

Technical Advisory Committee Meeting Summaries

A Technical Advisory Committee (TAC) was formed to develop the facility plan. The TAC consisted of federal, state, and local representatives including Federal Highway Administration (FHWA) staff, ODOT staff, Department of Land Conservation and Development (DLCD) staff, MWVCOG staff, and representatives from Polk County and the City of Dallas. The TAC was responsible for developing project goals and problem statement, data collection and analysis, alternative identification and evaluation, and recommendations.

The TAC met eight (8) times between March 10, 2000 and March 7, 2001.



**OR 99W/22 Rickreall Junction Refinement Plan
Technical Advisory Committee (TAC)
Project Organization/Chartering Meeting
ODOT Region 2- Room 209
Friday March 10, 2000
9AM-Noon**

TAC MEETING #1A--SUMMARY

ATTENDEES

Jim Buettner- Preliminary Design
Harlen Nale-Transportation Planning and Analysis Unit
Scott McKanna-Preliminary Design (on loan to TPAU)
Mark Fancey-Mid-Willamette Valley COG
Richard Schmid -Mid-Willamette Valley COG
Jim Allen-Polk County Planning
Tony Snyder-Polk County Public Works
Anthony Boesen-Federal Highway Administration
Dave Bishop-ODOT Area 3 Manager
Jerry Erickson-ODOT District 3
Erik Havig-Preliminary Design
Dan Fricke-Region 2 Planning
Rich McSwain-Region 2 Traffic
Terry Cole-Region 2 Planning/Project Manager

Project Background/Overview

Participants described events leading to the development of the Refinement Plan. The general sequence of events began with the long-standing state and local recognition of a developing accident history in the area of the 22/99W intersection and the 22/Dallas-Rickreall Highway (DRH) intersection. The problems with these intersections were also acknowledged during the development of the Highway 22 Corridor Strategy in 1995 and 1996. In 1997 and 1998, the Polk County TSP also identified the need to address the growing safety problems in this area. The problems were further documented in 1999 through the Highway 18 and 22 Safety Report, a project undertaken by ODOT at the request of the Mid-Willamette Area Commission on Transportation (MWACT).

During this time (from 1996 to 1999), the urgency of these problems was heightened by a 60% increase in traffic, driven in part by regional growth and the opening of the casinos in Grande Ronde and Lincoln City. Based on this information, a consensus began developing at MWACT and in Polk County that eventual grade separation on Highway 22 from Salem to Dallas would be needed to ensure long term corridor safety. Consensus also developed that addressing this problem, as the most pressing of the various issues along the corridor, should be a high MWACT priority in the most recent round of STIP development. The same consensus also

held during the development of the bonding project list in the wake of the 1999 legislative process.

As part of the OTC approval process, which affirmed the projects that would be pursued if the bonding package was authorized by voters, a variety of questions were raised about the appropriateness of the proposed interchange to address the problems at this intersection. The Rickreall Junction Refinement Plan has been initiated to define the nature of the improvements needed to respond to these concerns.

Extensive discussion was held about what problems this project is intended to address. A variety of problem statements were offered.

- Spacing of Highway 22 and the DRH is too close
- Numerous left-turn and rear-end accidents at 99W and 22 Severe head-on accident potential high at 22 and DR Highway
- Speeds of oncoming vehicles hard to judge for eastbound through and westbound turning vehicles at the 22 and DRH intersection
- Entire 22 corridor from Salem to Dallas is dangerous
- Cannot afford to upgrade entire corridor at one time-issues must be addressed incrementally
- These intersections are the most immediate problems on the corridor
- Traffic volumes currently near OHP mobility standards and are expected to exceed them over the planning horizon
- Truck traffic associated with aggregate operation is expected to increase
- A number of top ten percent SPIS sites are located in this area
- Signal phasing from 99W to 22 is not a separate phase
- Orientation of Highway 22 creates AM and PM visibility problem on sunny days
- Lack of "roadside culture" provides no visual signal for drivers to anticipate the change in traffic conditions at both subject intersections
- Confusing environment for driver expectations

Based on these data and observations the following problem statement was developed:

The intersections of Highway 22 with Highway 99W and the Dallas-Rickreall Highway are experiencing a high number of accidents typically associated with traffic signals and highspeed turning movements on rural highways. Left as is, this problem is expected to worsen as traffic volumes increase. Current traffic volumes do not exceed OHP mobility standards, but are very close. It is expected that traffic volume growth will reduce operational performance below OHP standards during the 20-year planning horizon. The entire Highway 22 corridor from Salem to Dallas suffers from current safety problems and will suffer from future safety and mobility problems. The problem is too big to be addressed all at once and must be solved incrementally. The problems at 22 and 99W are, by state and local consensus, the most immediate of these incremental challenges.

THIS INITIAL PROBLEM STATEMENT WILL BE VALIDATED, SUPPORTED WITH SPECIFIC TECHNICAL FINDINGS, AND MODIFIED, IF NECESSARY, PRIOR TO THE COMPLETION OF THE FIRST DRAFT OF THE REFINEMENT PLAN.

Determine Project Committee Approach

Two standing project committees will be created for this project.

The Technical Advisory Committee will be composed of the following members:

- Jim Buettner- Preliminary Design
- Harlen Nale-Transportation Planning and Analysis Unit
- Scott McKanna-Preliminary Design (on loan to TPAU)
- Mark Fancey-Mid-Willamette Valley COG
- Jim Allen-Polk County Planning
- Tony Snyder-Polk County Public Works
- Dave Shea-Dallas Public Works
- Anthony Boesen-Federal Highway Administration
- Jerry Erickson-ODOT District 3
- Dan Fricke-Region 2 Planning
- Rich McSwain-Region 2 Traffic
- Terry Cole-Region 2 Planning/Project Manager

The ODOT Project Leadership Team will be composed of the following members:

- Gary Johnson-Region 2 Manager
- Dave Bishop-District 3 Area Manager
- Don Jordan-District 3 Maintenance Manager
- John deTar-Region 2 Planning Manager
- Erik Havig-Preliminary Design

In addition to these new groups, the Mid Willamette Valley Area Commission on Transportation will serve as principle stakeholders for this project and will also provide a policy advisory function to the TAC.

In addition to these groups, participation from the following ODOT units will be requested as necessary:

UNIT	TAC CONTACT
Environmental	Terry Cole/Molly Cary
Mapping	Preliminary Design
Geometronics	Preliminary Design
Geo/Hydro	Preliminary Design
Bridge	Preliminary Design
Right of Way	Region 2/Preliminary Design
Traffic	TPAU

The TAC may also make the following external contacts, as necessary:

- School District
- OSP/County Sheriff
- Farm Bureau
- Local Water District
- Department of Fish and Wildlife
- Rural Fire District/Emergency Services

Determine Outreach Approach

The outreach approach for this project will be a combination of pro-active outreach to specific stakeholders, presentations to elected and appointed officials, and one or two public workshops. Potential stakeholders identified so far include the following:

- State Representative Lane Shetterly
- Penny Cox, Rickreall Community Representative
- Roger Jordan, Dallas City Manager
- Gary Wilson, Monmouth Public Works
- Chris Harriman, Willamette Industries
- Representative from Dalton Rock
- Owner of the large dairy near the intersection
- A Grange representative
- Adjacent land owners

Elected and appointed officials will be addressed through the Polk County Commission, the Polk County Planning Commission, The Dallas City Council, and the Mid Willamette Valley Area Commission of Transportation. These presentations will be made at key project milestones as determined by the TAC.

One general public workshop will be held upon the completion of the first draft of the Refinement Plan. A follow-up workshop may be held, if deemed necessary by the TAC, PLT, and MWACT.

Due to time constraints, the remainder of the agenda was suspended until the next meeting, scheduled for March 30, 2000, from 8 to Noon, Room 209, Region 2 HQ. The items remaining for discussion at TAC Meeting 1 B on March 30 are as follows:

- Determine Data Needs and Sources
 - land use
 - mapping/photogrammetry
 - ROW
 - traffic/operations
 - safety
 - environmental
 - geometric
- Define Analysis Approach
 - geometric/ops/safety methods
 - growth rates/land use
 - models
 - simulations
 - modal influence
 - environmental
- Define Evaluation Criteria and Screening Approach
- Define Roles and Responsibilities
- Establish Change Management Expectations
- Next meetings/agendas



**OR 99W/22 Rickreall Junction Refinement Plan
Technical Advisory Committee (TAC)
Project Organization/Chartering Meeting—Part 2**

**ODOT Region 2—Room 209
Thursday, March 30, 2000
8AM-Noon**

TAC MEETING #1B--SUMMARY

ATTENDEES

Jim Buettner—Preliminary Design
Harlen Nale—Transportation Planning and Analysis Unit
Scott McKanna—Preliminary Design (on loan to TPAU)
Mark Fancey—Mid-Willamette Valley COG
Richard Schmid—Mid-Willamette Valley COG
Jim Allen—Polk County Planning
Tony Snyder—Polk County Public Works
Anthony Boesen—Federal Highway Administration
Jerry Erickson—ODOT District 3
Erik Havig—Preliminary Design
Dan Fricke—Region 2 Planning
Rich McSwain—Region 2 Traffic
Terry Cole—Region 2 Planning/Project Manager

AGENDA REVIEW

It was noted that John deTar attended the first TAC meeting on March 10. It was also noted that Bob Cortright of DLCD would be included as a member of the TAC.

PROJECT AND PROCESS GOALS

Based on the brief goal discussion that took place on March 10, a draft set of project and process goals was distributed for discussion. As modified by the discussion the initial set of project goals is as follows:

PROJECT GOALS

- Conduct credible analysis of problems at Highway 99W and 22 intersection and intersection of Highway 22 and the Dallas/Rickreall Highway
- Identify, analyze, and narrow the number of operationally feasible alternatives for addressing the geometric, safety, and operational problems that can then be forwarded into an environmental documentation process
- Conduct sufficient environmental analysis to identify potential “red-flag” constraints and validate alternative feasibility
- Meet OHP policies (Mobility, Major Investment, Access, Safety, etc.)

- Meet geometric standards as per ODOT Highway Design Manual
- Minimize impact on the Rickreall community
- Seek alternatives that provide the highest overall short- and long-term value per dollar invested

PROCESS GOALS

- Gain early land use approvals, if feasible and appropriate
- Provide information that the County can use to amend their comprehensive plan to ensure its consistency with subsequent EA work
- Establish that the County TSP amendment to acknowledge feasible project concepts will be the first formal decision in the project development process and will set the parameters for the environmental documentation process
- Use the County TSP amendment process to gain public agreement with the range of alternatives forwarded to the environmental documentation process
- Establish project work as a legitimate pre-cursor to the EA and NEPA process
- Establish understanding that the purpose of the project is to narrow the range of alternative solutions—it is not expected to yield a final NEPA or design decision
- Complete the project in Calendar 00
- Conduct targeted outreach, stakeholder briefings and one general workshop/open house, not formal public hearings
- Establish outcome of public involvement as simply gaining insight into potential community perspectives (as opposed to a sanction or mandate for any particular action)

These initial goals are open to modification throughout the course of the project.

DETERMINE DATA NEEDS AND SOURCES

LAND USE

MWVCOG will collect information on vacant land and proposed development in the environmental analysis area (as defined on the aerial photo presented in the first TAC meeting) and in the Rickreall community area. MWVCOG will also review Dallas and Polk County Comprehensive Plans and OEA population projections. Potential for future growth “anomalies” like the casino will also be assessed. Using this information, MWVCOG will develop 25-year growth rates to support traffic forecasting. MWVCOG will also develop maps depicting land use and development potential in the study area.

MAPPING/PHOTOGRAMMETRY

MWVCOG will develop generalized land use and location maps. These maps will include parcel data, as needed. TPAU will develop intersection operational maps (volumes, movements, V/C). Preliminary Design will develop air photo composites and CAD drawings to depict alternatives, as appropriate, at various stages of the project.

ROW

PD will gather ROW information needed to support design efforts from R2 ROW unit. R2 Project Manager will obtain ROW cost estimate for alternatives evaluated in detail during the latter stages of the project.

TRAFFIC/OPERATIONS

TPAU has somewhat recent 14-hour intersection counts (10/99) at 99W and 22 and a PM peak count (12/99) at 22 and the DR Highway. These counts can be used to begin the analysis.

