

## **APPENDIX G**

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### **Project 22 Report (W&H Pacific, June 2005)**

This appendix includes the report and appendixes prepared in June 2005 by consulting firm W&H Pacific for the County, titled “Project 22: Hwy 22/51 Interchange Implementation Strategy.”.



# PROJECT DELIVERY CONCEPTS AND STRATEGY REPORT

## Project 22: Hwy 22/51 Interchange Implementation Strategy

Willamina-Salem Highway (ODOT No. 30 / OR22)

Independence Highway (ODOT No. 193 / OR51)

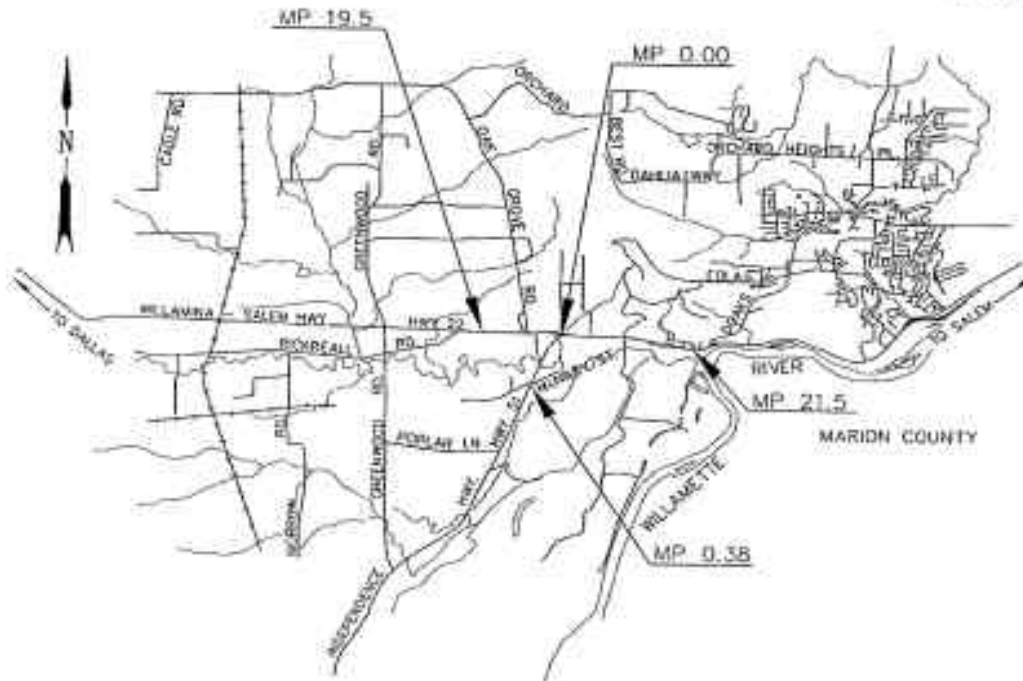
Polk County, Oregon

ODOT Region 2

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Prepared for  
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May 17, 2005  
Revised June 20, 2005

## EXECUTIVE SUMMARY

Polk County officials have made Project 22 their top transportation priority. The County Commission has taken an active role in supporting the project, and has worked with the Oregon Congressional Delegation, the Oregon Department of Transportation, and MWACT in an effort to secure funding.

The first major project in the expressway corridor was the Rickreall Interchange Project at the intersection of Highway 99 and Highway 22. This \$20 Million project began construction in 2005 and will be completed in 2006.

The next major project is the Independence Interchange where Highway 22 and Highway 51 intersect. The State and the County will shift their focus to delivering the project in phases. Financial and political support will be needed to successfully implement this project. ODOT and the MWVCOG are jointly developing an expressway management plan in which ODOT is establishing long range plans for the Highway 22 expressway corridor.

In the meantime, county officials feel that portions of the project can precede the interchange itself in development, as the County has secured some funding, a \$3 million earmark from Borders and Corridors program, and \$1 million from the Oregon Department of Transportation (ODOT) STIP. County has assigned W&H Pacific to develop a strategy to design and construct the expressway projects (frontage and backage roads) in the area of the interchange in smaller phases that, once constructed, can improve the operation and safety of the highway system.

This phased approach is based on an assumption that the environmental work for each phase is limited to the impacts of that work. However, if a larger, Independence Interchange all encompassing environmental document is required and includes the small project impacts, then the phases' design work must wait until completion of the overall environmental document.

