

PRELIMINARY  
**ALTERNATIVE PACKAGES**  
C O L U M B I A R I V E R C R O S S I N G



**Updated: 08/22/06**

## Preliminary Alternative Packaging Process

The selected highway and transit ideas have been combined into 12 preliminary alternative packages to test how they perform together. Testing these alternative packages will highlight the strengths and weaknesses of individual components, and identify the most promising combinations. Each alternative package includes both a river crossing and transit component as well as components to improve safety, freight movement, highway operations and bicycle and pedestrian access. A “no action” package will be studied, and will serve as a baseline for comparisons. Later this year, high-performing components will be repackaged to build three to four alternatives that offer a range of strong solutions. These most promising alternatives will be analyzed in detail to determine cost, engineering design, and environmental and community impacts. A full report of this analysis, called the Draft Environmental Impact Statement, is expected to be complete at the end of 2007.

## Bridge Crossing and Public Transportation Options Selected for Review

The project team is investigating many types of solutions to safety and congestion problems in the Columbia River Crossing project area. The team started with 23 ideas to improve or replace the Interstate Bridge and 14 ideas to improve transit service between Vancouver and Portland.

Staff and the 39-member task force worked to reduce the number of ideas for additional analysis. The following river crossing ideas are being further studied:

- Mid-level replacement bridge (RC-3, RC-4)
- Mid-level supplemental bridge downstream of existing structure (RC-9)
- Arterial crossing combined with improvements to I-5 (RC-23)

The following public transit ideas will be further studied:

- Express buses (TR-1, TR-2)
- Bus rapid transit (TR-3, TR-4)
- Light rail (TR-5)



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# Updates to Alternative Package Descriptions

From original July 12, 2006 Task Force meeting materials.

- |                |  |
|----------------|--|
| <b>Added</b>   | Alternative Package 5–Supplemental Bridge for I-5; Bus Rapid Transit on Existing Bridge<br><b>Transit: Express bus in managed lanes across new bridge</b>  |
| <b>Edited</b>  | Alternative Package 6–Supplemental Bridge for I-5; Bus Rapid Transit Lite on Existing Bridge<br><b>Transit: “Bus Rapid Transit Lite service from Clark County park and ride lots to downtown Portland in general purpose and managed lanes”</b>  |
| <b>Edited</b>  | Alternative Package 8–Replacement Bridge for I-5 with Light Rail and Express Bus<br><b>Bicycle and Pedestrian Improvements: “Facilities on the new bridge with enhanced connections to North Portland, Hayden Island and downtown Vancouver”</b>   |
| <b>Edited</b>  | Alternative Package 9–Replacement Bridge for I-5 with Light Rail<br><b>Bicycle and Pedestrian Improvements: “Facilities on the new bridge with enhanced connections to North Portland, Hayden Island and downtown Vancouver”</b>   |
| <b>Edited</b>  | Alternative Package 10–Replacement Bridge for I-5 with Bus Rapid Transit<br><b>Bicycle and Pedestrian Improvements: “Facilities on the new bridge with enhanced connections to North Portland, Hayden Island and downtown Vancouver”</b>   |
| <b>Edited</b>  | Alternative Package 11–Replacement Bridge for I-5 with Bus Rapid Transit Lite<br><b>Transit: “Bus Rapid Transit Lite service from Clark County park and ride lots to downtown Portland in general purpose and managed lanes”</b><br><b>Bicycle and Pedestrian Improvements: “Facilities on the new bridge with enhanced connections to North Portland, Hayden Island and downtown Vancouver”</b> |
| <b>Edited</b>  | Alternative Package 12–Replacement Bridge for I-5 with Express Bus<br><b>Bicycle and Pedestrian Improvements: “Facilities on the new bridge with enhanced connections to North Portland, Hayden Island and downtown Vancouver”</b>   |
| <b>Deleted</b> | Alternative Package 12–Replacement Bridge for I-5 with Express Bus<br><b>Highways: “Managed lanes on I-5 for transit and HOV use between 134th and Delta Park”</b>   |

# ALTERNATIVE PACKAGE 1

 C O L U M B I A R I V E R C R O S S I N G 

## No Action

### River Crossing

No new river crossing or improvements to the existing bridges  
I-5 traffic remains on existing bridges

### Transit

No changes to existing local and express bus transit,  
other than growth and/or reduction in service  
consistent with long term plans by C-TRAN and TriMet

~

Express bus

~

Local bus

### Transportation System/Transportation Demand Management

Basic level

### Highways

Currently planned and programmed projects throughout the region move forward, consistent with Metro's Regional Transportation Plan and RTC's Metropolitan Transportation Plan. Planned improvements to I-5 between Delta Park and Lombard Avenue in Oregon will occur.

