# “Using Oregon's Highway Economic Requirements System for Development of the Oregon Highway Plan”


***Rich Arnold, P.E.***

*Oregon Department of Transportation*

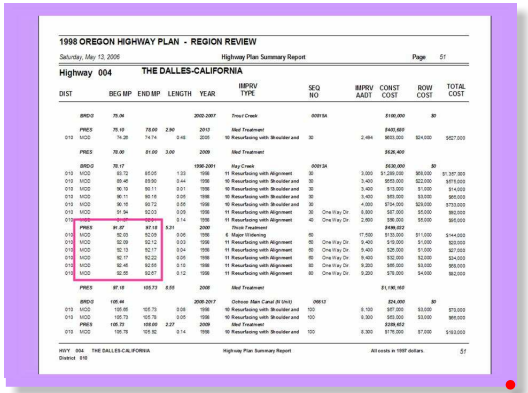

## Program Goals

**Modernization, Safety and Operations:**

- Decreased travel times
- Decreased emissions
- Increased service reliability
- Decreased user costs
- Reduced accidents
- Decreased incident response time

## Basic Analysis Steps

- Create 100% sample dataset
- Develop initial needs analysis using HPMSAP
- Combine AP Output with BMS, PMS and SMS needs (including STIP improvements) and sent out for Region Review (RR)
- Edit dataset based on RR comments
- Develop final needs analysis using HERS-OR



1998 OREGON HIGHWAY PLAN - REGION REVIEW

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Highway 004 — THE DALLES-CALIFORNIA

| DIST | BEG MP | END MP | LENGTH | YEAR | IMPRV TYPE | SEQ NO | IMPRV AADT | CONST COST | ROW COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| BRDG | 70.04 | | | 2002-2007 | Trout Creek | 000134 | | 2100,000 | $0 | |
| PRES | 70.10 | 78.60 | 2.90 | 2010 | Mod Treatment | | | 2602,600 | | |
| 010 MOD | 74.28 | 74.74 | 0.46 | 2005 | 10 Resurfacing with Shoulder and | 30 | 2,494 | $653,000 | $24,000 | $677,000 |
| PRES | 78.00 | 81.00 | 3.00 | 2009 | Mod Treatment | | | 2626,400 | | |
| BRDG | 78.17 | | | 1998-2001 | Hay Creek | 000134 | | 2630,000 | $0 | |
| 010 MOD | 83.72 | 85.05 | 1.33 | 1998 | 11 Resurfacing with Alignment | 30 | 3,000 | $1,299,000 | $88,000 | $1,387,000 |
| 010 MOD | 85.46 | 85.90 | 0.44 | 1998 | 10 Resurfacing with Shoulder and | 30 | 3,400 | $555,000 | $22,000 | $577,000 |
| 010 MOD | 90.19 | 90.11 | 0.01 | 1998 | 10 Resurfacing with Shoulder and | 30 | 3,400 | $13,000 | $1,000 | $14,000 |
| 010 MOD | 90.11 | 90.18 | 0.05 | 1998 | 10 Resurfacing with Shoulder and | 30 | 3,400 | $55,000 | $3,000 | $58,000 |
| 010 MOD | 90.18 | 90.72 | 0.55 | 1998 | 10 Resurfacing with Shoulder and | 30 | 4,000 | $704,000 | $29,000 | $733,000 |
| 010 MOD | 91.34 | 92.03 | 0.05 | 1998 | 11 Resurfacing with Alignment | 30 | 6,000 | $87,000 | $5,000 | $92,000 |
| 010 MOD | 91.97 | 92.01 | 0.14 | 1998 | 11 Resurfacing with Alignment | 40 | 2,600 | $90,000 | $5,000 | $95,000 |
| PRES | 91.97 | 97.18 | 5.21 | 2000 | Thirsk Treatment | | | 2608,072 | | |
| 010 MOD | 92.03 | 92.09 | 0.06 | 1998 | 6 Major Widening | 60 | 17,700 | $135,000 | $11,000 | $144,000 |
| 010 MOD | 92.09 | 92.12 | 0.03 | 1998 | 11 Resurfacing with Alignment | 50 | One Way Dir | 9,400 | $19,000 | $1,000 | $20,000 |
| 010 MOD | 92.13 | 92.17 | 0.04 | 1998 | 11 Resurfacing with Alignment | 50 | One Way Dir | 9,400 | $25,000 | $1,000 | $27,000 |
| 010 MOD | 92.17 | 92.22 | 0.05 | 1998 | 11 Resurfacing with Alignment | 50 | One Way Dir | 9,400 | $22,000 | $2,000 | $24,000 |
| 010 MOD | 92.46 | 92.55 | 0.10 | 1998 | 11 Resurfacing with Alignment | 50 | One Way Dir | 9,200 | $85,000 | $3,000 | $88,000 |
| 010 MOD | 92.55 | 92.67 | 0.12 | 1998 | 11 Resurfacing with Alignment | 50 | One Way Dir | 9,200 | $78,000 | $4,000 | $82,000 |
| PRES | 97.18 | 105.73 | 8.55 | 2008 | Mod Treatment | | | 2,196,160 | | |
| BRDG | 105.44 | | | 2005-2017 | Dalles Main Canal (N Unit) | 000137 | | 224,000 | $0 | |
| 010 MOD | 105.66 | 105.73 | 0.06 | 1998 | 10 Resurfacing with Shoulder and | 100 | 8,100 | $67,000 | $3,000 | $70,000 |
| 010 MOD | 105.73 | 105.78 | 0.05 | 1998 | 10 Resurfacing with Shoulder and | 100 | 8,300 | $93,000 | $3,000 | $96,000 |
| PRES | 105.73 | 108.00 | 2.27 | 2009 | Mod Treatment | | | 2208,612 | | |
| 010 MOD | 105.78 | 105.92 | 0.14 | 1998 | 10 Resurfacing with Shoulder and | 100 | 8,300 | $170,000 | $7,000 | $193,000 |