However, HPMS counts do not exist to adequately support the project. New 7-day, full classification counts are needed on all four legs of the 99W/22 intersection and on all three legs of the 22/DR Highway intersection. New 14-hour full movement counts are needed at both intersections. The new counts will be used to validate the counts that the initial analysis will be based upon. New counts should be taken after the 4th of July to best simulate a 30th highest hour condition. TPAU will arrange for counts from the TDD data section, or contact the R2 Project Manager to make other arrangements if TDD's contract will not support counting for this project.

SAFETY

Region 2 Traffic Unit will collect PRC data between 1994/5 and 1999/2000 and provide it to PD so that they can analyze the relationship between crashes and physical/operational problems. Region 2 Traffic Unit will also conduct a literature search to determine how similar problems have been addressed elsewhere. PD will contact the author of the Highway 18 and 22 Safety Report and collect any pertinent information. PD will contact the Polk County Sheriff's department for any additional information that they can provide.

ENVIRONMENTAL

R2 Environmentalist will initiate and coordinate the environmental "red-flag" analysis at a "recon" level of effort to identify showstoppers and design constraints. ODOT's environmental staff will produce these analyses.

GEOMETRIC

PD will collect or develop all necessary geometric information.

DEFINE ANALYSIS APPROACH

GEOMETRIC/OPERATIONS/SAFETY METHODS

The geometric, operations, and safety methods will be in line with the approaches and evaluation criteria paper distributed in TAC meeting 1A. The geometric deficiency analysis approach is a "standards-based" approach that compares existing and forecast conditions to current standards as defined by the OHP Design Manual. This assessment will be coordinated with the operational analysis. The operational deficiency analysis approach will compare existing and forecast traffic volumes and available storage to OHP mobility standards and storage requirements. The tools used for the operational analysis will include SigCap, Unsig 10, and possibly Synchro. The safety deficiency analysis approach will involve a review of current SPIS lists and PRC data and a determination if documented crashes can be correlated to geometric or operational conditions. The likelihood of crashes increasing, given existing geometric conditions and forecasted operational conditions will also be assessed.

GROWTH RATES/LAND USE

Traffic growth rates will be derived through blending expected population and employment growth in the local area (as defined by local comprehensive plans) with background traffic growth rates developed through trend analysis. These growth rates may be adjusted to reflect known or anticipated traffic growth anomalies (like casino expansion) as identified and acknowledged by the TAC. The rates may also be adjusted to reflect any development potentials as determined by the MWVCOG analysis of specific land in the immediate area.

MODELS/SIMULATIONS

Aside from the ODOT Statewide model, which is not an appropriate tool for analysis at this scale, there are no traffic models available for use in this area. Micro simulation packages like

TrafNetSim may be employed during the alternative evaluation phase if deemed necessary by the TAC.

MODAL ISSUES

An assessment of the potential impact of non-private passenger vehicle modes will be conducted. This assessment will include a review of the Oregon Public Transportation Plan and the plans of local transportation service providers and compare the levels of service goals of those plans to the level of service currently being provided. Possible increases in the use of area park and ride lots will also be examined. The likelihood of meeting long-range transit goals will be determined and used to adjust traffic-forecast numbers, if warranted. The same approach will be used to assess the potential affect of rail service on future travel demand. Based on existing classification counts, trend line forecasting, and whatever can be discerned about future business plans in the area, the potential impact of truck freight will be defined. Bicycle and pedestrian demand will not be analyzed directly—bicycle and pedestrian facilities will simply be included as design features for any alternative identified.

ENVIRONMENTAL

Input from the Region 2 Environmentalist since TAC Meeting 1B states the following:

A level 1 Hazardous Materials survey will be conducted. For archaeology, something between a level 1 and 2 survey will be conducted. For Historic resources a visual survey of area buildings will be conducted to identify potentially significant historic resources. For plants, an on the ground survey will be conducted to identify locations of populations. Most of the undisturbed area is ODOT right-of-way (but there are known populations in the vicinity). Existing information will be used when possible. It will be determined if there are any listed fish in Rickreall Creek. For wetlands, most everything is farmed or developed. It will be determined if there are farmed wetlands that are jurisdictional.

DEFINE EVALUATION CRITERIA AND SCREENING APPROACH

Alternatives will be developed to address the deficiencies documented and the problems that are attributed to the deficiencies. The alternatives selected for detailed analysis will be evaluated on a range of criteria dealing with issues from safety to environmental impact. This range of criteria was discussed in detail and the Project Manager was given the go ahead to document the results of the discussion. The full evaluation criteria matrix will be provided to the TAC in a separate attachment (by the end of April).

DEFINE ROLES AND RESPONSIBILITIES

- ODOT Preliminary Design
 - 1) Safety analysis based on information provided by Region 2 and collected from Polk County Sheriff
 - 2) Suggestion and development of design concepts to address problems identified through deficiency analysis
 - 3) Development of design concepts suggested by other TAC members
 - 4) ROW impact definition
 - 5) Development of report graphics, at an appropriate level of detail, depicting alternatives considered and evaluated—provided to MWVCOG in a reproducible format
 - 6) Text summary of geometric and safety evaluations—provided to MWVCOG for editing and placement in draft and final document
- ODOT Transportation Planning and Analysis Unit

- 1) Collection and processing of traffic count data
 - 2) Existing and future operational analysis
 - 3) Development of graphics to illustrate operational analysis, at an appropriate level of detail, depicting existing and future no build and future alternative conditions—provided to MWVCOG in a reproducible format
 - 4) Text summary of operational evaluations—provided to MWVCOG for editing and placement in draft and final document
- Mid-Willamette Valley COG
 - 1) Attend meetings and develop minutes
 - 2) Assist Region 2 Project Manager to develop Agendas
 - 3) Coordinate and conduct public outreach
 - 4) Conduct modal analysis and define relationship to highway operations
 - 5) Conduct land use, population, and economic analysis and provide traffic growth rates to TPAU for operational analysis
 - 6) Compile technical memos and reports and develop report text
 - 7) Compile technical graphics and prepare for inclusion in draft and final document
 - 8) Produce land use and location maps for draft and final documents
 - 9) Produce other illustrative report figures and tables, as required (org. charts, timeline, process charts, population forecasts, etc.)
 - 10) Produce draft and final documents
 - ODOT Region 2 Traffic
 - 1) Collect SPIS information and provide to PD for analysis
 - 2) Collect PRC information and provide to PD for analysis
 - 3) Develop crash diagrams, as required, and provide to PD for analysis
 - 4) Conduct literature search and provide information to TAC about how similar situations have been addressed elsewhere (if such information exists)
 - ODOT Region 2 Environmentalist
 - 1) Coordinate use of ODOT resource experts to conduct appropriate “red-flag” analysis
 - 2) Provide technical memos to ODOT Region 2 Project Manager
 - ODOT Region 2 Project Manager
 - 1) Provide project administration (budget, agendas, timelines, etc)
 - 2) Coordinate various project elements
 - 3) Communicate with stakeholders
 - 4) Communicate with ODOT Project Leadership Team (PLT)
 - 5) Develop evaluation criteria
 - 6) Obtain cost estimates from Region 2 ROW for alternatives analyzed in detail
 - 7) Review all project documents and graphics and provide project direction
 - Polk County
 - 1) Provide any available land use or traffic count data to MWVCOG and TPAU
 - All TAC Members
 - 1) Provide initial project direction and goals
 - 2) Develop and screen alternatives
 - 3) Provide direction for, review, and validate work products

- 4) Recommend one or more alternatives to the PLT, MWACT, and Local Governments for advancement into an environmental documentation process
- Mid-Willamette Area Commission on Transportation
 - 1) Review and comment to TAC and PLT on draft and final report
 - ODOT Project Leadership Team
 - 1) Validate project goals
 - 2) Resolve issues as requested by the TAC
 - 3) Determine if and when presentation of products to the Oregon Transportation Commission will take place
 - 4) Approve draft and final work product

CHANGE MANAGEMENT EXPECTATIONS

It is agreed that change management protocols will be simple. All project participants should communicate as directly as possible with each other or other contributors when carrying out assignments developed through TAC discussions. The ODOT Region 2 Project Manager should be informed if any substantive deviation from TAC assignments is needed.

NEXT MEETINGS/AGENDAS

The next meeting will be held on Wednesday, May 24, from 10 to 4, in room 209 at Region 2. The agenda focus for the next TAC meeting (#2) and subsequent meetings is as follows:

- TAC #2 – Conduct Alternative Identification
 - ✓ Review Policies and Previous Plans
 - ✓ Validate Base Case Analysis and Problem Statement
 - ✓ Affirm Evaluation and Screening Criteria
 - ✓ Identify all Possible Alternatives (brainstorm and describe)
- TAC #3 – Conduct Alternatives Screening
 - ✓ Review Applied Pros and Cons for each Concept
 - ✓ Identify Issues and Stakeholders
 - ✓ Dismiss as many Flawed or Ineffective Alternatives as Possible
 - ✓ Define and Assign Detailed Evaluation Tasks
- TAC #4 – Review Alternatives Evaluation
 - ✓ Validate alternative evaluation
 - ✓ Identify considerations for implementation phasing and coordination
 - ✓ Define Presentation Materials
- TAC #5 – Review Draft Plan
 - ✓ Review comment and issue (outreach) resolution recommendations
 - ✓ Define Next Steps
 - ✓ Acknowledge participation and dismiss TAC



**OR 99W/22 Rickreall Junction Refinement Plan
Technical Advisory Committee (TAC)
Conduct Alternative Identification**

**Division of State Lands Building - Mill Creek Room
Wednesday, May 24, 2000
10AM - 4PM**

TAC MEETING #2 -SUMMARY

ATTENDEES

Jim Buettner—Preliminary Design
Harlan Nale—Transportation Planning and Analysis Unit
Scott McKanna—Preliminary Design (on loan to TPAU)
Mark Fancey—Mid-Willamette Valley COG
Jim Allen—Polk County Planning
Anthony Boesen—Federal Highway Administration
Rick Williams - DLCD
Mel Sutter - City of Dallas Public Works
Erik Havig—Preliminary Design
Dan Fricke—Region 2 Planning
Rich McSwaim—Region 2 Traffic
Terry Cole—Region 2 Planning/Project Manager

REVIEW POLICIES and PREVIOUS PLANS

Population projections through 2025 have been developed. These are based on the 2020 projections that are adopted as part of the Polk County TSP and meet the requirements of Oregon Revised Statutes 195.036 for coordinated projections. Average annual growth rates for Dallas and Monmouth between 2000 and 2025 are 2.00 and 3.03 percent respectively.

Vacant lands analysis within the study area shows approximately 6.5 acres zoned for industrial development available within Rickreall. No vacant residential or commercial-zoned is found within the study area. Other vacant land in the area is zoned for Exclusive Farm Use (EFU). Uses in these areas will not produce major traffic impacts.

The Polk County Transportation Plan (TSP) states that the County will work with the city of Dallas to identify the location of a limited access collector located north of Dallas. This road would link Ellendale Road with Highway 223 north of the city and would be intended to alleviate some traffic congestion at the Ellendale Road/Highway 223 intersection. Construction of this road would shift some Salem-bound traffic from Dallas and outlying rural areas from the Ellendale Road connection to Highway 22 onto the Highway 223/22 intersection.

Major traffic generators:

- In Dallas, an increase in commercial growth in the next five (5) years including the addition of a second major grocery store in town. More commercial development is expected along Ellendale Road and Kings Valley Highway. The City hopes to have wastewater treatment facility expansion complete by August 2003 and is not under any type of moratorium.
- In Monmouth, several new developments could potentially impact the intersection. Development of a 9-acre commercial area along Monmouth-Independence Highway (at the S-curve) is expected within the next several years. In addition, development of a recently annexed residential property (approximately 80 acres) would add some 800 new residential units.
- Spirit Mountain Development Casino is in the process of studying the feasibility of adding an additional 100 rooms to the existing 100-room overnight facility. No expansion of the Casino is planned or anticipated through the planning period due to two reasons: (1) physical constraints at the site limit growth and (2) the Tribe is required, by law, to conduct gaming on no more than five (5) acres.
- The potential exists for Willamette Industries truck traffic to increase anywhere from 30 to 60 percent in the next few years as the sawmill facility is retooled.
- Willamina Lumber (Hampton) trucks travel from Willamina to Portland via Salem on Highway 22, rather than use Highway 18. A steady increase in truck traffic from the Willamina plant will occur. At present, 13 to 15 rail cars filled with lumber are shipped daily from the plant. Each car holds the equivalent of 4-5 trucks. If this rail line closes this material would then be shipped by truck. MWVCOG staff will contact ODOT rail and Willamina Lumber to obtain more information regarding the future of rail service to the area.