### Freight

No freight-specific improvements

### Bicycle/Pedestrian

No specific improvements





## Legend

- Arterial Lanes
- Managed Lanes/Freight Lane
- New Potential Transit Alignments
- Safety and Capacity Improvements
- Existing/Potential Transit Station
- Reconfigured Interchange
- 🚗
 New Potential Park and Ride

## Transportation System Management/Transportation Demand Management Focus

### River Crossing

No new river crossing or improvements to the existing bridges

~

I-5 traffic remains on existing bridges

### Transit

Existing express bus and local bus service would be increased from current levels.

Transit service would continue to use general purpose travel lanes.

~

Express bus

~

Local bus

### Transportation System/Transportation Demand Management

Aggressive level

### Highways

Targeted safety improvements in high accident areas

~

Currently planned and programmed projects throughout the region move forward, consistent with Metro's Regional Transportation Plan and RTC's Metropolitan Transportation Plan. Planned improvements to I-5 between Delta Park and Lombard Avenue in Oregon will occur.

~

Managed lanes on I-5 for HOV and transit between 134th and SR 500

### Freight

No freight-specific improvements

### Bicycle/Pedestrian








Improvements on the existing bridges with enhanced connections to North Portland, Hayden Island and downtown Vancouver



# Transportation System Management/ Transportation Demand Management Focus



## Legend

- |   |                                  |   |                                    |
|---|----------------------------------|---|------------------------------------|
|  | Arterial Lanes                   |  | New Potential Park and Ride        |
|  | Managed Lanes/Freight Lane       |  | Existing/Potential Transit Station |
|  | New Potential Transit Alignments |  | Reconfigured Interchange           |
|  | Safety and Capacity Improvements |   |                                    |

## Transit Emphasis **Supplemental Bridge for Arterial Traffic with Light Rail**

### **River Crossing**

New arterial bridge to the west that also carries light rail

~

Existing bridges carry I-5 traffic

### **Transit**

Extend MAX Yellow Line light rail to north of downtown Vancouver

~

Express Bus

~

Local bus

### **Transportation System/Transportation Demand Management**

Aggressive level

### **Highways**

Targeted safety improvements in high accident areas

~

Arterial connections between Marine Drive, Hayden Island  
and downtown Vancouver

~

Remove Hayden Island interchange;  
no direct access to Hayden Island from I-5

### **Freight**

Freight bypass on-ramp lanes at key interchanges to be determined

### **Bicycle and Pedestrian Improvements**










Improvements on the existing bridges with enhanced connections  
to North Portland, Hayden Island and downtown Vancouver







## Legend

- |   |                                     |  |                                       |
|---|-------------------------------------|--|---------------------------------------|
|  | Existing Bridge                     |  | New Potential Park and Ride           |
|  | Supplemental Bridge                 |  | Existing/Potential Light Rail Station |
|  | Arterial Lanes                      |  | Reconfigured Interchange              |
|  | Managed Lanes/Freight Lane          |  |                                       |
|  | New Potential Light Rail Alignments |  |                                       |
|  | Safety and Capacity Improvements    |  |                                       |

