Economic Analysis – Project Ranking

This section evaluates transportation improvements for Portland’s Working Harbor area based on their potential economic development benefits. The projects listed in Table 2 are examined to determine a ranking of relative benefit to the working harbor study area. Projects ranked here are specific roadway, rail and marine system improvement projects. The ranking does not include proposals for cost-benefit and feasibility studies that are identified in Table 2 or described in the report text.

The Working Harbor study area is divided into seven subareas, each consisting of one to four Transportation Analysis Zones (TAZ). A TAZ is a small, geographic area used in modeling and analyzing transportation projects. Each project from Table 2 was evaluated to assess whether it would improve access to each TAZ. The number of acres in each TAZ available for redevelopment was derived from job growth forecasts conducted by the City of Portland Bureau of Planning in August, 2006. If a project improves access to a given TAZ, the number of acres of land in that TAZ available for redevelopment is included in the total Acres Affected in Table 16. The Acres Affected is used to calculate a cost per acre for each project.

Projects are ranked based on a point system. Projects are assigned points based on the following:

- One point for projects that are below the average cost per acre for all projects.
- One point for projects that address a deficiency that was identified in business interviews as a priority for area businesses.
- One point for projects that improve access to one of the 15 opportunity sites if that site has 20 acres or more of land available for redevelopment.
- One point for projects that not only improve access to a particular subarea, but also result in inter-regional transportation improvement.

A project can score up to four points. See Table 16 for project rankings. The following is a list of projects that scored the highest (four points):

Roadway Projects:
- I-5 Delta Park (funding has been identified for this project and it is completing the environmental process).
- Yeon ITS Project.
- Going Street at Swan Island – weight restricted bridge.
- Going Street ITS Project.
- Lombard/Burgard – replace weight restricted bridge.

Rail Projects:
- Double tracking of Kenton line.
The following projects earned three points in the ranking:

Roadway Projects:
- Denver Viaduct reconstruction.
- I-5 reconstruction and widening – Greeley to I-84.
- US 30 Willbridge area – add left turn lane.
- US 30 at Salzman/Balboa intersection realignment (not recommended if Balboa/BNSF crossing is closed).
- US 30 at 112th – add traffic signal.
- Going/Greeley interchange improvements.
- River Avenue Extension – Feasibility Study
- Marine Drive at Rivergate West rail crossing – construct grade separation.
- Lombard at Columbia Slough – strengthen bridge.
- Widen Lombard – Purdy to Simmons.
- Columbia Boulevard ITS.
- Rivergate ITS.
- Columbia Boulevard/N Portland Road – intersection improvements.
- Ivanhoe/Philadelphia intersection improvements.
- Lombard/St Louis/Ivanhoe multi-modal improvements.
- Burgard/Lombard – street improvements

Rail Projects:
- North Portland Junction rail improvements.
- Vancouver BNSF - rail bridge (Columbia River).
- BNSF – Columbia Bridge track improvements.
- Peninsula Junction – track realignment/double tracking.
- Brooklyn line to Graham line rail connection.
- South Rivergate Rail Yard – expansion.
- Terminal 5 Unit Rail Loops.
- Ramsey Rail Yard – capacity improvements.

Marine Projects:
- Columbia River Channel Deepening.
Table 16: Project Evaluation Matrix

<table>
<thead>
<tr>
<th>TAZ #</th>
<th>Linnton</th>
<th>Willbridge</th>
<th>Rivergate South</th>
<th>NW Industrial District</th>
<th>Swan Island</th>
<th>Rivergate North</th>
<th>Rivergate West</th>
</tr>
</thead>
</table>

**Road Projects**
- # Project: Access to one or more sites that have 20 acres or more available for redevelopment (based on 15 key sites identified by City of Portland)
- Includes 113 acre Port of Portland site on N Lombard

**Rail Projects**
- # Project: Improve access to one or more sites that have 20 acres or more available for redevelopment (based on 15 key sites identified by City of Portland)
- Includes 113 acre Port of Portland site on N Lombard

**Marine Terminal Projects**
- # Project: Improve access to one or more sites that have 20 acres or more available for redevelopment (based on 15 key sites identified by City of Portland)
Recommendations and Conclusions

Analysis of deficiencies identified by area businesses, access issues at opportunity sites, and economic development potential of transportation projects included in local plans reveals several areas where further action should be taken. These recommendations include projects and strategies included in existing plans as well as new recommendations based on the Working Harbors Transportation Infrastructure Analysis. The city should make the following recommendations a priority.

Previously Identified Projects

- Continue working on short term solutions to improve the I-5/I-84 interchange.
- City of Portland plans to implement “smart” traffic signal technology at the intersection of N Going Street and N Interstate Avenue. The smart signals will be able to allocate green time more effectively and should improve intersection function. Following implementation, PDOT should monitor intersection performance.
- Implement grade-separation of the Peninsula Junction identified in the 2003 I-5 Rail Capacity Study.
- Increase the priority of the North Willamette River Crossing study in the Regional Transportation Plan.