Modal Analysis:

MWVCOG is to review the OTP and contact local transit service and carpool providers to identify current and anticipated levels of service and the impacts associated with meeting projected needs. MWVCOG will provide this analysis to ODOT staff as soon as possible.

VALIDATE BASE CASE ANALYSIS and PROBLEM STATEMENT

The initial problem statement was presented to the TAC:

The intersections of Highway 22 with Highway 99W and the Dallas-Rickreall Highway are experiencing a high number of crashes typically associated with traffic signals and high-speed turning movements on rural highways. Left as is, this problem is expected to worsen as traffic volumes increase. Current traffic volumes do not exceed OHP mobility standards, but are very close. It is expected that traffic volume growth will reduce operational performance below OHP standards during the 20-year planning horizon. The entire Highway 22 corridor from Salem to Dallas suffers from current safety problems and will suffer from future safety and mobility problems. The problem is too big to be addressed all at once and must be solved incrementally. The problems at 22 and 99W are, by state and local consensus, the most immediate of these incremental challenges.

Is that statement still valid?

- Intersection as a whole has a .84 v/c ratio. Statement should be modified to show that Mobility standards are currently being exceeded.
- Through capacity is adequate.
- Intersection exceeds the current mobility standard because of left-turns vs. eastbound turns.

The group agreed that the problem statement was still valid, with modification of the Mobility issue. It now reads as follows.

*The intersections of Highway 22 with Highway 99W and the Dallas-Rickreall Highway are experiencing a high number of crashes typically associated with traffic signals and high-speed turning movements on rural highways. Left as is, this problem is expected to worsen as traffic volumes increase. Current traffic volumes **currently** exceed OHP mobility standards. It is expected that traffic volume growth will **further** reduce operational performance during the 20-year planning horizon. The entire Highway 22 corridor from Salem to Dallas suffers from current safety problems and will suffer from future safety and mobility problems. The problem is too big to be addressed all at once and must be solved incrementally. The problems at 22 and 99W are, by state and local consensus, the most immediate of these incremental challenges.*

Crash analysis data (1995-99):

- Usually 17-18 crashes per year with little variation.
- Rear-end is the predominant crash. Of these, westbound and eastbound rear-end most common. Most occur during afternoon and early evening - 5-7 PM. Afternoon sun may be a factor.
- Second most common are crashes involving turning movements, including some where the turn is protected. Most are daytime crashes during commuting peaks.
- No fatalities during this time period - 2 fatalities during 1993-94.
- No rear-end crashes at Dallas cutoff during this time period.
- Question raised as to the day of week for crashes - Friday afternoon/evening westbound rear-end and Sunday afternoon/evening for eastbound rear-end. Rich McSwain will try and obtain time of day/day-of-week data.
- Six type A (incapacitation) injury crashes during 1996-99.

Conclusions:

- Through movement crashes may be correlated to sun angle.
- Driver experience, including weekend drivers, may be a factor in crashes.
- The turning angle from all directions may be a factor in crashes.

Rich McSwain and Jim Buettner will coordinate on write-up for delivery to MWVCOG.

Literature Review:

- Adequate warning, maximizing visibility of signal heads, consider left turn phasing are techniques that have been used elsewhere.
- Flashing advance signs may be of some value. Flashing yellow "Prepare to Stop" sign may cause drivers to speed up.
- Offset left-turn refuges to improve sight lines.

- Use of traffic calming measures - channelization, center island, narrowing lanes, “roadside culture” etc., may be appropriate here.

Environmental Analysis:

- Historic, plant, and archaeology data will be available in the next week.
- A number of potential hazardous materials sites are located on Main Street (Rickreall) and on Rickreall road.
- A farmed wetland on Cove soil is located northwest of the intersection - 1:1 mitigation could be used.
- Riparian area on Rickreall Creek. Creek has water quality issues - but is at some distance from the intersection.

Conclusion:

- No insurmountable issues have been raised at this point.

Right-of-Way review:

- On the south side of Highway 22, ODOT owns several hundred extra feet of right-of-way.
- No excess right-of-way currently available on the north side of Highway 22.

Operations:

- May 17, 2000 manual counts used to supplement earlier counts. Peak hour volumes were seasonally adjusted and balanced. Exponential projections to 2025 were used.
- Highway 99 signal (v/c .84) and Dallas cutoff (v/c .95) are current problem areas. Future traffic volumes exceed (theoretically) capacity in these two areas.
- Questions and concerns were raised regarding the use of exponential rates to determine future traffic volumes. This analysis does not include any non-construction alternative (to SOVs) mode shifts, that reduce traffic volumes and is only partially based on past performance and trends. It was agreed that true linear straight-line projections would be developed. These may then be adjusted based on assumptions regarding future growth or the success of non-construction transportation alternatives.

Queuing Analysis:

- Scott McKanna will look at distances and requirements for turning queues.
- If the Highway 22 westbound signal phase is extended then the peak hour queuing for left turns from Highway 99 will increase.
- Concern raised about impacts to Rickreall if Highway 22 westbound signal phase is lengthened.

Geometrics:

- Everything is constructed to current design standards.
- No access issues are present - several farm accesses in the area and First Street (Rickreall) located 800-900 feet south on Highway 99.

- Scott McKanna will look at the weave distance available for cars traveling from Dallas to McMinville (DRH to 99W Northbound).

Based on the base case analysis, the problem statement was again revisited and affirmed.

AFFIRM EVALUATION and SCREENING CRITERIA

The group again reviewed the evaluation approach and criteria handed out at the last meeting. No modifications to the problem statement were raised.

IDENTIFY ALL POSSIBLE ALTERNATIVES

During the brainstorming session, the group identified the following list of alternative ideas for further consideration:

IDEA #1-Anthony Boesen's suggestion

- Construct some form of grade separation at Highway 99W/22 intersection
- T-up or develop flyover at Dallas-Rickreall Highway and move Dallas-Rickreall Highway 800 to 1000 feet west

IDEA #2- Rich McSwaim Safety/TSM Options

- More (and place larger) signal heads/increase signal head backing to mitigate glare
- Improve warning lights on approaches
- Install permanent Variable Message Signs (VMS) on approaches to 99/22W with radar to alert speeding drivers of speed and upcoming signal (sign shows speed and reads "SLOW DOWN" or something similar when warranted)
- Develop some sort of rumble strip treatment
- Increase intersection visibility through innovative shoulder striping
- Use paint to narrow lanes and force slowing
- Employ other means to increase roadside culture and create different "look and feel" for intersection approaches

IDEA #3-Idea 2 with improved channelization on Highway 99W

IDEA #4-Idea 2 with improved channelization on Highway 22

IDEA #5-Idea 2 with improved channelization on Highway 99W and Highway 22

IDEA #6-Improved channelization at Dallas-Rickreall Highway as per Scott McKanna

- Decrease skew
- Reduce throat of landing area for left-turn movements from Highway 22 WB to the Dallas-Rickreall Highway
- Develop "pork chop" on Dallas-Rickreall Highway to help delineate entrance to DRH from Highway 22
- Use paint on Highway 22 to channelize and delineate left turn and reduce left turn "exposure"

IDEA #7-Dallas-Rickreall Highway TSM

- Reduce speed on westbound Highway 22 approach to Dallas-Rickreall Highway
- Install VMS to advise of speed and upcoming intersection

IDEA #8-At-grade interchange

- Develop various jughandle (or similar) treatments to accommodate turning movements
- Analyze jughandle variations with and without signals

IDEA #9-Roundabout variations at Highway 22/99 intersection and/or Dallas-Rickreall Highway

IDEA #10-Develop and fund (continue to fund?) an enforcement plan

IDEA #11-Grade Separation at 22/99 and DRH using 1965 design

IDEA #12-Grade Separation at Highway 22/99 intersection and Dallas-Rickreall Highway -the Scott McKanna Variation, maintaining primary route continuity for Highway 22

IDEA #13-Grade Separation at DRH using the McKanna Variation flyover only

IDEA #14-Grade Separation at Highway 22/99 intersection and Dallas-Rickreall Highway using the Scott McKanna Variation flyover and an at-grade jughandle loop for the 22 westbound to southbound movement

IDEA #15-Grade Separation at Highway 22/99 intersection and Dallas-Rickreall Highway-the Jim Buettner Variation, establishing primary route continuity for the Highway 22 to Dallas-Rickreall Highway (and vice-versa) movements

ASSIGNMENTS

- ODOT Preliminary Design
 - 7) Document assessment of existing geometric conditions in a tech memo
 - 8) Work with TPAU and Region 2 to package improvement concepts and develop pro and con assessments for each package
 - 9) Develop rough cost estimates to compare shifting of highway alignment to development of a larger Hwy 99 overcrossing that would shift grade impacts north, away from Rickreall
 - 10) Develop graphics, at an appropriate level of detail, to depict improvement concept packages in a form suitable for inclusion in draft and final reports
 - 11) Work with Region 2 traffic to incorporate supplemental crash analysis data into pro and con evaluation
- ODOT Transportation Planning and Analysis Unit
 - 5) Work with PD and Region 2 to package improvement concepts and develop pro and con assessments for each package
 - 6) Develop true linear traffic forecast numbers and redo mobility and queuing analyses for 2000 and 2025 (no build)
 - 7) Develop 2015 forecast numbers and conduct mobility and queuing analysis (no build)
 - 8) Evaluate weave issues for vehicles making a right turn from the DRH and a left turn onto Hwy 99 NB.
 - 9) Work with Mid-Willamette Valley COG and develop forecast adjustments, if appropriate, to reflect alternative mode assumptions or other demand management potentials
 - 10) Apply new forecast numbers to improvement package concepts and analyze operational performance in 2015 and 2025 (at a level of detail sufficient to develop pro and con statements)

11) Develop graphics, at an appropriate level of detail, to depict the revised forecast numbers and their application to the improvement concept packages in a form suitable for inclusion in draft and final reports

- Mid-Willamette Valley COG
 - 11) Develop meeting minutes
 - 12) Conduct modal analysis and define relationship to highway operations
 - 13) Compile technical memos and reports and begin developing report text
 - 14) Compile technical graphics and begin preparation for inclusion in draft and final document

- ODOT Region 2 Traffic
 - 5) Conduct further analysis of crash data to determine if (and what) correlation between crashes and time of day/day of week exists and, if so what the implications are for potential design options

- ODOT Region 2 Environmentalist
 - 3) Complete collection of requested environmental analyses

- ODOT Region 2 Project Manager
 - 8) Work with PD and TPAU to package improvement concepts and develop pro and con assessments for each package

- Polk County
 - 2) Provide any available land use or traffic count data to MWVCOG and TPAU

- All TAC Members
 - 5) Review and comment of TAC minutes and assignments

- Mid-Willamette Area Commission on Transportation
 - 2) Review and comment to TAC and PLT on draft and final report

NEXT MEETING

The agenda for the next meeting is as follows:

TAC #3 – Conduct Alternatives Screening

- Review Applied Pros and Cons for each Concept Analyzed and Presented
- Dismiss as many Flawed or Ineffective Alternatives as Possible (document reasoning)
- Identify Issues and Stakeholders
- Define and Assign Detailed Evaluation Tasks for Remaining Alternatives

Next meeting is scheduled for June 27, 2000 - 8AM-12PM in Room 209 at ODOT Region 2 HQ at State Street and Airport Road in Salem.



**OR 99W/22 Rickreall Junction Refinement Plan
Technical Advisory Committee (TAC)
Conduct Alternatives Screening**

**ODOT Region 2 Headquarters - Room 209
Tuesday, June 27, 2000
8AM - 12PM**

TAC MEETING #3 -SUMMARY

ATTENDEES

Tony Snyder—Polk County Public Works
Bob Cortright - DLCD
Mel Sutter - City of Dallas Public Works
Dave Shea - City of Dallas Public Works
Mark Fancey—Mid-Willamette Valley COG
Jim Buettner—Preliminary Design
Harlan Nale—Transportation Planning and Analysis Unit
Scott McKanna—Preliminary Design (on loan to TPAU)
John deTar - Region 2 Planning
Erik Havig—Preliminary Design
Dan Fricke—Region 2 Planning
Rich McSwaim—Region 2 Traffic
Dave Bishop - Region 2
Terry Cole—Region 2 Planning/Project Manager

REVIEW EXISTING PLANS and POLICIES

Oregon Transportation Plan (1992)

The OTP does not specifically address improvements to Highway 22 or Highway 99W, but does show commuter transit service between Salem and Dallas as part of the preferred transportation system for the year 2012.