## Balanced Transit/Highway Emphasis Supplemental Bridge for I-5; Light Rail on Existing Bridge

### River Crossing

New I-5 bridge west of existing bridge

~

Existing bridges carry light rail and arterial traffic

### Transit

Extend MAX Yellow Line light rail to north of downtown Vancouver

~

Local bus

### Transportation System/ Transportation Demand Management

Aggressive level

### Highways

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, SR-14,

Mill Plain, 4th Plain, SR 500 and 39th

~

Arterial connections between Marine Drive,

Hayden Island and downtown Vancouver

~

Remove Hayden Island interchange;  
no direct access to Hayden Island from I-5

~

Managed lanes on I-5 for HOV and/or freight use between 134th and Delta Park

### Freight

Potential managed lanes for freight

~

Freight bypass on-ramp lanes at key interchanges to be determined

### Bicycle and Pedestrian Improvements

Improvements on the existing bridges with enhanced connections  
to North Portland, Hayden Island and downtown Vancouver



# Supplemental Bridge for I-5; Light Rail on Existing Bridge



## Legend

- |  |   |  |                                       |
|--|---|--|---------------------------------------|
|  | Existing Bridge                             |  | New Potential Park and Ride           |
|  | Supplemental Bridge                         |  | Existing/Potential Light Rail Station |
|  | Arterial Lanes                              |  | Reconfigured Interchange              |
|  | Managed Lanes/Freight Lane                  |  |                                       |
|  | New Potential Light Rail Transit Alignments |  |                                       |
|  | Safety and Capacity Improvements            |  |                                       |

# ALTERNATIVE PACKAGE 5

~ C O L U M B I A R I V E R C R O S S I N G ~

## Balanced Transit/Highway Emphasis Supplemental Bridge for I-5; Bus Rapid Transit on Existing Bridge River Crossing

New I-5 bridge west of existing bridge

~

Existing bridges carry Bus Rapid Transit and arterial traffic

### Transit

Bus Rapid Transit in dedicated lanes from north of downtown Vancouver to Delta Park

~

Express bus in managed lanes across new bridge

~

Local bus

### Transportation System/Transportation Demand Management

Aggressive

### Highways

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, SR-14, Mill Plain, 4th Plain, SR 500 and 39th

~

Arterial connections between Marine Drive, Hayden Island and downtown Vancouver

~

Remove Hayden Island interchange; no direct access to Hayden Island from I-5

~

Managed lanes on I-5 for HOV and/or freight use between 134th and Delta Park

### Freight

Potential managed lanes for freight

~

Freight bypass on-ramp lanes at key interchanges to be determined

### Bicycle and Pedestrian Improvements










Improvements on the existing bridges with enhanced connections to North Portland, Hayden Island and downtown Vancouver



# Supplemental Bridge for I-5; Bus Rapid Transit on Existing Bridge



## Legend

- |   |  |  |  |
|---|--|--|--|
|  | Existing Bridge                            |   | New Potential Park and Ride                  |
|  | Supplemental Bridge                        |  | Existing/Potential Bus Rapid Transit Station |
|  | Arterial Lanes                             |  | Reconfigured Interchange                     |
|  | Managed Lanes/Freight Lane                 |  |  |
|  | New Potential Bus Rapid Transit Alignments |  |  |
|  | Safety and Capacity Improvements           |  |  |

**Balanced Transit/Highway Emphasis  
Supplemental Bridge for I-5;  
Bus Rapid Transit Lite on Existing Bridge  
River Crossing**

New I-5 bridge (west)

~

Existing bridges carry Bus Rapid Transit Lite and arterial traffic

**Transit**

Bus Rapid Transit Lite service from Clark County park and ride lots to downtown Portland in general purpose and managed lanes

~

Local bus

**Transportation System/Transportation Demand Management**

Aggressive

**Highways**

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, SR-14,  
Mill Plain, 4th Plain, SR 500 and 39th

~

Arterial connections between Marine Drive,  
Hayden Island and downtown Vancouver

~

Remove Hayden Island interchange;  
no direct access to Hayden Island from I-5

~

Managed lanes on I-5 for HOV and/or freight use between 134th and Delta Park

**Freight**

Potential managed lanes for freight

~

Freight bypass on-ramp lanes at key interchanges to be determined

**Bicycle and Pedestrian Improvements**

Improvements on the existing bridges with enhanced connections to North Portland, Hayden Island and downtown Vancouver



