetings have been held to focus on specific traffic and rail operational issues.
Initially, seven build alternatives and a no-build alternative were evaluated utilizing quantitative and qualitative criteria that utilized SANDAG transportation modeling data and evaluated each alternative’s ability to: serve peak-period trips, provide congestion relief and travel time savings, serve goods movement, support smart growth plans, as well as minimize environmental impacts and capital and operating/maintenance costs. At its September 18, 2009, meeting the Transportation Committee recommended that Alternatives 1, 2, and 4 move forward for additional study (see Attachment 1).

- Alternative 1 contains many improvements included in the 2030 RTP Reasonably Expected Revenue scenario, including the addition of two I-5 high-occupancy-vehicle (HOV) lanes; freeway access improvements (auxiliary lanes and ramp metering); Bus Rapid Transit (BRT) Route 640; increased local bus frequency; South Line rail track improvements; rail grade separations at E Street, H Street, and Palomar Street; increased transit parking facilities; and bicycle and pedestrian infrastructure. This alternative has an estimated capital cost of $221 million and an annual operating and maintenance cost of $610,000.

- Alternative 2 builds on the improvements contained in Alternative 1 with the modification of shifting the I-5 centerline to the west and the addition of a braided ramp system to improve interchange spacing and function. Alternative 2 has an estimated capital cost of $430 million and an annual operating and maintenance cost of $650,000.

- Alternative 4 offers additional transit improvements. This alternative includes the two HOV lanes, rail grade separations, increased local bus service, and freeway access improvements included in Alternative 1, but also includes a third main rail line that would be used for peak-period, peak-direction express Trolley service and freight rail at night. This alternative also includes two additional Arterial Rapid bus routes that would provide east-west bus service. Alternative 4 has an estimated capital cost of $416 million and an annual operating cost of $2,761,000.

**Alternative Evaluation and Ranking**

A number of technical studies and an initial environmental assessment were conducted for the no-build and three build alternatives. The SANDAG regional transportation model was run for the years 2020 and 2030 to obtain travel and mode share data. These results were extrapolated for the 2035 study horizon year. The Traffic Technical Report analyzed this information and provides detailed traffic analysis for the freeway, interchanges, and local streets within the study area.

The initial environmental assessment analyzed the potential effect of the build and no-build alternatives on air quality, biological resources, community access, cultural resources, geologic/seismic hazards, hazardous waste/materials hydrology, land use, noise, paleontology, visual resources, and water quality. Information from this study was integrated into the qualitative criteria utilized to rank the alternatives.

A detailed light rail transit/freight rail improvements Project Initiation Document (PID) was prepared to analyze the proposed third rail line for LRT/freight rail included in Alternative 4. The PID also studied grade-separated rail crossings at E, H, and Palomar Streets, both with and without a third rail line. The PID provided the recommended third rail configuration included in Alternative 4.

Cost estimates, which include capital, operating, and maintenance costs, were prepared for the three build alternatives.
A more detailed second set of criteria was utilized to evaluate the no-build and three build alternatives. The quantitative and qualitative criteria analyzed capacity of various components of the transportation system, cost-effectiveness, natural resource and community impacts, promoting smart growth, and multimodal balance. The criteria methodology and rankings of the alternatives are detailed in Attachments 2 and 3, respectively.

Summary of Findings

The alternatives were evaluated, scored, and ranked utilizing quantitative and qualitative criteria with data provided from the recent technical efforts. The alternatives ranked as follows, from highest to lowest: Alternative 2, Alternative 4, Alternative 1, and no-build.

Alternative 2, which includes the addition of two HOV lanes; freeway access improvements (auxiliary lanes and ramp metering); a braided ramp interchange system; BRT Route 640; increased local bus frequency; South Line rail track improvements; rail grade separations at E Street, H Street, and Palomar Street; increased transit parking facilities; and bicycle and pedestrian improvements, scored well in all categories and outranked the other alternatives in the areas of freeway ramp capacity, weaving, and interchange spacing.