Oregon Highway Plan (1999)

The OHP designates Highway 22 as a Statewide Highway. This Highway has also been designated by the OTC as an expressway and is included as part of the National Highway System. The OHP designates Highway 99W as a Regional Highway. Neither highway is designated as a freight route.

For statewide non-freight routes, including Highway 22, and regional highways, including Highway 99W the v/c ratio is 0.75 at unincorporated communities, such as Rickreall. In rural areas, the v/c ratio is 0.70. Relevant OHP policies and standards will be included as an appendix to the final report.

Oregon Public Transportation Plan (1997)

The Oregon Public Transportation Plan (OPTP) provides for implementation in 2015 at three levels. Level 1 would essentially freeze ridership at current (1997) levels. Level 2 increases services such as senior and disabled public transportation, intercity bus service, and rideshare and transportation demand management (TDM).

Level 3 would expand services to meet numerous state and federal mandates and goals. Under Level 3, the service mix in small communities and rural areas would be significantly enhanced to ensure that mobility and intercity needs are met, and in some cases, commuter connections are available to persons living in these communities. There are no specific recommendations for this corridor in the OPTP.

Oregon Bicycle and Pedestrian Plan (1995)

The Oregon Bicycle and Pedestrian Plan (OBPP) states that pedestrian activity in rural areas is limited because travel distances tend to be great. The Plan mentions that most people will feel comfortable walking and bicycling along a roadway if well-designed facilities are available. Both Highway 22 and Highway 99 are identified as having 4-foot wide shoulders, which the Plan considers suitable for bicycling. Implementing Strategy 1A requires integration of bicycle and pedestrian facility needs into all planning, design, construction, and maintenance activities of the Department of Transportation and local units of government.

Willamina to Salem Corridor - Oregon Highway Route 22 - Interim Corridor Strategy (1996)

The Interim Corridor Strategy consists of goals and objectives that serve to guide the work of ODOT, cities, counties, and the Salem-Keizer Metropolitan Planning Organization in transportation planning and development of future transportation facilities in the corridor.

Pertinent objectives include:

- Using an approach that considers the entire corridor, establish park and pool/park and ride lots and promote car pooling. Explore development of facilities at major intersections with Highway 22, such as Highway 223.
- Develop all transit, park-and-ride and park-and-pool facilities with pedestrian amenities and secure bicycle parking in order to promote connection between those modes and transit.
- Continue to provide continuous bike facilities (bike lanes or highway) throughout the Highway 22 Corridor.
- Ensure that pedestrian facilities are replaced, added or upgraded to desired conditions in conjunction with other highway construction.
- Geometric improvements made to increase mobility of other transportation modes should be undertaken in a manner that minimizes the impact of those improvements on pedestrian mobility.
- Maintain existing travel times throughout the planning period.
- West of the Willamette River, avoid installation of additional traffic signals.

- West of the Willamette River, intersections with the highway may need to be replaced with interchanges. Where interchanges are constructed, land use controls should be implemented to protect the integrity of the interchange operations for transportation purposes.
- Manage highway facilities in a manner that does not result in conditions that are less than the following for highway traffic. LOS for Hwy 22 west of Highway 51 is B-C.
- Target safety improvement projects to sections of the corridor with the highest accident rates. Analyze the accident types at sites that fall within the top 10% of all accident index sites. Develop solutions that reduce accident rates, including:
 - Operational changes such as increased traffic enforcement and consideration of appropriate speed zones;
 - Minor design modifications, such as change in striping, geometric layout, or illumination; and
 - Major redesign including intersection replacement with interchanges, street alignment changes and passing lanes.
- Evaluate solutions to the safety concerns at the intersections of Highway 22 and Highway 99W and Highway 22 and Highway 223 near Rickreall.
- Analyze alternatives to reduce accident risk near the intersections with a high number of turning vehicles, including Highway 223, Highway 99W, and Highway 51.
- Provide opportunities for the use of alternative modes of transportation in conjunction with special events on or near the corridor.
- Improve pedestrian crossing opportunities, particularly in the urban sections of Highway 22, to reduce the “barrier” effect of the roadway and to foster good pedestrian connections between both sides of the road.
- Examine methods to reduce negative impacts and increase the positive impacts of Highway 22 corridor transportation systems on neighborhoods, parks, and community facilities.
- Avoid highway improvements near Baskett Slough National Wildlife Refuge that have significant adverse impacts to the Refuge. If impacts are unavoidable, strive to minimize those impacts.
- Consider enhancements or management techniques that maintain or enhance the visual quality of the corridor, particularly in the scenic rural sections west of Dallas.
- Evaluate and mitigate, as needed, the impact of Highway 22 corridor transportation improvements on water quality for adjacent streams and rivers, such as Mill Creek, Salt Creek, Rickreall Creek, and the Willamette River.
- Prepare an inventory of sensitive environmental and cultural resources in the corridor that identifies resources that should be avoided when transportation improvement projects are proposed. The inventory should include:
 - Rare, threatened, and endangered plants and animals or their known habitats;
 - Wetland resources;

- Creeks, streams, and rivers;
- Wildlife refuges or significant wildlife habitat; and
- Archeological or cultural resources.

- Prepare an inventory of hazardous material sites on the corridor that should be avoided when transportation improvements are proposed.

- Energy Impacts Objective H.1 Give priority to those projects that reduce energy consumption and vehicle miles traveled.

Polk County Transportation Systems Plan (1997)

The Polk County Transportation Plan (TSP) identifies both Highway 22 and Highway 99W as principal arterials in the County road system. The TSP identifies a number of conceptual road construction projects including the construction of an interchange at the Highway 22/Highway 99W intersection. The Plan states that the County will work with ODOT on any necessary studies related to these projects.

Moving Toward Action - The Marion and Polk Counties Regional Transportation Enhancement Plan - A Strategy for Improving Special Needs Mobility and Beyond (1998)

The Regional Transportation Enhancement Plan (R-TEP) work program includes creating two transit routes serving north Marion County and central Polk County; creating preliminary design and cost allocation for a regionally coordinated transportation system for inclusion in the 2000-2005 Statewide Transportation Improvement Program (STIP); developing a regional "brokerage" to coordinate non-emergency medical trips; and complete a needs assessment to quantify needs and estimate demand for services within the region.

Bob Cortright raised the issue that any analysis of alternatives should consider the benchmark in the Oregon Highway Plan (p.23) that sets a 2010 target of 38 percent of persons commuting to and from work during peak hours using means other than single-occupancy vehicles.

Harlan was asked to conduct sensitivity analysis regarding the reduction in single-occupancy vehicles needed to meet this benchmark for the various alternatives considered.

Assignments:

MWVCOG will review and summarize the Willamette Valley Transportation Strategy and the MWACT Strategy.

Note: Subsequent to the end of the meeting, MWVCOG staff reviewed the SKATS Origin and Destination Study (1994) and found that the percentage of single-occupancy vehicles traveling westbound from Salem across the Willamette during the PM commute period was about 67 percent, nearly meeting the OHP-referenced benchmark. MWVCOG staff reviewed this information with Terry Cole. Based on this information, it was determined that there is no need to conduct a sensitivity analysis to demonstrate the potential impact of meeting the benchmark in 2020. However, Region 2 will arrange for an SOV count in the vicinity of the 99/22 interchange to confirm that the SOV rates at the Marion and Center Street bridges are valid for the 99/22 area traffic. Any possible sensitivity analysis will be postponed until the new SOV counts are completed.

REVIEW MODAL INVENTORY DATA

Public Transit

CARTs currently makes 6 trips per day - between the hours of 6 am to 8 PM between Salem & Dallas. The service uses 18-person vans. CARTs staff estimates at about 25 percent occupancy at this time, although on several occasions demand has exceeded 100 percent. In those instances, complimentary dial-a-ride service was provided to those who could not be accommodated on the van. The service priority for the vans is persons with special needs, but commuters are encouraged to use the service as well.

No long-range feasibility studies or trip projections for the service have been developed.

Mid-Valley Rideshare

The Mid-Valley Rideshare program consists of a database of persons interested in carpooling within Salem and outlying communities. The database lists persons described as "active", which includes persons interested in ridesharing and some program participants that may be seeking additional riders and persons listed as "inactive". Based on the program definitions and database management, it is impossible to determine the exact numbers of commuters from Dallas area that use the program or to project future use of the program.

Pedestrian and Bicycle Travel

Bicycle facilities, consisting of either a bike lane or roadway shoulder/bikeway are available in the area between Salem and the project study area. Because the Corridor connects to Highway 18, the Oregon coast is a popular destination for longer distance touring.

Walkways are available throughout the most of the urban arterial sections of Highway 22 in the Salem urban area. In rural areas, such as the project study area, where provision of walkways is not cost-effective, paved shoulders serve as pedestrian walkways.

No counts of pedestrian or bicycle traffic are available.

Conclusion:

- Based on existing data, growth in non-auto travel modes will not significantly affect the magnitude of 2025 traffic projections for the intersection.

REVIEW OF MODIFIED TRAFFIC PROJECTIONS

Linear projections have been developed resulting in a minor change to peak hour projections. Highway 99W signal (v/c .84) and Dallas cutoff (v/c .95) are current problem areas. In 2025, v/c for 99W signal is 1.41 and v/c for the Dallas cutoff is 2.06.

Bob Cortright asked whether peak hour spreading had been considered in the analysis and wanted to ensure that the forecasted level of growth was consistent with the capacity of the Marion and Center street bridges.

John deTar noted that the system is not that constrained and that if spreading were occurring at the bridges the result in the study area would merely be a shifting of the peak hour.

Conclusion:

- Traffic analysis conclusions for the study area need to be consistent with the Bridgehead Engineering Study.

Assignment:

- **MWVCOG needs to document Bridgehead findings and show that peak hour spreading is not applicable in the study area.**

REVIEW APPLIED PROS and CONS for EACH CONCEPT ANALYZED AND PRESENTED
(Operational pros and cons developed by TPAU were passed out at the meeting—this section covers some of the major points raised in those analyses)Roundabout

Roundabouts are best where a 4-way stop is warranted. Maximum v/c is .80.

Cons:

- Not suited to a high-speed rural location.
- Not suited for Dallas cutoff due to high number of left-turning movements - leads to imbalanced flow.
- Install VMS to advise of speed and upcoming intersection
- Projected v/c ratios for single and dual-lane roundabouts at Highway 22/99 intersection exceed capacity.
- Projected v/c ratio for single lane roundabout at Dallas cutoff exceeds capacity

Conclusion:

- No additional operational feasibility analysis needed for the single lane option. This option and the dual lane option will no longer be considered at 22/99 (although the dual lane will be analyzed at 22/DRH for documentation purposes).

Assignments:

Harlan will develop analysis for dual-lane roundabout option at Dallas cutoff. Harlan & Eric will provide technical memos to MWVCOG.

TSM Concepts

Pros

- Quick, Low-cost treatments with some potential safety benefit.

Cons

- Must be incorporated with some other (costlier) measures to have any significant operational benefit.

Conclusion:

- This option remains acceptable for inclusion as part of phased approach for addressing these issues.

Channelization**Hwy 99W Only**

Pros:

- Decreases v/c ratio from 0.84 to 0.81 in year 1999

- Increases safety by providing protective phasing for 99W left-turning traffic flows

Cons:

- Protective left-turn phasing will increase delay and storage distances at the intersection
- All of the cons of the existing intersection

Hwy 22 Only

Pros:

- Adding both westbound dual-left-turn lanes on the eastbound approach along with right-turn lanes on both east and west approaches, decreases the v/c ratio in the year 1999 to 0.84
- Cost effective

Cons:

- Does not provide protective phasing for 99W left-turning traffic flows.
- Westbound dual left-turn lanes on 22 have minimal effect on the v/c ratio at the entire signalized intersection.
- 10-15 year fix at best
- All of the cons of the existing configuration.

Both 99W & Hwy 22

Pros:

- Decreases the v/c ratio to 0.75 in 1999 and 0.97 in 2015
- Increases both safety and capacity at the intersection
- Cost effective

Cons:

- The intersection will fail shortly after 2015 (using equal lane utilization for westbound through traffic flows).
- Westbound dual left-turn lanes on 22 have minimal effect on the v/c ratio at the entire signalized intersection
- 10 to 15 year fix best
- All of the cons of the existing configuration.

Conclusions:

- The channelization option for both 99 and 22 remains acceptable for next level of analysis, but will be a mid-term improvement, at best.