This document concentrates on the local system portions of the Independence Interchange Project. This strategy provides coordination with the State's larger corridor project, but does not focus on performing work on the State system – only the minimum necessary for the County work to connect to the State system, and be compatible to long-term plans and requirements of the corridor expressway management plan.

With that said, the County work focuses on providing local frontage and backage roads and alternative access points to serve businesses and landowners in advance of the interchange project, and independent of the State system. Smaller project phases also set the stage for future interchange construction and closure of the single-point private accesses to the State system by providing the alternate access.

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## PURPOSE AND NEED

In late April, 2005 Polk County commissioned W&H Pacific to develop a conceptual report to advance the Highway 22/51 Interchange Project from concept through construction. The genesis of the report effort is driven by the ownership Polk County officials have for the Highway 22 and Highway 51 corridors, and the notion the County should provide local area leadership to support the Oregon Department of Transportation's (ODOT) efforts to design and construct the project. County officials have publicly declared the project their top transportation priority, and are actively working with Oregon's Congressional Delegation to assist ODOT in securing Federal funding for the project.

In this report, Project 22: Highway 22/51 Interchange Implementation Strategy, County officials requested implementation concepts be investigated that would identify a clear, logical approach to fund, develop the design, perform environmental work, and construct the project in phases. *The sequence of project phases examined in this report does not include projects on the expressway roadway, but rather focuses on the delivery of the frontage road system projects necessary to safely operate the interchange after construction.* The phases individually would operate and function to support the needs and requirements of this urban and rural Highway 22 Expressway (Oregon Transportation Commission approval in June 1996), and be entirely compatible with the ODOT Highway 22 Expressway Management Plan requirements. This management plan is currently being developed jointly by ODOT Region 2 and the Mid Willamette Valley Council of Governments (MWVCOG), and should be completed in early 2006.

Equally important, the project phases must be included in the Salem-Keizer Area Transportation Study's (SKATS) Financially Constrained Transportation Plan. In this plan, projects listed must have funding or have reasonable expectations that funding will be secured, such as a listing in ODOT's Surface Transportation Improvement Program (STIP), Development or Construction Sections.

According to Richard Schmid of the MWVCOG, adding phases of a large project incrementally to the financially constrained plan in a logical sequence makes sense, and enables projects to become reality over time, rather than delaying a very large expensive project until fully funded. Historically, ODOT has successfully developed many large projects in phases, particularly interstate projects and projects in urban areas. Once in the financially constrained plan, the phase must meet the purpose, function, and operational needs of its respective role in the whole project. This assures compatibility with the MWVCOG planning process, to which Polk County is fully committed.

This report provides two primary deliverables in addition to the above strategy of phaseable project development that include:

- 1) Identify frontage or backage roads as project phases (Options in this report) that can be added to the MWVCOG financially constrained plan and to the Development Section of the ODOT STIP, and to build a "shelf" project ready for construction.

2) Identify complete frontage or backage roads that can be added to the MWVCOG financially constrained plan and programmed in the 2008 STIP for construction. These options, when built, collectively support the safe operation of an interchange at the intersection of Highway 22 and Highway 51 *in advance of the interchange, or included in the interchange project, depending on available funding.*

## PROJECT BACKGROUND

Polk County is a small rural county that lies between the rapidly growing Willamette Valley and the Oregon Coast. Highway 22 West is the critical link that supports Polk County and connects the larger communities of Dallas, Salem, Monmouth, and Independence. Virtually every state highway within the County connects to or intersects this highway. Until recent years, the highway has adequately met the needs of the County and the State.

However, Polk County began experiencing a substantial increase in traffic volumes several years ago. From 1990 to 2000 the county population has grown at a rate of 26%, while the traffic rate has grown at an unprecedented 46%. Attractions along and at the end of the highway has generated a significant influx of high-speed traffic. The increase in traffic created a corresponding increase in the number of traffic accidents, injuries and fatalities (83% of the County's fatalities occur on this State highway alone).

Polk County and ODOT became aware of the dangerous situation and declared the highway a "Safety Corridor" in 1993. ODOT, in partnership with Polk County, has corrected many of the dangers on Highway 22 West through physical improvements and support programs, which were the result of ODOT Region 2's 1995 Interim Strategy for the Highway 22 Corridor. Despite these ambitious efforts, the problem areas between Dallas and Salem continue to worsen.