# Supplemental Bridge for I-5; Bus Rapid Transit Lite on Existing Bridge



## Legend

- |  |   |  |   |
|--|---|--|---|
|  | Existing Bridge                                 |  | New Potential Park and Ride                       |
|  | Supplemental Bridge                             |  | Existing/Potential Bus Rapid Transit Lite Station |
|  | Arterial Lanes                                  |  | Reconfigured Interchange                          |
|  | Managed Lanes/Freight Lane                      |  |   |
|  | New Potential Bus Rapid Transit Lite Alignments |  |   |
|  | Safety and Capacity Improvements                |  |   |

## Vehicle Capacity Emphasis Supplemental Bridge for I-5 and Express Bus

### River Crossing

New I-5 bridge west

~

Existing bridges carry arterial traffic

### Transit

Express bus service from new and expanded Clark County  
park and ride lots to downtown Portland

~

Local bus

### Transportation System/Transportation Demand Management

Aggressive

### Highways

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, SR-14,  
Mill Plain, 4th Plain, SR 500 and 39th

~

Arterial connections between Marine Drive,  
Hayden Island and downtown Vancouver

~

Remove Hayden Island interchange;  
no direct access to Hayden Island from I-5

~

Managed lanes on I-5 for HOV and/or freight use between 134th and Delta Park

### Freight

No freight-specific improvements

### Bicycle and Pedestrian Improvements

Improvements on the existing bridges with enhanced connections  
to North Portland, Hayden Island and downtown Vancouver














# Supplemental Bridge for I-5 and Express Bus



## Legend

- |   |                                  |   |                                    |
|---|----------------------------------|---|------------------------------------|
|  | Existing Bridge                  |  | New Potential Park and Ride        |
|  | Supplemental Bridge              |  | Existing/Potential Transit Station |
|  | Arterial Lanes                   |  | Reconfigured Interchange           |
|  | Managed Lanes/Freight Lane       |   |                                    |
|  | New Potential Transit Alignments |   |                                    |
|  | Safety and Capacity Improvements |   |                                    |

# ALTERNATIVE PACKAGE 8

~ C O L U M B I A R I V E R C R O S S I N G ~

## Balanced Transit/Highway Emphasis Replacement Bridge for I-5 with Light Rail and Express Bus

### River Crossing

New bridge (west) with light rail, general purpose lanes and managed lanes

### Transit

Extend MAX Yellow Line light rail to north of downtown Vancouver

~

Express bus in managed lanes across new bridge

~

Local bus

### Transportation System/Transportation Demand Management

Aggressive

### Highways

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, Hayden Island,  
SR-14, Mill Plain, 4th Plain, SR 500 and 39th

~

Managed lanes on I-5 for transit and HOV use between 134th and Delta Park

### Freight

No freight-specific improvements

### Bicycle and Pedestrian Improvements

Facilities on the new bridge with enhanced connections  
to North Portland, Hayden Island and downtown Vancouver



# Replacement Bridge for I-5 with Light Rail and Express Bus



## Legend

- Existing Bridge (removed)
- Replacement Bridge
- Arterial Lanes
- Managed Lanes/Freight Lane
- New Potential Transit Alignments
- Safety and Capacity Improvements
- New Potential Park and Ride
- Existing/Potential Light Rail Station
- Reconfigured Interchange

## Balanced Transit/Highway Emphasis Replacement Bridge for I-5 with Light Rail

### River Crossing

New bridge (west) with light rail, general purpose lanes and managed lanes

### Transit

Extend MAX Yellow Line light rail to north of downtown Vancouver

~

Local Bus

### Transportation System/Transportation Demand Management

Aggressive

### Highways

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, Hayden Island,  
SR-14, Mill Plain, 4th Plain, SR 500 and 39th

~

Managed lanes for HOV and/or freight use between 134th and Delta Park

### Freight

Freight bypass on-ramp lanes at key interchanges to be determined

~

Potential managed lanes for freight

### Bicycle and Pedestrian Improvements










Facilities on the new bridge with enhanced connections  
to North Portland, Hayden Island and downtown Vancouver



# Replacement Bridge for I-5 with Light Rail



## Legend

- |   |   |   |                                       |
|---|---|---|---------------------------------------|
|  | Existing Bridge (removed)                   |  | New Potential Park and Ride           |
|  | Replacement Bridge                          |  | Existing/Potential Light Rail Station |
|  | Arterial Lanes                              |  | Reconfigured Interchange              |
|  | Managed Lanes/Freight Lane                  |   |                                       |
|  | New Potential Light Rail Transit Alignments |   |                                       |
|  | Safety and Capacity Improvements            |   |                                       |

## Balanced Transit/Highway Emphasis Replacement Bridge for I-5 with Bus Rapid Transit

### River Crossing

New bridge (east) with general purpose lanes and managed lanes.