Assignments:

Harlan & Eric will analyze options regarding phasing and will perform more detailed operational analysis regarding combined channelization and TSM options. These options will also be analyzed in conjunction with eliminating left turn from Dallas-Rickreall Highway on 22 (see Dallas Cutoff Signalization).

Dallas Cutoff Signalization

The question was raised regarding the queuing problem and impacts to 22/99 intersection if this signal remains unsignalized.

Pros:

- Could potentially keep intersection from failing until 2015, but mobility standard would be exceeded much more quickly.

Cons:

- Signalization may increase queuing and interfere with 22/99 (could be avoided with double left-turn lands from 22 to the DRH).
- Additional signal in this rural location will create “shock-wave” in combination with 22/99 signal, undermining apparent performance.

Conclusions:

- The channelization option for both 99 and 22 remains acceptable for next level of analysis, but will be a mid-term improvement, at best.

Assignments:

Harlan will perform intersection analysis eliminating the northbound to westbound signal left-turn phase (only 15 vehicles during peak hour). Harlan will document for report the impacts to 22/99 intersection if Dallas Cutoff remains unsignalized.

Dallas Cutoff Flyover

Designed as a two-lane bridge to create some excess capacity and to eliminate future need for widening. Lane would be added east of 22/99 intersection in addition to two through lanes.

Pros:

- Can provide acceptable operations
- Is phasable with eventual grade separation alternatives

Cons:

- Potential problems with lane configuration and weave issue.

Conclusions:

- This option remains acceptable for next level of analysis.
- This option will be looked at in combination with 22/99 channelization.

Assignments:

Scott will re-run analysis with several new lane configurations.

At-grade jug-handle

Not yet analyzed with free rights from 22 to 99

Pros:

- Removes left turns from 22 to 99

Cons:

- Lane imbalance
- Left turns require going through the intersection twice. Free right onto 22 and 99 could be a possibility.
- Distance between jug handle and Dallas Cutoff (1,900 feet) requires a spacing exception.
- Mobility standards not met in 2015 or 2025

Conclusions:

- This option remains acceptable for next level of analysis.
- This option will be looked at in combination with Dallas Cutoff variations.

Assignments:

TPAU will analyze operational conditions with free flow right-turn lanes added in the NE and SW corners of the 99/22 interchange.

Grade separated jug-handle

Ramp terminal locations need to be refined.

Pros:

- Eliminates single 22/99 intersection.
- This option works well with significant reserve capacity.
- The cost of structures is not a fatal flaw.

Cons:

- McMinnville to Dallas right-turn traffic would conflict with 22 through traffic, but additional flyover for this traffic may not be worthwhile.
- Some spacing problems with 22/DRH intersection of potential flyover options

Conclusions:

- This option remains acceptable for next level of analysis.

Assignments:

TPAU will analyze operational conditions with free flow right-turn lanes added in the NE and SW corners of the 99/22 interchange.

Grade Separated Interchange Alternatives

Pros:

- Can work be phased-in after development of a Dallas flyover (one variation may be better than another—further assessment needed).
- Will meet mobility standards through forecast period.
- Will eliminate most identified safety concerns

Cons:

- Cost is highest
- Community impacts include possible impacts to crosswalk at Rickreall School due to landing point of overpass.
- More impact on marginal farmland

Conclusion:

- This option remains acceptable for next level of analysis.

Assignments:

Jim will provide more information regarding:

- ***Cost estimates, including costs of “throwaway” pavement due to realignment and bridge grade and curvature issues;***
- ***The ability to develop in phases;***

- Smaller footprint options and ROW Impacts to farmland

NEXT STEPS/CONCLUSIONS

- TAC will continue to review the pros & cons of concepts.
- Roundabout concept is eliminated from further consideration.
- Both jug-handle options remain under consideration pending analysis of right turn alternatives
- TSM/Channelization option remains under consideration.
- Channelization options will be refined through signal phasing.
- Flyover will be considered on its own merits as well as with channelization option.
- Flyover will be considered on its own merits in conjunction with jughandle option, noting concern regarding spacing.
- Grade separation options remain under consideration with further refinement of structure and alignment cost and location issues necessary.

ADDITIONAL ASSIGNMENTS

- ODOT Preliminary Design
 - 1) Document assessment of existing geometric conditions in a tech memo
 - 2) Work with TPAU and Region 2 to re-package improvement concepts and develop pro and con assessments for each redeveloped package
 - 3) Develop graphics, at an appropriate level of detail, to depict improvement concept packages in a form suitable for inclusion in draft and final reports
- ODOT Transportation Planning and Analysis Unit
 - 1) Work with TPAU and Region 2 to re-package improvement concepts and develop pro and con assessments for each redeveloped package
 - 2) Analyze performance consequences of right turn options for at-grade jughandles
 - 3) Analyze affect of routing SB to the DRH moves at 22/99 to Rickreall Road for the grade separation alternatives
- Mid-Willamette Valley COG
 - 1) Develop meeting minutes
 - 2) Conduct review of Willamette Valley Strategy and MWACT Strategy
 - 3) Compile technical memos and reports and begin developing report text
 - 4) Compile graphics and begin preparation for inclusion in draft and final document
- ODOT Region 2 Traffic
 - 1) Complete analysis of crash data to determine if (and what) correlation between crashes and time of day/day of week exists and, if so what the implications are for potential design options
- ODOT Region 2 Environmentalist
 - 1) Complete collection of requested environmental analyses
- ODOT Region 2 Project Manager
 - 1) Work with PD and TPAU to package improvement concepts and develop pro and con assessments for each package
- All TAC Members

1) Review and comment of TAC minutes and assignments

NEXT MEETING

The agenda for the next meeting is as follows:

TAC #4 –Complete Alternative Screening

- Review Applied Pros and Cons for each Concept Analyzed and Presented
- Dismiss as many Flawed or Ineffective Alternatives as Possible (document reasoning)
- Identify Issues and Stakeholders
- Define and Assign Detailed Evaluation Tasks for Remaining Alternatives

Next meeting is scheduled for August 2, 2000 - 8AM-12PM in Room 209 at ODOT Region 2 HQ at State Street and Airport Road in Salem.



**OR Hwy 99/22 Rickreall Junction Refinement Plan
Technical Advisory Committee (TAC)
Conduct Alternative Identification**

**Region 2 HQ—Room 222
Wednesday, August 2, 2000
8AM - 12PM**

TAC MEETING #4 -SUMMARY

ATTENDEES

Jim Buettner—Preliminary Design
Harlan Nale—Transportation Planning and Analysis Unit
Mark Fancey—Mid-Willamette Valley COG
Anthony Boesen—Federal Highway Administration
Dorothy Upton - Transportation Planning and Analysis Unit
Steve Oulman – DLCD
Kan Carter - City of Dallas Public Works
Mel Sutter - City of Dallas Public Works
Erik Havig—Preliminary Design
Dan Fricke—Region 2 Planning
Rich McSwaim—Region 2 Traffic
Jerry Erickson – District 3
Terry Cole—Region 2 Planning/Project Manager

COMPLETE ALTERNATIVE SCREENING

**Review Applied Pros and Cons for Each Concept Analyzed and Presented
(Operational pros and cons developed by TPAU were passed out at the meeting—this section covers some of the major points raised in those analyses)**

Discard Flawed and Ineffective Alternatives

Concept #1 – Roundabout

Evaluating these intersections with the adopted siting criteria for roundabouts shows that the proposed locations violate several of the recommended characteristics.

- Speed – Posted speed should be 60 km/h (35 mph) or less. These intersections are located in rural high speed environments posted speed of 50 mph with actual 85% speeds closer to 60 mph. Roundabout intersections require every entering vehicle to slow and yield to traffic already within the circulating roadway. In some cases entering vehicles will be required to stop. Either a slow yielding entry or a stopped vehicle produces a large speed differential from the traveling speeds of the highway. The speed differential could range anywhere from

40 mph to 60 mph, which is very significant. Large speed differentials can often lead to high accident locations. This is actually evident at the existing signalized intersection of Hwy. 99 and 99W. This signalized intersection encounters a very high number of rear end crashes most of which can be attributed to the high-speed differential. In addition, drivers in rural environments do not expect to encounter situations that provide high-speed differentials and therefore the crash potential is even higher.

- Trucks – Preliminary Design believes that roundabouts should not be located at intersections that accommodate a large volume of trucks. The Hwy. 22 @ 99W intersection accommodates on average approximately 2000 trucks per day. This is a large volume of truck traffic. Moderate to large trucks have difficulty in maneuvering through a roundabout. Roundabouts are designed to provide low speed movements for passenger type vehicles and even slower movements for truck traffic. This is accomplished by requiring vehicles to accommodate a turning roadway with small radii. Two lane roundabouts require large trucks to utilize both circulating lanes due to the large off tracking. This can create safety as well as operational efficiency problems.
- Number of lanes in roundabout – The interim siting criteria recommends that roundabouts operate as only single lane. This is to reduce the complexity of driving roundabouts. Multi-lane roundabouts offer multiple challenges for drivers. As roundabouts are a relatively new form of intersection control in the USA and particularly in Oregon, drivers need to understand the basic operating principles of single lane roundabouts before they can be expected to use a multi-lane roundabout efficiently and safely. The analysis performed by TPAU shows that both intersections would require multi-lane roundabouts with today's volumes.

In addition, roundabouts at both proposed locations are not consistent with other site characteristics that are recommended by the recently completed ODOT Roundabout research study. These include:

- Equal Traffic Flows – Roundabout intersections operate best where the volume entering the roundabout from each direction are nearly equal. Roundabouts do not operate effectively where one or two entry volumes are significantly higher than the other entries. Additionally, roundabouts are less effective with high left turn volumes. Both the Hwy. 22 @ 99W and Hwy. 22 @ 189 intersections accommodate heavy left turn traffic from westbound to southbound. These left turn demands are forecast to be 880 and 1575 respectively. These are very large volumes and will reduce the effectiveness and safety of a roundabout intersection.

Transportation analysis provided by TPAU showed that each intersection would require two lane roundabouts and that the OHP mobility standards would still be violated at both intersections.

Eric Havig noted that the analytical tools currently available do not allow for analysis of roundabouts in conjunction with other improvements, such as an interchange. He did note that roundabouts would not work well the conjunction with downstream improvements, such as an interchange that would create queuing at the roundabout.

Assignments:

Eric will add qualitative statements to his analysis, including issues such as downstream queuing, that cannot be adequately analyzed given available tools and models.

Conclusion:

The roundabout alternative for either Hwy 22/99 intersection and/or the Hwy 22/Hwy 223 intersection was dismissed by consensus of the TAC.

Concept #2 – Channelization

Note: The pros and cons of adding additional lanes at the Hwy 22/Hwy 99 intersection were discussed at the June 27, 2000 meeting. At that time it was determined that channelization was a viable option, but that additional analysis was needed regarding signalization of the Hwy 223/Hwy 22 intersection.

General Comments Regarding the Installation of Traffic Signals on Hwy 22 at either the Hwy 99 or Hwy 223 Intersection

Pros:

- Provides adequate gaps on Hwy 22 for cross-street traffic flows.
- The Hwy 99/Hwy 22 Hwy 22 already has a traffic signal that can be modified to increase safety.
- A cycle length of 120 seconds can be used to increase the “green-time” for Hwy 22 traffic flows at both Hwy 99 and Hwy 223 intersections.
- Traffic signals are relatively low cost traffic control devices.

Cons:

- Drivers do not expect traffic signals in a rural environment.
- Stopping traffic flows on a high-speed facility (50 – 55 MPH) increases both crash rates and crash severity for vehicles traveling through both of these intersections.
- The westbound left through lane at the Hwy 99/Hwy 22 intersection will contain most of the traffic flow traveling to Dallas.
- The unequal lane utilization resulting from the heavy westbound Dallas left-turn movement will cause the Hwy 99/Hwy 22 intersection to operate at a v/c ratio less than calculated (with equal lane utilization) for all years.
- Traffic signals installed on Hwy 22 actually cuts the capacity of the four-lane facility of Hwy 22 by stopping intersection traffic flows.
- The installation of traffic signals at both Hwy 99/Hwy 22 and Hwy 223/Hwy 22 intersections will cause these traffic signals to operate like two “isolated” traffic signals causing shock waves in traffic flow.

Traffic Signal Proposals for Hwy 99/Hwy 22 Intersection

Existing Intersection Configuration

Pros:

- Operates at $v/c = 0.81$ in the year 1999 using equal lane distribution.
- All of the pros mentioned in the general comments.

Cons:

- The high accident rate experienced at this intersection will continue into the future.
- All of the cons mentioned in the general comments.