Highway 22 West is no longer being used for the purpose for which it was originally designed. In reality, it is now comprised of two different roads, both competing for the same space. The first is a local transportation corridor serving local business traffic; school buses and slow moving farm equipment frequently cross it. The second is a high-speed expressway serving the central Willamette Valley and carrying millions of people intent upon visiting the Central Oregon Coast and the many regional attractions along the route. This situation creates a deadly combination often resulting in accidents, injuries, and the loss of human life. (The fatality rate in this particular section of the highway is 2.5 times greater than the national traffic fatality averages for a facility of this type.)

Polk County has identified several steps which must be taken to improve the safety of Highway 22 West. These steps collectively are known as Polk County - Project 22. The goals:

- Provide a safe means for local and expressway traffic to share the road. Where necessary, separate the traffic to substantially reduce the number of accidents caused

by access, egress and speed differentials. (Frontage Roads and limited highway access)

- Divide traffic along the entire length of the road, thereby eliminating the incidence of head-on collisions. (Median Barrier separation of traffic)

Polk County has obtained a \$3M earmark from the Borders and Corridors program and another \$1M from the STIP. ODOT is using approximately \$250,000 of the funding to complete an Expressway Management Plan, the first of its kind for ODOT, from Greenwood Road to Doaks Ferry Road. This is a joint effort by the MWVCOG and ODOT and should be completed in early 2006.

ODOT's current plan, approved by the Oregon Transportation Commission (OTC) on May 11, 2000, calls for the design and construction of a Highway 22 expressway from Salem to The Kings Valley Highway, near Dallas. A divided expressway will safely accommodate large volumes of traffic at high speeds, and require minimization and/or elimination of local at-grade access to the highway. Both a high volume divided roadway and limited access meet the Polk County goals noted above.

ODOT has evaluated several alignment and interchange alternatives and has made one public hearing presentation in September 2004. This consultant met with and reviewed ODOT's design effort to date, and agrees the design is solid in concept, operation and safety provisions, and solves local access issues. The design is well suited for the site culture and topography restrictions, and has been endorsed by Polk County.

ODOT's plan calls for the construction of an interchange at the intersection of Highway 51 with Highway 22. Highway 51 is presently an uncontrolled intersection. A single turn lane exists on Highway 22 eastbound allowing traffic to turn south onto Highway 51. Highway 22 westbound also has a turn lane that requires traffic to cross on-coming traffic. No turn lanes exist to assist access to the north of Highway 22. This dangerous intersection requiring cars to cross high speed on-coming traffic. Polk County considers the intersection of Highway 51 and Highway 22 as a critical and essential safety project and is the County's top transportation priority.

To that end, the County wants to use the remaining \$3.75M of funds to get phaseable projects "shelf-ready" for construction as soon as possible. These "appendage" projects will support the interchange and the operation of the expressway subsequent to their construction. Polk County also wants to continue securement of funds for the construction of the interchange in 2008.



## STRATEGY

Polk County understands that to complete all the expressway work as one project will be expensive and not likely to occur in the near future. (ODOT is currently estimating the expressway work to be in excess of \$100M) The County realizes that to accomplish this work the project must be divided into smaller, more manageable pieces, or phases.

Since the construction of the interchange at the intersection of Highway 51 and Highway 22 is Polk County's highest transportation priority, the County would like to focus its efforts at this location.

Polk County has \$3.75M currently available for use. They would like to use that \$3.75M to "seed" the design and construction of the interchange by constructing useful portions (phases) of frontage roads as soon as possible that coordinate with ODOT's long-range plan. During this same time they want to secure approximately \$30-35M to be used for constructing the interchange and/or the remaining frontage roads in 2008. (Two members of the Oregon Congressional Delegation have publicly declared their support for the corridor improvements and interchange project).

Polk County supports the interchange design concept developed by ODOT for the intersection of Highway 51 and Highway 22. ODOT estimated the construction costs for the interchange to be \$19.5M. This value does not include right-of-way acquisition or associated environmental costs.

ODOT's estimate for the frontage/backage roads in the project area is \$80M. Polk County has asked this consultant to assess simple and practical frontage/backage road options that support the safe operation of a future interchange. Polk County has requested this consultant to identify and assess portions of those frontage/backage roads that could be constructed quickly.