Alternative 4, which includes a proposed third main rail line that would be used for peak-period, peak-direction express Trolley service and freight rail at night, as well as two additional east-west Arterial Rapid bus routes, scored well in most categories. It ranked lower that Alternative 2 in the categories of ramp capacity, weaving, and interchange spacing, but scored higher in the areas of multimodal transportation, increased potential for goods movement, and promoting smart growth. While Alternative 4 performed well in a number of categories, concerns remain as to the feasibility of constructing and operating express Blue Line Trolley service both within the study area and along the remainder of the route. Operational improvements are planned for freight rail through the Proposition 1B Trade Corridors Improvement Fund Program, which are anticipated to satisfy capacity needs for the foreseeable future. Projected increases in Trolley ridership and freight rail demand within the study area analysis did not justify the addition of a third line within the 2035 horizon year of this Study.

Alternative 1 scored highest in cost-effectiveness and natural resources and community impacts, but would not result in the same level of benefits in systems capacity and performance.

Staff met with management staff from the City of Chula Vista, Caltrans, the Metropolitan Transit System, and SANDAG on March 24, 2010, and with the Study Ad Hoc Working Group on April 5, 2010, and shared the results of the analysis. Both groups supported the recommendation of Alternative 2 for inclusion in the 2050 RTP network development. It also was agreed that additional transit routes serving the study area could be added as per the recommendations of the ongoing Urban Area Transit Strategy. The Arterial Rapid bus routes included in Alternative 4 also could be incorporated into the recommended alternative, subject to subsequent analysis.
**Next Steps**

Pending approval by the Board of Directors, the projects included in Alternative 2 will be incorporated into the 2050 RTP network development process. The final Study report is expected in fall 2010. The recommendations of the Study also will be carried forward and incorporated into the Caltrans I-5 South PSR between SR 15 and the international border.

GARY L. GALLEGOS  
Executive Director

Attachments:  
1. Study Concept Alternatives  
2. Project Evaluation Criteria Summary  
3. Project Evaluation Criteria Rankings

Key Staff Contact: Rachel Kennedy, (619) 699-1929, rke@sandag.org

Funds are budgeted in Work Element #3330200
Quantitative Criteria Methodology

Freeway segment capacity analysis: This criterion evaluates average a.m. peak, p.m. peak, and daily freeway volume to capacity (v/c) ratios. The freeway segment capacity analysis methodology is outlined in the Caltrans Highway Design Manual. The inputs to the procedure are as follows:

- One-way total volume on freeway
- Number of lanes
- Hourly capacity expressed in passenger cars per hour per lane
- Percent Trucks

The procedure produces a v/c ratio for each alternative. The build alternative v/c ratios are compared with the no-build alternative to determine which alternative achieves the optimal level of service.

Ramp capacity analysis: This criterion evaluates average a.m. peak, p.m. peak, and daily v/c ratios for all freeway ramp junctions along the mainline of the study area. The methodology used is similar to the freeway capacity analysis procedure described above. However, the hourly capacity proposed for ramps is 1,500 vehicles per hour per lane, which corresponds with guidance from the Caltrans Highway Design Manual.

The procedure produces a v/c ratio for each alternative. The build alternative v/c ratios are compared with the no-build alternative to determine which alternative achieves the optimal level of service.

Weaving analysis: This criterion evaluates average a.m. peak, p.m. peak, and daily v/c ratios for all auxiliary lanes and outside lanes in the study area for 2035. The weaving analysis methodology is outlined in Topic 504 of the Caltrans Highway Design Manual. The inputs to the procedure include the following:

- Hourly traffic volumes for the freeway mainline, on-ramp, off-ramp, and for through traffic traveling from the on-ramp to the off-ramp
- Percentage of through vehicles in the outside mainline lane within the weaving section
- Percentage of on-ramp and off-ramp traffic present in the auxiliary lane and the outside mainline lane at various points along the weaving section, based on figures and tables in the Highway Design Manual
- Hourly capacity expressed in passengers cars per hour per lane
- Percent trucks

This procedure produces a v/c ratio for each alternative. The build alternative v/c ratios are compared with the no-build alternative to determine which alternative achieves the optimal level of service.