Traffic Signal Proposal for Hwy 223/Hwy 22 Intersection

Existing Lane Configuration (Single Westbound Left-Turn Lane)

Pros:

- The installation of a traffic signal at this location could possibly meet a system warrant, but would likely not meet any other warrants.
- The heavy west to south (Salem to Dallas) traffic movement will be protected.
- All of the pros mentioned in the general comments.

Cons:

- The heavy WB to SB traffic movement would operate in the year 1999 at a $v/c = 0.92$ without installing a traffic signal at this location.
- The existing unsignalized intersection is not experiencing high crash rates.
- In the year 2025, there will be approximately 15-vehicles/hour turning from the south to the west. This is not enough volume to meet Preliminary ADT Traffic Signal Warrants to install a traffic signal at this location.
- This signalized intersection would operate at a $v/c = 0.95$ in the year 1999.
- This intersection configuration would operate in the year 1999 at a v/c ratio less than the requirement needed in the 1999 OHP for a Statewide (NHS) Non-Freight Route ($v/c = 0.70$).
- Both Hwy 223 and Hwy 22 would exceed V/Cs of 1.0 during heavy peak travel periods shortly after the year 1999.
- All of the cons mentioned in the general comments.

Traffic Signal Proposal for Hwy 223/Hwy 22 Intersection

Dual Westbound Left-Turn Lane on East Approach

Pros:

- The heavy WB to SB (Salem to Dallas) traffic movement would be protected.
- The additional westbound left-turn lane would decrease the v/c at this signalized intersection from 0.95 to 0.70 in the year 1999.
- This intersection would operate at a $v/c = 0.91$ in the year 2015.
- The installation of a traffic signal at this location could possibly meet a system warrant, but would likely not meet any other warrants..
- All of the pros mentioned in the general comments.

Cons:

- In the year 2025, there will be approximately 15-vehicles/hour turning from the south to the west. This is not enough volume to meet Preliminary ADT Traffic Signal Warrants to install a traffic signal at this location.
- This intersection configuration will operate in the year 2015 at a v/c ratio ($v/c = 0.91$) less than the requirement needed in the 1999 OHP for a Statewide (NHS) Non-Freight Route ($v/c = 0.70$).
- All of the cons mentioned in the general comments.

Traffic Signal Proposal for Hwy 223/Hwy 22 Intersection

Dual Westbound Left-Turn Lane on East Approach with the Elimination of the NB to WB Turning Movement

Pros:

- The heavy west to south (Salem to Dallas) traffic movement will be protected.
- This increases the operational efficiency of this intersection by eliminating one of the traffic signal phases.
- This intersection will operate at a $v/c = 0.98$ in the year 2025.
- The installation of a traffic signal at this location could possibly meet a system warrant, but would not likely meet any other warrant.
- All of the pros mentioned in the general comments.

Cons:

- The NB to WB traffic movement is not serviced at this intersection.
- This intersection configuration will operate in the year 2015 at a v/c ratio ($v/c = 0.83$) less than the requirement needed in the 1999 OHP for a Statewide (NHS) Non-Freight Route ($v/c = 0.70$).
- All of the cons mentioned in the general comments.

Harlan noted that 120-second cycle was used for modeling at both intersections. He noted that installation of a second signal at the Hwy 22/Hwy 223 intersection would create a “dilemma zone” problem where a driver would barely make the first signal and then attempt to get through the second at high speed. The way to correct this problem would be to phase the signals together, however this reduces efficiency and the associated v/c ratios at each intersection.

Traffic signal estimated costs - \$1.5 million for Hwy 22/99 intersection and \$1 million for Hwy 22//Hwy 223 intersection.

Eric stated that a system warrant was the only way to justify a signal at Hwy 22/Hwy 223 intersection and that this possibility was remote.

Assignments:

Eric and Harlan will:

- Conduct lane balance progression and incorporate in analysis;
- Discuss possibility of a system warrant with Ed Fisher;
- Look at impacts if “dilemma zone” problem is reduced; and
- Develop preliminary cost estimates.

Conclusion:

Channelization is the lowest cost alternative that can provide some operational/mobility relief, although it is not absolutely certain how much time it will buy until a more costly alternative is needed. It is expected that channelization could buy 12 to 15 years during which operational failure could be avoided, although mobility standards would not be met. It was the consensus of the TAC that the channelization alternative is a viable mid-range/phased solution and should be taken to the next level of analysis.

Concept #3 – Jughandles

At-grade option with jughandles in NW and SE quadrants

Pros:

- Removes left turns from 22 to 99

Cons:

- Jughandle in NW quadrant is too close to Hwy 22/Hwy 223 intersection
- Heavy Salem to Monmouth traffic must go through intersection twice
- Not operable in the long-term – signal fails mobility standard in 2025

At-grade option with jughandles in NE and SW quadrants with free right-turns

Pros:

- Removes left turns from 22 to 99
- Heavy Salem to Monmouth traffic does not have to go through intersection twice

Cons:

- Jughandle in SW quadrant is too close to Hwy 22/Hwy 223 intersection
- Double left-turn lanes required for Salem to Monmouth traffic
- Not operable in the long-term – signal fails mobility standard in 2025

At-grade option with jughandles in NE and SE quadrants – Variation “B”

Pros:

- Removes left turns from 22 to 99
- Better distributes most common movements
- East to north bound and east to south bound traffic don't need to go through a signal
- No signal needed at southern ramp
- Does not have spacing conflict with Hwy 22/Hwy 223 intersection
- Works better than other options for future phasing

Cons:

- Not operable in the long-term – signal fails mobility standard in 2025

Discussion ensued as to whether grade-separated jughandle variations should be dismissed because of spacing difficulties between jughandles in the NW quadrant and the Hwy 22/Hwy 223 intersection. It was agreed that these variations will not be dismissed, but will only be considered as part of a phased system of improvements.

Assignments:

TPAU will:

- Conduct further analysis regarding, lane progression and storage;
- Provide more detail regarding signing and lane balance;
- Speak with experts from other areas regarding signage solutions to eliminate wrong maneuvers
- Develop preliminary cost estimates for potential addition of a structure.

Conclusion:

Variation “B” with jughandles in the NE and SE quadrants seems to be the most viable long-term jughandle solution. Variations with jughandles in the NW and SW quadrants conflict with the Hwy 22/Hwy 223 intersection. Traffic projections for variation “B” in 2015 still meet mobility standards. Variation “B” is also the most adaptable to an eventual grade-separated structure. In 2025, westbound signalized ramp terminals will still operate better than the mobility standard when grade separated. The variation “B” at-grade jughandle alternative is viable and should be taken to the next level of analysis.

Grade-separated jughandle variations will be considered with respect to how well they will work as part of a phased system of improvements (from channelization to full grade separation).

Concept #4 – Flyover at Dallas-Rickreall Highway

The flyover ramp is about 1,000 feet from the Hwy 22/99 intersection. This option works with either at-grade or grade-separated jughandles, however if this option is developed in conjunction with a jughandle variation, jughandle must be in NE quadrant.

Pros:

- Works with jughandle variations (if in NE quadrant)
- Take the high-volume left turn for traffic to Dallas
- Reduces potential for head-on or severe angle crashes
- Operates at acceptable mobility standards well beyond 2025
- Can be part of a phased solution in conjunction other alternatives

Cons:

- If used with jughandle Variation “B” potential lane conflicts exist between traffic bound for Dallas and traffic bound for Corvallis—effective overhead signing would be critical

Assignments:

TPAU will:

- Provide more detail regarding weave considerations for eastbound and westbound traffic
- Develop more detailed cost estimates

Conclusion:

The flyover alternative is a viable modular piece of a phased package of alternatives.

Concept #5 - Interchange

“Jimmy” Interchange Variation

Hwy 99 passes over Hwy 22. Includes a signal for eastbound traffic from coast. Does not accommodate traffic Dallas to McMinnville traffic. Includes two structures with a west to east

flyover at Hwy 22/Hwy 223 intersection. The alignment has been moved north to produce overpass touchdown near Rickreall School.

With the 2-lane flyover at Hwy 22/Hwy 223 intersection, John deTar raised the issue of route continuity. Hwy 22 is a recreational route and coast-bound travelers could wind up in Dallas due to confusion at flyover location

The preliminary cost estimate for this option is \$13.7 million (does not include ROW or signal costs). If redesigned so that Hwy 22 passes over Hwy 99, preliminary cost is \$14.1 million. This option reduces impacts to Rickreall community.

“Scott” Interchange Variation

Hwy 99 passes over Hwy 22. Does not accommodate traffic Dallas to McMinnville traffic. Includes three structures with two separate flyovers at Hwy 22/223 intersection. The alignment has been moved north to produce overpass touchdown near Rickreall School.

The preliminary cost estimate for this option is \$15.5 million (does not include ROW or signal costs).

Comparison of Variations:

- No difference in operations or performance, both perform well in 2025 and beyond
- Both will require a signal in 2025 for south-side ramp terminal at 22/99
- “Scott” variation more conducive to phasing with Hwy 22/223 intersection flyover and with channelization and jughandles—lower cost for phasing
- “Jimmy” variation has more throwaway pavement when phased
- “Jimmy” variation is less costly due to two structures
- ROW impacts are similar, but “Scott” variation needs slightly more for dual flyover at Hwy 22/223 intersection
- If Hwy 22 is constructed over Hwy 99, maintenance may be an issue due to increased structure size

Assignments:

Eric and Jim will document pros and cons of each variation in greater detail, including descriptions of opportunities and constraints regarding construction and phasing and providing more detailed cost estimates.

Conclusion:

Both variations are viable long-term solutions. No significant differences exist regarding cost and costs and operations. The additional cost of moving Hwy 22 over Hwy 99 should be balanced against the impacts to the Rickreall community. Both variations should move forward as viable long-range concepts with the significant differences described for future consideration.

Note: The “deTar” interchange variation (single point diamond at 99/22) was also introduced at the meeting. This configuration would eliminate the southbound point of the interchange. It was determined that pros and cons of this option as well as some operational characteristics are not very well enumerated at this time, although some significant issues exist, including size of structure, operability in a rural area, retaining structures, and interaction with 22/223. Eric and

Harlan will further develop pro and cons, including cost and meet with Terry to determine if this variation should be moved to the next level of analysis. Determination and reasons will be shared at the next TAC.

OUTREACH STRATEGY

Terry Cole asked if the TAC still felt that the outreach strategy consisting of stakeholder interviews with a final work session with the Polk County Board of Commissioners remained valid. The TAC affirmed the outreach strategy.

Issues Identification for Consideration by Stakeholders

- One key message
- Must consider both intersections
- Impact of Hwy 99 southbound lanes to Rickreall
- Future impact on Rickreall Road/Hwy 99 intersection

The issue was raised as to whether the Rickreall Road intersection with Highway 99 should be upgraded to allow it serve as a bypass for certain movements on Highway 22. The group consensus was that the issues would have to be raised and better defined for the outreach process, but that more detail was needed before the TAC could propose adding this to the alternatives and costs associated with this project.

Assignments:

Eric, Jim, and Harlan will provide additional details regarding the Hwy 99/Rickreall Road intersection - including issues, constraints, footprints, and lane demands

ADDITIONAL ASSIGNMENTS

- Mid Willamette Valley COG
 - 15) Work with ODOT Region 2 Project Manager on presentation materials for outreach to stakeholders.
 - 16) Work with ODOT Region 2 Project Manager on funding options for improvements within the MWACT context.
- ODOT Region 2 Project Manager
 - 9) Work with MWVCOG on funding options for improvements within the MWACT context.
 - 10) Work with MWVCOG on presentation materials for outreach to stakeholders.
 - 11) With develop draft list of stakeholders for circulation to the TAC.
 - 12) Develop preliminary schedule of stakeholder interviews.
- All TAC Members
 - 6) Review and comment of TAC minutes and assignments

NEXT MEETING

The next meeting will be scheduled for late September at the earliest.