~

Bus Rapid Transit in separated right of way

### Transit

Bus Rapid Transit service in dedicated right of way from  
north of downtown Vancouver to Delta Park

~

Local bus

### Transportation System/Transportation Demand Management

Aggressive

### Highways

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, Hayden Island,  
SR-14, Mill Plain, 4th Plain, SR 500 and 39th

~

Managed lanes on I-5 for transit and HOV use between 134th and Delta Park

### Freight

Potential managed lanes for freight

~

Freight bypass on-ramp lanes at key interchanges to be determined

~

Direct access ramps for freight at key locations to be determined

### Bicycle and Pedestrian Improvements










Facilities on the new bridge with enhanced connections  
to North Portland, Hayden Island and downtown Vancouver



# Replacement Bridge for I-5 with Bus Rapid Transit



## Legend

- |   |  |   |  |
|---|--|---|--|
|  | Existing Bridge (removed)                  |  | New Potential Park and Ride                  |
|  | Replacement Bridge                         |  | Existing/Potential Bus Rapid Transit Station |
|  | Arterial Lanes                             |  | Reconfigured Interchange                     |
|  | Managed Lanes/Freight Lane                 |   |  |
|  | New Potential Bus Rapid Transit Alignments |   |  |
|  | Safety and Capacity Improvements           |   |  |

## Balanced Transit/Highway Emphasis Replacement Bridge for I-5 with Bus Rapid Transit Lite

### River Crossing

New bridge (west) with Bus Rapid Transit Lite in separated right of way

### Transit

Bus Rapid Transit Lite service from Clark County park and ride lots to downtown Portland in general purpose and managed lanes

~

Local bus

### Transportation System/Transportation Demand Management

Aggressive

### Highways

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, Hayden Island, SR-14, Mill Plain, 4th Plain, SR 500 and 39th

~

Managed lanes on I-5 for transit and HOV use between 134th and Delta Park

### Freight

No freight-specific improvements

### Bicycle and Pedestrian Improvements

Facilities on the new bridge with enhanced connections to North Portland, Hayden Island and downtown Vancouver














# Replacement Bridge for I-5 with Bus Rapid Transit Lite



## Legend

- |   |   |  |   |
|---|---|--|---|
|  | Existing Bridge (removed)                       |  | New Potential Park and Ride                       |
|  | Replacement Bridge                              |  | Existing/Potential Bus Rapid Transit Lite Station |
|  | Arterial Lanes                                  |  | Reconfigured Interchange                          |
|  | Managed Lanes/Freight Lane                      |  |   |
|  | New Potential Bus Rapid Transit Lite Alignments |  |   |
|  | Safety and Capacity Improvements                |  |   |

## Vehicle Capacity Emphasis Replacement Bridge for I-5 with Express Bus

### River Crossing

New bridge (east) with general purpose lanes

### Transit

Express bus service from Clark County  
park and ride lots to downtown Portland

~

Local bus

### Transportation System/Transportation Demand Management

Aggressive

### Highways

Safety improvements throughout the corridor

~

Interchange reconfigurations at Marine Drive, Hayden Island,  
SR-14, Mill Plain, 4th Plain, SR 500 and 39th

### Freight

No freight-specific improvements

### Bicycle and Pedestrian Improvements









Facilities on the new bridge with enhanced connections  
to North Portland, Hayden Island and downtown Vancouver



# Replacement Bridge for I-5 with Express Bus



## Legend

-  Existing Bridge (removed)
-  Replacement Bridge
-  Arterial Lanes
-  Managed Lanes/Freight Lane
-  Safety and Capacity Improvements
-  New Potential Park and Ride
-  Existing/Potential Transit Station
-  Reconfigured Interchange