HWY 004 THE DALLES-CALIFORNIA — Highway Plan Summary Report — All costs in 1997 dollars. — 51

District 010

## Region Review Process

- Reality check - Have “Needs” been identified which will never be improved because of costs, location, political implications, etc.?
  - Is this project realistic? Can it be physically built? Should it be built? Are there special circumstances that need to be considered (i.e., Political, Laws/policies, Cost factor adjustments)
- Duplication - Has a section been flagged with multiple “Needs”, i.e., Modernization vs. Preservation?
  - How should the duplications be dealt with? Are there scheduling factors to resolve?
- Overlooked - Have obvious or known “Needs” been omitted?
  - Have locally known troubled areas been accounted for? Are there unforeseen impacts that will effect the system?
- Credibility (“Gold Plated”) - Are the costs accurate and reliable (± 20%)? Should the “Needs” or “Costs” be revised and why? Are there local influences that haven’t been accounted for?
  - Can the regions and districts support the numbers? What should be revised and why? Are there other local irregularities that haven’t been accounted for? (i.e., Wet-lands, Geometric problems, i.e., rock cuts (cliffs), etc)
- Additional considerations - Do the “Needs” reflect existing MPO and/or corridor plans?
- Have “un-met” safety needs been evaluated?

**Improvement Override Feature Introduced!!!**

### Scenario 1
Current Funding Continued

- Based on projected current funding with no increases in tax rates
- Modernization: only required projects completed
- Preservation: pavement conditions will decline to 59% fair-or-better by 2017
- Bridge: bridge value index will decline to 82% of total replacement value by 2017
- User costs: will increase by over 50% per mile
- Average speeds: will decline by 50%