The tentative agenda is as follows:

AGENDA #5 (remembering that we had an agenda 1A and 1B)

- Review Alternatives Evaluation (gain consensus on final draft)
- Identify Considerations for Implementation Phasing and Coordination
- Affirm Issues and Stakeholders
- Define Presentation Materials
- Review Draft Outreach Schedule



**OR Hwy 99/22 Rickreall Junction Refinement Plan
Technical Advisory Committee (TAC)
Conduct Alternative Identification**

**Region 2 HQ—Room 209
Friday, October 27, 2000
8AM - 12PM**

RICKREALL TAC—AGENDA #5 SUMMARY

ATTENDEES

Jim Buettner—Preliminary Design
Harlan Nale—Transportation Planning and Analysis Unit
Anthony Boesen—Federal Highway Administration
Dorothy Upton - Transportation Planning and Analysis Unit
Bob Cortright – DLCD
Jim Allen – Polk County
Erik Havig—Preliminary Design
Dan Fricke—Region 2 Planning
Rich McSwain—Region 2 Traffic
John deTar—Region 2 Planning Manager
Terry Cole—Region 2 Planning/Project Manager

COMPLETE ALTERNATIVE SCREENING

The meeting began with a review of the results of the more detailed analysis assigned at the last meeting. The TAC then agreed on the content and direction for the first draft of the report with respect to the alternatives analyzed thus far.

Confirmation of Discarded Alternatives

Dismissed Alternative Concept – Roundabout

Based on the additional analysis provided by Erik Havig, the TAC confirmed their recommendation to eliminate the Roundabout option from further consideration.

Dismissed Alternative Concept – Single Point Urban Diamond (SPUD)

Based on the additional analysis provided by Erik Havig, the TAC confirmed their recommendation to eliminate the SPUD option from further consideration.

All other dismissed alternatives are variations on one of the alternative concepts that will be advanced. These dismissed alternatives will be addressed as part of the discussion on the recommended alternative concepts and will be referred to as dismissed alternative variations, as opposed to dismissed alternative concepts.

Confirmation of Recommended Alternative Concepts

Alternative Concept #1 – Safety Measures

- The TAC reaffirmed that recommended step one to deal with the intersection issues will be some combination of “softer” engineering safety measures as previously discussed including, but not limited to, improved fixed signing, signal head design, variable message signing, left turn phasing, offset left-turn refuges to improve sight lines.

Alternative Concept #2 – Channelization/Signalization

- The TAC reaffirmed their recommendation that a full channelization option be forwarded as the appropriate mid-range alternative, with the forecast that it could remain operable until approximately 2012 (+ or -).
- Traffic section sent a memo to Harlan Nale indicating that signalization would not be appropriate or accepted at the Highway 22/223 intersection. The primary reason for concern was the lack of spacing and dilemma zone that would be created for drivers. Based on this memo, only turn lane and minor realignment options will be considered at the Highway 22/223 intersection.
- Lane balance issues were also discussed and it was concluded that, while the V/C would be somewhat reduced by the imbalances, this could be partially offset with proper advance signing and adequate storage for the WB to SB movement from Highway 22 to Highway 99.

Alternative Concept #3 – Jughandles

- Because of weaving problems, the TAC agreed to only recommend the B variation jughandle for further consideration as a medium to long-range alternative.
- While there is some operational value to pursuing the at-grade jughandle variation, it is marginal when compared to the channelization alternative. Consequently, only the grade separated jughandle alternative will be recommended for further consideration—the at-grade will be described and dismissed.
- In the grade separation alternative, Highway 22 would cross over Highway 99 in order to minimize the impacts on the Rickreall community
- In order to minimize impact to sensitive lands, realignment of Highway 22 would only be to the extent needed to stage construction of the new overcrossing.
- Concern was expressed over the operability of the dual left turn needed to serve the left turn movements from 22 WB to 99W SB. Whether or not this movement could be accommodated as a single lane left turn was raised. Long term (20-25 years), the ramps in the NE quadrant of the grade separation would have to be moved to the NW quadrant in order to keep this design operable.

Alternative Concept #4 – Flyover at Dallas-Rickreall Highway

- Based on more extensive analysis of weave, spacing, and phasing issues only one flyover alternative at 223/22 has been determined to be operationally feasible.
- This alternative keeps 22 westbound and 223 at-grade and elevates 22 eastbound over 223. 22 westbound would split on its approach to 223 with two lanes splitting left into Dallas (as 223) and one lane continuing to the coast.
- This alternative can be used with either a grade separated jughandle alternative or a full grade separation at 99W/22.

Alternative Concept #5 – Grade Separated Jughandle with loop ramp in NW Quadrant

- Developing a loop ramp in the NW quadrant of the 22/99W intersection (in the grade separated jughandle alternative) was identified as a viable option for extending the life of the grade separated alternative.
- This addition would also work as the first step to developing a full interchange at 22/99W, if and when a full interchange becomes necessary.
- Concern was raised over the potential intrusion of a 99W SB to 22 WB ramp into farmland and it was agreed that this feature would be designed to stay as close to the existing 22 alignment as possible.

Alternative Concept #6 – Full Interchange

- The two full interchange alternatives developed for previous discussion (the “Jimmy” and “Scott” variations) were discussed. It was agreed that, while each would be documented, a hybrid variation that would incorporate and reuse many of the elements of the grade separation jughandle and flyover alternatives would be recommended for consideration in the long-range period beyond the analysis period.
- As with the grade-separated jughandle, Highway 22 would cross over Highway 99W and realignment of Highway 22 would only be to the extent needed to stage construction of the new overcrossing.
- Aside from illustrating and costing out this potential hybrid alternative, no additional analysis will be conducted as the need for this level of improvement is beyond the 25-year planning horizon and analysis period.

Assignments to Complete 1st Draft Alternative Recommendations

- ❖ PD and TPAU will develop a single lane left turn option for the NE quadrant ramp of the grade separated “B” jughandle alternative and document the operational and design consequences.
- ❖ PD will develop diagrams to illustrate the recommended alternative designs keeping new construction elements as close to the existing Highway 22 alignment as possible.
- ❖ PD will finalize cost estimates for all recommended alternatives
- ❖ PD will document how the recommended alternatives can continue to provide route continuity for Highway 22.
- ❖ PD will develop an alternative comparison matrix so all elements of consideration can be viewed to understand why either concepts or variations have been advance or dismissed.

RICKREALL COMMUNITY ISSUES

Even with the elevation of Highway 22, it is apparent from the analysis to date that the Rickreall community faces significant transportation problems that will need to be addressed as part of this planning process. These problems are due to potential weaving issues from the proposed double left turn from 22 WB to 99W SB and traffic and development issues that will exist whether the 22/99W/223 issues are addressed or not. It was agreed that the scope of this project would be expanded to address the Rickreall community issues.

ASSIGNMENTS TO ASSESS RICKREALL COMMUNITY TRANSPORTATION ISSUES

- ❖ PD will gather air photos, ROW maps, and as-built diagrams to develop baseline illustrations of current geometric conditions and constraints.
- ❖ Region 2 Traffic Section and PD will develop crash information from the 22/99W intersection to Orr's Corner.
- ❖ Region 2 Traffic Section will conduct a speed zone analysis through and south of Rickreall.
- ❖ TPAU will assemble or order mainline volume counts south of Rickreall (perhaps as far as Cloud Corner).
- ❖ Polk County will provide information about the Rickreall element of the County's periodic review and the Area Advisory Committee process to MWVCOG.
- ❖ Mid-Willamette Valley COG will work with Polk County to define future development potential in the Rickreall area and provide that information to TPAU.
- ❖ Using the MWVCOG and Polk County data, and historic counts, TPAU will develop forecast traffic numbers for 99W and the Rickreall Road intersection.
- ❖ Region 2 Planning will supply an intersection turning movement count for the 99W/Rickreall Road intersection.
- ❖ Region 2 Planning will work with District and Region Access Specialists to develop an access profile (permits, approaches, easements, grants, etc.) for all 99W frontage.
- ❖ TPAU will analyze existing and future no-build operating conditions.
- ❖ Using the operational, geometric, crash, and access data, PD will work with TPAU and Region 2 Planning to develop cross-section and access treatment design alternatives through Rickreall, with emphasis on meeting both pedestrian/school/safety needs and mobility standards.
- ❖ TPAU will analyze the existing and future operational conditions of all design alternatives.
- ❖ Region 2 Traffic Section and PD will review and comment on the safety issues associated with all design alternatives.
- ❖ Region 2 Planning and Traffic will meet with MWVCOG, PD, and TPAU to develop a time frame for completion of new Rickreall task assignments.

OUTREACH

Because of the significant analysis tasks identified for the Rickreall community, the TAC agreed to postpone any outreach efforts until the new analysis tasks reached preliminary completion and a discussion recommendation is produced. MWVCOG will incorporate the Rickreall Area Advisory Committee into the outreach process when it begins.

ADDITIONAL ASSIGNMENTS

- ❖ All TAC Members—review and comment on TAC minutes and assignments

NEXT MEETING

The next meeting will be scheduled after the Rickreall task timeline is established. A meeting time will be announced before Thanksgiving.

The tentative agenda is as follows:

AGENDA #6 (remembering that we had an agenda 1A and 1B)

- Review Rickreall community analysis
- Develop revised outreach strategy



**OR Hwy 99/22 Rickreall Junction Refinement Plan
Technical Advisory Committee (TAC)
Conduct Alternative Identification**

**Region 2 HQ—Room 116
Wednesday, February 7, 2001
9AM - 12PM**

RICKREALL TAC—AGENDA #6 SUMMARY

ATTENDEES

Jim Buettner—Preliminary Design
Harlan Nale—Transportation Planning and Analysis Unit
Anthony Boesen—Federal Highway Administration
Thanh Nguyen - Transportation Planning and Analysis Unit
Bob Cortright – DLCD
Jim Allen – Polk County
Tony Snyder - Polk County
Jerry Erickson - ODOT Maintenance
Kenn Carter - City of Dallas
Mel Sutter - City of Dallas
Mark Fancey - MWVCOG
Erik Havig—Preliminary Design
Dan Fricke—Region 2 Planning
Terry Cole—Region 2 Planning/Project Manager

RICKREALL COMMUNITY ISSUES AND ANALYSIS

At the last TAC meeting on October 27, 2000, it was agreed that the project scope be expanded to address Rickreall community issues. Even with the elevation of Highway 22, it is apparent from the analysis to date that the Rickreall community faces significant transportation problems that will need to be addressed as part of this planning process. These problems are due to potential weaving issues from the proposed double left turn from 22 WB to 99W SB and traffic and development issues that will exist whether the 22/99W/223 issues are addressed or not.

Hwy 99W and Rickreall Road Intersection

Jim Buettner presented maps showing four and 5 lane (with left turn refuges) configurations for Hwy 99W through Rickreall. A four lane section through the community would require the parking for the local feed store be moved to the side or rear of the business.

Forecast traffic volume for Hwy 99W through Rickreall is 24,000 vehicles per day in 2025. Analysis shows that the forecast traffic volume will tax the existing 2-lane section on Hwy 99W as well as the Hwy 99W/Rickreall Road intersection. Given the volume and distribution of traffic

a minimum of four lanes will be needed on Hwy 99W by 2025. The configuration could include four through lanes (2 in either direction) and left-turn refuges at the Hwy 99W/Rickreall Road intersection. The analysis shows that the left-turn refuges are more critical, for safety reasons, than is the second through travel lane. However, single through lanes in either direction fail at 2020 traffic volumes.

A signal at the Hwy 99W/Rickreall Road intersection could introduce some gaps in through traffic to aid pedestrians and local traffic circulation. ODOT Traffic Section does not see signal warrants at this intersection until some option, beyond channelization, is constructed at the Hwy 22/99 intersection. Installing a closed median on Hwy 99W through Rickreall would re-direct some local traffic and hasten the need for a signal.

Several issues were raised:

- The 30 left turn movements from Rickreall Road EB onto Hwy 99W have a V/C greater than 1.0 in 2015 for all proposed configurations. Construction of a flyover at Greenwood Road may alleviate this problem although the result could be just trading traffic volumes.
- Due to conflicts between through traffic and left-turn movements, there was discussion regarding construction of a roundabout for the Hwy 99W/Rickreall Road intersection. No analysis has yet been done for this alternative, however Eric Havig stated that it is doubtful that a roundabout would be an efficient solution due to the disproportionate amount of through traffic at this intersection. He noted that a signal would probably be a better solution.

Assignments:

- ❖ TPAU will do a preliminary analysis of the roundabout concept for the Hwy 99W/Rickreall Road intersection.

Community Development

Jim Allen confirmed that the County is involved in the periodic review process (unincorporated communities planning) for Rickreall. The process will result in Zoning Ordinance amendments limiting the size of commercial and industrial buildings in the community. Several properties may be rezoned for industrial development, including a property on the east side of Hwy 99W south of the fairgrounds and the former highway ROW property in the eastern portion of the community. Future commercial and industrial development in the community will most likely be limited to these two properties. Some expansion of the fairgrounds may also occur. Lack of a sewer system will limit future growth in the community.