Intersection capacity analysis: This criterion measures average a.m. peak, p.m. peak, and daily delays for the current and maximum possible intersection configurations in the study area. The
delays are compared with the no-build scenario to determine which alternative provides the greatest reduction in delays at intersections.

**Interchange Spacing:** This criterion analyzed all freeway-to-freeway interchanges and local street interchanges in the study area to determine which alternatives meet the mandatory design standard for minimum interchange spacing (2 miles) per Section 501.3 of the Caltrans Highway Design Manual.

**Cost-Effectiveness Index:** This criterion weighed the total expected project cost against the total expected benefit for each of the alternatives. The annualized overall cost was measured as annualized capital cost + operations and maintenance. Project benefit was measured as:

1. The change in annual person hours traveled compared to the no build scenario.
2. The change in daily average speed compared to the no build scenario.

**Regional Transportation Model-Multimodal:** Average Daily Traffic forecasts were obtained from model runs of the SANDAG Regional Transportation Model for the no-build and build alternatives. Travel analysis for single-occupant vehicles, high-occupant vehicles, transit, school bus and non-motorized modes was conducted for existing (2009) conditions, Opening Year (2020) conditions, and Horizon Year (2035) conditions to determine which alternative contributed to the greatest reduction in single-occupant vehicle trips and greatest use of alternative modes.

**Qualitative Criteria Methodology**

**Natural Resource Impact:** An Initial Environmental Assessment (IEA) was conducted to identify the potential impacts of the no-build and build alternatives on air quality, biological resources and cultural resources. Each alternative was ranked under each category on a scale of 20-100 based on the following potential impact levels:

- High potential impact (20 points)
- Moderate potential impact (40 points)
- Low potential impact (60 points)
- No impact (80 points)
- No impact/benefit (100 points)

The totals were added for each category and weighted (100 points possible) for each alternative to determine which scenario has the least potential impact to natural resources.

**Potential for Increased Goods Movement:** This criterion evaluated the potential that each alternative provided for increased goods movement. Projects received a High (100 points), Medium (80 points), or Low (60 points) score based on the following criteria:

- Low = Enhances goods movement capacity through additional freeway capacity. Includes TCIF South Rail Freight Improvements.
- Medium = Provides measurable improvements to current goods movement capacity (through higher freeway capacity due to freeway and braided ramp improvements).
• High = Provides significant improvements to current goods movement capacity (through additional freeway capacity and additional third rail mainline track).

**Promotes Smart Growth:** This criterion evaluated each alternative’s potential for promoting and supporting Smart Growth principles. Projects received a High (100 points), Medium (80 points), or Low (60 points) score based on the following criteria:

- Low = Supports smart growth
- Medium = Promotes smart growth via freeway improvements and enhanced transit, including Bus Rapid Transit
- High = Significantly increases smart growth potential via freeway improvements and enhanced transit, including arterial rapid transit and light rail transit (Express Trolley)

**Community Impact:** Similar to the natural resource impacts, the Initial Environmental Assessment identified a variety of potential land use and community impacts. The no-build and build alternatives were ranked under each category on a scale of 20-100 based on the following potential impact levels:

- High potential impact (20 points)
- Moderate potential impact (40 points)
- Low potential impact (60 points)
- No impact (80 points)
- No impact/benefit (100 points)

The totals were added and weighted (100 points possible) for each alternative to determine which scenario has the least potential impact to land use and community.
## I-5 South Multimodal Corridor Study
### Alternative Evaluation - DRAFT
### SUMMARY

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### Alternatives

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Prepared By: AECOM

4/6/10