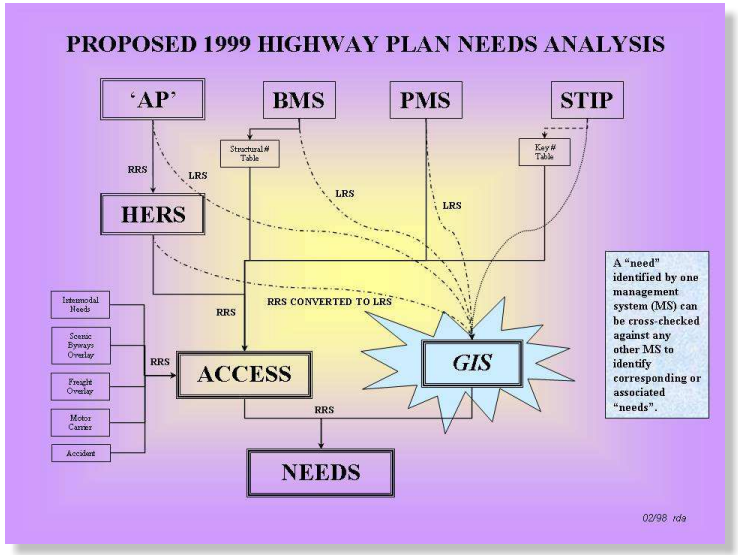
### Scenario 4
Feasible Needs

- Designed to manage infrastructure in most cost-effective way and complete all feasible capacity projects
- Modernization: all feasible projects completed
- Preservation: pavement conditions will improve to 90% fair-or-better overall
- Bridge: all critical projects addressed; aging bridges addressed
- User costs will increase and average speeds will decline, but by less than half the change under current funding

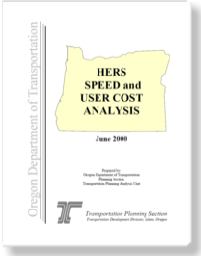
## General Comments from Region Review Process....

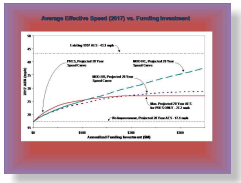
- Do not widen I84 between MPxx and MPyy because the alignment parallels a river one side and a steep slope on other.
- Do not add shoulders on certain rural roadway with low AADT because we can not justify the expense.
- Add auxiliary lanes or other widening projects
- Add new alignment / bypass
- Add rockfalls / slides / sunken Grade Repairs
- Add intersection improvements (ramp metering)
- Add bike / ped improvements
- Etc…..

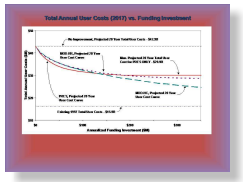
## Initial Data Integration Concept

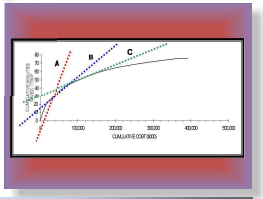



## HERS-OR Study



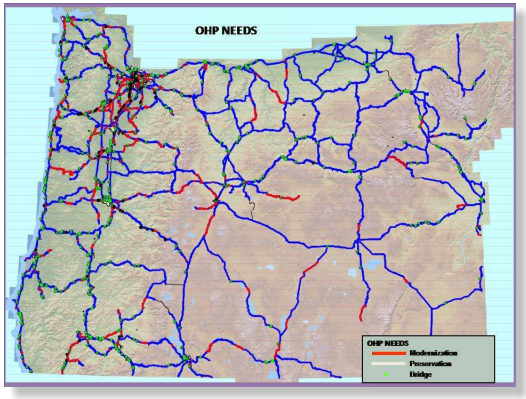




*Analysis of Future Speeds and User Costs*

| Investment Scenario | Average Speed (mph) | Total User Costs per Mile (cents) | Total User Costs per Year ($B) |
|---|---|---|---|
| Initial Year | 43.1 | 82.4 | 15.9 |
| Project Current Infrastructure | 21.6 | 132.1 | 34.4 |
| Coping with Congestion | 22.6 | 123.6 | 32.5 |
| Feasible Needs | 29.0 | 102.3 | 28.4 |
| Feasible Needs w/ Reduced VMT | 31.2 | 96.6 | 25.7 |




http://www.oregon.gov/ODOT/TD/TP/orhwyplan.shtml#1999_Oregon_Highway_Plan