The County recently held a community meeting that was attended by approximately 60 local residents. Participants indicated that they would like speeds reduced on Hwy 99W and would like a divided highway.

Local Circulation

Jim Buettner presented several concepts for additional local access roads in the community. These include north-south streets on either side of Hwy 99W at the eastern and western edges of the community boundary and a split-T concept for Rickreall Road eastbound. In the split-T concept, the existing west leg of the Hwy 99W/ Rickreall Road intersection would be closed with

a cul-de-sac. The west leg connection to Hwy 99W would then be constructed one block north of the existing location.

Under a 4 or 5-lane configuration on Hwy 99W, the split-T concept would require eastbound traffic on Rickreall Road (traveling from Dallas to Derry) to turn right on Hwy 99W, move immediately to the left through lane or left-turn refuge and then make a left turn back onto Rickreall Road. This would add to the projected left-turn/through traffic conflicts on Hwy 99W. For this reason, this concept was dismissed by the TAC.

Sidewalks were not included in the four and 5-lane concepts for Hwy 99W through Rickreall.

If a continuous median is constructed on Hwy 99W, mountable curbs will be needed for the Fire District.

Assignments:

- ❖ PD and TPAU will provide information regarding phasing local circulation improvements in conjunction with Hwy 99W/Hwy 22 intersection improvements phasing.
- ❖ PD will analyze impacts to property with sidewalks along Hwy 99W.
- ❖ PD will look at local circulation and parking lot replacement for local businesses.
- ❖ PD will delineate local accesses and develop an access management plan for the area.
- ❖ PD will analyze median and pedestrian crossing opportunities.
- ❖ MWVCOG will provide parcel maps in digital format to PD.

OUTREACH

At the next meeting, the TAC will discuss the outreach strategy and review the list stakeholders. Because of local access issues, the local fire district may need to be added to the stakeholders list.

ADDITIONAL ASSIGNMENTS

- ❖ All TAC Members—review and comment on TAC minutes and assignments

NEXT MEETING

The next meeting is scheduled for March 7, 2001 from 9 am to Noon.

The tentative agenda is as follows:

AGENDA #7 (remembering that we had an agenda 1A and 1B)

- Review Rickreall community analysis
- Develop revised outreach strategy
- Review list of potential stakeholders for outreach



**OR Hwy 99/22 Rickreall Junction Refinement Plan
Technical Advisory Committee (TAC)
Rickreall Community Analysis**

**Region 2 HQ—Room 209
Wednesday, March 7, 2001
9AM - 11AM**

RICKREALL TAC—AGENDA #7 SUMMARY

ATTENDEES

Jim Buettner—Preliminary Design
Harlan Nale—Transportation Planning and Analysis Unit
Anthony Boesen—Federal Highway Administration
Thanh Nguyen - Transportation Planning and Analysis Unit
Jim Allen – Polk County
Dave Bishop - Region 2
Dan Bish - Traffic Management
Mark Fancey - MWVCOG
Erik Havig—Preliminary Design
Dan Fricke—Region 2 Planning
Terry Cole—Region 2 Planning/Project Manager

RICKREALL COMMUNITY ISSUES AND ANALYSIS

At the TAC meeting on October 27, 2000, it was agreed that the project scope be expanded to address Rickreall community issues. Even with the elevation of Highway 22, it is apparent from the analysis to date that the Rickreall community faces significant transportation problems that will need to be addressed as part of this planning process. These problems are due to potential weaving issues from the proposed double left turn from 22 WB to 99W SB and traffic and development issues that will exist whether the 22/99W/223 issues are addressed or not.

Hwy 99W and Rickreall Road Intersection

Harlan Nale presented analysis of various signalized and unsignalized alternatives for the Hwy 99W/Rickreall Road intersection. These alternatives were analyzed in conjunction with various alternatives for the Hwy 99W/22 intersection as summarized below:

**Hwy22/99W No Build Alternative & Unsignalized intersection at 99W/Rickreall Road -
Two lanes on Hwy99W**

- In 2015, v/c ratio will exceed 1.0 for Rickreall Road EB to 99W NB and SB as well as Rickreall Road WB to 99W SB.
- By 2025, the v/c ratio for all turning movements from Rickreall Road onto 99W will exceed 1.0.

Hwy22/99W - Build Alternative & Unsignalized intersection at 99W/Rickreall Road - Three lanes on Hwy99W

- In 2015, v/c ratio will exceed 1.0 for Rickreall Road EB to 99W NB and Rickreall Road WB to 99W SB. The v/c ratio of .88 for the Rickreall Road WB to 99W SB movement exceeds the OHP standard.
- By 2025, the v/c ratio for all turning movements from Rickreall Road onto 99W will exceed 1.0.

Hwy22/99W - Build Alternative & Unsignalized intersection at 99W/Rickreall Road - Four lanes on Hwy99W

- In 2015, v/c ratio will exceed 1.0 for Rickreall Road EB to 99W SB.
- By 2025, the v/c ratio for all turning movements from Rickreall Road onto 99W will exceed 1.0.

Hwy22/99W - Build Alternative & Unsignalized intersection at 99W/Rickreall Road - Five lanes on Hwy99W

- In 2015, v/c ratio will exceed 1.0 for Rickreall Road EB to 99W SB.
- By 2025, the v/c ratio for all turning movements from Rickreall Road onto 99W will exceed 1.0.

Hwy22/99W - Build Alternative & Signalized intersection at 99W/Rickreall Road - Year 2025

- With three lanes on 99W (no left turn protection), the v/c ratio at the signalized intersection is 1.01 (90 second cycle).
- With four lanes on 99W (no left turn protection), the v/c ratio at the signalized intersection is 0.64 (60 second cycle).
- With five lanes on 99W (no left turn protection), the v/c ratio at the signalized intersection is 0.63 (60 second cycle).

Hwy22/99W - Build Alternative (no interchange) & Split "T" concept (The existing west leg of the Hwy 99W/ Rickreall Road intersection would be closed with a cul-de-sac. The west leg connection to Hwy 99W would then be constructed one block north of the existing location.)

- This alternative requires EB traffic on Rickreall Road (traveling from Dallas to Derry) to turn right on Hwy 99W, move immediately to the left through lane or left-turn refuge and then make a left turn back onto Rickreall Road. This would add to the projected left-turn/through traffic conflicts on Hwy 99W as well as present an unsafe weave situation. For this reason, this concept was dismissed by the TAC.

Hwy22/99W - Build Alternative (no interchange) where Rickreall Road EB left turn is allowed and WB left turn is rerouted through the intersection.

- With four lanes on 99W and two-lane approaches on Rickreall Road, v/c ratio exceeds 1.0 for all EB and WB movements.

- With four lanes on 99W and indirect left turn on Rickreall Road east approach, v/c ratio exceeds 1.0 for EB and WB through movements as well as the rerouted EB to NB left-turn movement.

Hwy22/99 - Build Alternative (no interchange) where Rickreall Road through movements allowed only (EB to SB movement and WB to NB movement rerouted).

- With four lanes on 99W and two-lane approaches on Rickreall Road, v/c ratio exceeds 1.0 for all Rickreall Road movements (including the rerouted movements).
- With four lanes on 99W and one lane approaches on Rickreall Road, v/c ratio exceeds 1.0 for EB and WB through movements.

Based on the analysis, the TAC reached the following conclusions:

- A three or four-lane section for Hwy 99W through Rickreall with channelization and signalization of the 99W/Rickreall Road intersection after 2015 provides reasonable operability.
- The signalization of the 99W/Rickreall Road intersection can be installed in conjunction with either of the two preferred grade-separation alternatives at the 99W/22 intersection. The first being a “B” configuration jughandle and the second being an interchange.
- Insufficient data is available to recommend either a three-lane or four-lane option for Hwy 99W.

Hwy 99W and Rickreall Road Intersection Roundabout Alternatives

Harlan Nale presented analysis of a single lane and two multi-lane roundabout options.

Single-Lane Roundabout

- In 2025, with no interchange at the 99W/22 intersection, the v/c ratio is less than the maximum acceptable OHP standard of 0.80 for all four legs of the roundabout.
- In 2025, with an interchange at the 99W/22 intersection, the v/c ratio is less than the maximum acceptable OHP standard of 0.80 for all the west, south, and east legs of the roundabout. The v/c ratio for the north leg is 0.80.

Multi-Lane Roundabout (2-1-2-1) - Single Lane Approaches from East and West

- In 2025, with no interchange at the 99W/22 intersection, the v/c ratio is less than the maximum acceptable OHP standard of 0.80 for all four legs of the roundabout. Queuing lengths are 80 feet on the north leg and 80 feet on the south leg.
- In 2025, with an interchange at the 99W/22 intersection, the v/c ratio is less than the maximum acceptable OHP standard of 0.80 for all legs of the roundabout. Queuing lengths are 87 feet on the north leg and 83 feet on the south leg.

Multi-Lane Roundabout (2-2-2-2) - Two Lane Approaches on All Directions

- In 2025, with no interchange at the 99W/22 intersection, the v/c ratio is less than the maximum acceptable OHP standard of 0.80 for all four legs of the roundabout. Queuing lengths are 67 feet on the north leg and 65 feet on the south leg.
- In 2025, with an interchange at the 99W/22 intersection, the v/c ratio is less than the maximum acceptable OHP standard of 0.80 for all legs of the roundabout. Queuing lengths are 73 feet on the north leg and 70 feet on the south leg.

For all alternatives:

- The size of the roundabout may have some impacts to property primarily in the SE and NW quadrants of the intersection. Impacts in the NW quadrant may be lessened if the Rickreall Road approach leg is realigned further south.
- Speed differentiation for vehicles entering the roundabout is a concern. In particular, northbound vehicles will need to slow from approximately 45-50 mph to approximately 20 mph when entering the roundabout.
- The unbalanced flows at this intersection present a concern. The through traffic on Hwy 99W may dominate the circulation within the roundabout.

Based on the analysis, the TAC reached the following conclusions:

- A roundabout for the Rickreall Road/99W intersection remains a medium-term alternative for the Rickreall Road/99W intersection. However, concerns exist regarding the unbalanced flows and speed differentiation.

Assignments:

- ❖ PD will determine the approximate impacts to existing properties for the roundabout alternatives.

Local Access and Community Impacts

Jim Buettner presented information regarding property impacts. Seven-foot driveways in conjunction with a 5-lane section for 99W would leave little room between existing buildings and the sidewalk location. The gas station property would be impacted by the sidewalks. No buildings would be impacted, however.

A median opening would need to be provided at Church Street for use by the Fire District. This could also be used as a pedestrian refuge for school children crossing the highway. A median opening at Pagent Street is another possibility.

Some local re-routing, including the possible vacation of Burch street is possible.

Under the various alternatives for the Rickreall Road/99W intersection, a local access road on the east side of 99W may need to be developed to serve several properties.

A suggestion has been made to consider relocating Rickreall School across the highway. Issues regarding historic property status will need to be researched.

Assignments:

- ❖ PD will look at local circulation and parking lot replacement for local businesses.
- ❖ PD will delineate local accesses and develop an access management plan for the area.
- ❖ PD will analyze median and pedestrian crossing opportunities.
- ❖ Terry Cole will discuss possible relocation of the Rickreall School with ODOT historic resources staff.
- ❖ PD will prepare diagrams showing local circulation improvements, such as right-turn only driveways.
- ❖ PD will prepare an elevation of the cross-section on Hwy 99W adjacent to the Rickreall School to illustrate what controls on approaches may be useful for future design teams.

Outreach Strategy

Jim Allen asked that the TAC representative make a briefing presentation at a community meeting in Rickreall on March 20, 2001. Terry Cole will make the presentation. Without presenting specific alternatives, he will describe the concepts that are under review and let the community know that a draft report will be available by no later than June 1, 2001.

Prior to the meeting, staff will meet with property owners in the area of the northwest quadrant of the Rickreall Road/Hwy 99W intersection.

Assignments:

- ❖ MWVCOG will meet with project manager to review list of stakeholders and determine schedule for community outreach.

ADDITIONAL ASSIGNMENTS

- ❖ All TAC Members—review and comment on TAC minutes and assignments

NEXT MEETING

The next meeting will be scheduled after the community outreach is conducted, probably the 3rd or 4th week in April.

The tentative agenda is as follows:

AGENDA #8 (remembering that we had an agenda 1A and 1B)

- Review Rickreall community analysis
- Review outreach results
- Review list of potential stakeholders for outreach
- Identify additional items needed for draft report