New Transportation Recommendations

- Prepare a strategy that can maintain and improve access to the rail system for smaller shippers.
- Conduct a local circulation study in the Northwest Industrial District to develop strategies for improving access between NW Yeon Avenue and NW Front Avenue in the vicinity of NW Nicolai Street.
- Evaluate the feasibility of extending NW 26th Avenue south of NW Yeon Avenue to improve access to properties in that area.
- Evaluate the potential for an advance warning system on NW Front Avenue to divert traffic during train crossings.
- Conduct a local circulation study in the Linnton area to evaluate the potential for combining accesses and improving safety on US 30.
- Conduct a study on Swan Island to evaluate potential rail improvements and opportunities to remove rail spurs.
- Prepare a cost-benefit analysis of constructing a grade-separated crossing over the BNSF railroad in the vicinity of NW Balboa Avenue.
- Investigate the feasibility of a new regional rail yard to relieve congestion at Albina Yard.
- Evaluate cost-benefit of city acquisition and improvement of Time Oil Road.
- Evaluate the feasibility of extending N Bradford Street through the T-4 property to connect with N Terminal Road.
- Pursue implementation of a Whistle-Free zone in the St Johns area.
Appendix A

Naito Parkway – Steel Bridge Railroad Crossing - Potential Treatments

Grade separation of the railroad crossing of NW Naito Parkway at the Steel Bridge could alleviate the periodic traffic congestion related to train crossings. Strategies to grade separate at this location, however, are limited:

- Strategies that would *elevate* the UPRR over NW Naito Parkway or elevate NW Naito Parkway over the UPRR are not feasible due to the upper (roadway/MAX) deck of the Steel Bridge.
- Strategies that would lower the UPRR under NW Naito Parkway or lower NW Naito Parkway under the UPRR could be feasible but would likely have significant impacts and be very expensive. Issues that would be faced with lowering either the roadway or the railroad include:
  - High water table – Any cut in this area adjacent to the river would need to provide a high level of water management (pumps, sealant, etc.) due to high water tables.
  - Retaining walls – Either a railroad cut or a roadway cut would require a significant amount of retaining walls.
  - Roadway cut – The roadway cut would require that NW Naito Parkway be lowered for approximately 700 feet on either side of the rail crossing.
  - Railroad cut – The railroad cut would require that the lower section of the Steel Bridge be rebuilt in order to allow the tracks to be lowered in order to enter the west river bank and tunnel under NW Naito Parkway with sufficient clearance. The cut into the riverbank could place portions of the track within the 100-year floodplain. The unique telescoping feature of the Steel Bridge, which allows the heavy rail tracks to be raised independent of the upper deck, could be compromised.
  - Area impacts – Potential impacts in the immediate area could include:
    - Closure of McCormick Pier driveway(s)
    - Impacts to the Willamette Greenway Trail
    - Impacts to Tom McCall Waterfront Park
    - Pedestrian and bike impacts
    - Environmental impacts
    - Endangered species impacts
    - Reconstruction of tracks at Union Station
    - Construction impacts
Appendix B

Cost methodology for site access improvements

Introduction
As part of the Working Harbor Reinvestment Strategy, the consulting team has considered the micro and macro aspect of transportation systems. Mobility and access were evaluated at each site and then the area roadway network was studied to determine the relation between sites and area access.

In general, three components of infrastructure improvements were related to cost estimating.

- Traffic Study Reports
- Signal Design/Installation/Operation
- Roadway Engineering/Construction

Cost estimates at this preliminary stage of study are intended to provide an order of magnitude sense of the potential cost and budget for the recommended actions. The Transportation Infrastructure Analysis does not provide the level of detail that would be required to prepare more accurate costs for the various elements.

Traffic Study Reports
The cost related elements of a traffic study as considered for the working harbor reinvestment strategy include but are not limited to: Data collection, analysis of raw data, site visits, modeling of intersections within a corridor and use of computer software for various types of analysis such as warrants, capacity and progression. Costs are estimated for each element in the process of developing a report.

Costs for these procedures vary at different locations in proportion to the complexity of the study, stakeholder interest and time estimated to generate a report. Estimates for traffic studies are based on assumptions related to the study approach and complexity and a rough estimate of the overall level of effort required.

Traffic Signal Design/Installation/Operation
Intersection control improvements may include a newly signalized intersection or a simple modification/upgrade. Some modifications may include small geometric changes at a single leg or multiple legs of an intersection. Included in the costs are:

- engineering fees
- cost of materials
- labor
- traffic control during construction

Depending on the circumstance, the costs could be at the expense of business owners or
the jurisdictional authority. Costs vary at different locations due to the quantity of materials necessary for completing the project. Costs are based on present costs of materials and labor time.

**Roadway Engineering/Construction**

Project types vary within this category. For example, at the Time Oil site, realignment of the driveway is recommended. At site 8, the Linnton Plywood site, a milling and overlay process is recommended.

Estimating costs on such items as overlays, road re-construction and rail replacement installations were made by comparison to existing estimates and actual costs for similar projects. In some cases where land must be acquired for road widening, an accurate estimate would require an in-depth research effort, not included in this report.