Criteria considered when evaluating these options include:

- Section of Highway 22 from the Willamette River Bridges in Salem to the Kings Valley Highway, near Dallas, was approved by the OTC as an "Expressway" and will warrant a 6-lane configuration in the future.
- Per the Oregon Highway Plan (OHP), the functional classification for the Willamina-Salem Highway to MP 23.61 is "Rural Principal Arterial - Other" and from MP 23.61 to MP 26.14 it is Urban Principal Arterial - Other Freeway or Expressway.
- This report's evaluation limits along the Willamina-Salem Highway No. 30 are from MP 19.5 to MP 21.5, and along the Independence Highway No. 193 from MP 0 to MP 0.38, and 55<sup>th</sup> Ave from Highway 22 to Aster Road. This represents the area around the proposed interchange, and is shown on the vicinity map on this report's cover.
- The intersection of Highway 51 with Highway 22 is located at MP 20.37. This is 3.24 miles westerly of the urban designated functional classification for the roadway. There is little difference between the business district from MP 23.61 to MP 26.14 and that found from MP 20.37 to MP 23.61. The Salem UGB is located east of

Doaks Ferry Road which is near MP 22. A portion of the community of Eola is inside the MPO.

- There are several factors that suggest a significant change in character of the highway at the intersection of Highway 51 with Highway 22 at MP 20.37, rather than at MP 23.61. If this was the case, urban criteria would prevail east of the intersection and control the distance between access points.
- ODOT's findings indicate that a separated grade is required at the Highway 22/51 intersection to provide efficient operation and safety improvements.
- The expressway/interchange will require median barrier to be installed to separate eastbound and westbound traffic on Highway 22.
- Median barrier must be installed when the interchange is constructed.
- All accesses to Highway 22 will be closed and traffic diverted to frontage or backage roads when the interchange is constructed.

Until the interchange is constructed:

- Channel available funding for on "on-the-ground" construction vs. right-of-way or studies.
- Consider local roads (highway frontage and backage roads) that provide access to businesses and landowners, and connect to the existing local roads and state highways at acceptable locations, and within budget amounts on-hand.
- Maintain existing public access points along highway until projects are constructed. Completion of frontage/backage road projects will allow access at grade to be closed if properties are served by the frontage/backage roads.
- Consider right-in/right-out accesses for the interim.
- Avoid installing median barrier until interchange or frontage/backage roads are constructed.
- Construct permanent facilities that will not have to be revised when the interchange is built; no "throw-away".

## **RECOMMENDATIONS w/ estimated cost & schedule**

W&H Pacific has reviewed ODOT's long-range "Expressway" plan as presented in the September 2004 Public Hearing. W&H Pacific has also reviewed ODOT's interchange design for the intersection of Highway 22 and Highway 51.

W&H Pacific and Polk County agree with and support ODOT's interchange design as appropriate for the traffic patterns and volumes at this location.

Several frontage/backage road options, with their associated "total cost" estimate to construct, were evaluated. The options are described in more detail in Appendix A.

To meet the goals of Polk County, W&H Pacific recommends the following phased construction of the frontage and/or backage roads in the vicinity of the planned interchange:

<b>PHASE DESCRIPTION W/ ESTIMATED COST &amp; SCHEDULE</b>			
		Est'd Cost	Year
Phase 1	NE Frontage Road Improvements		
1.1	Conduct Expressway Planning	\$250,000	2006
1.2	Perform environmental work for Options NE-1b, NE-2a, NW-1a, NW-1b, NW-3a, NW-4, SW-1, and SW-2 that support ODOT's long-range frontage/backage road plan.	\$800,000	2007
1.3	Perform engineering work for Options NE-1b, NE-2a, NW-1a, NW-1b, NW-3a, NW-4, SW-1, and SW-2 that support ODOT's long-range frontage/backage road plan.	\$1,752,000	2007
1.4	Perform right-of-way work for Options NE-1b, NE-2a, NW-1a, NW-1b, NW-3a, NW-4, SW-1, and SW-2 that support ODOT's long-range frontage/backage road plan.	\$377,000	2008
1.5	Construct Options NE-1b, NE-2a. Close private accesses to Highway 22 and leave open public road accesses at 50 <sup>th</sup> Ave and 52 <sup>nd</sup> Ave.	\$1,485,000	2009
	Total	\$4,664,000.00	
Phase 2	NW & SW Frontage Road Improvements		
2.1	Perform environmental work for Options SE-1a and SE-1b that support ODOT's long-range frontage/backage road plan.	\$400,000	2007
2.2	Perform engineering work for Options SE-1a and SE-1b that support ODOT's long-range frontage/backage road plan.	\$1,322,000	2007
2.3	Perform right-of-way work for Options SE-1a and SE-1b that support ODOT's long-range frontage/backage road plan.	\$279,000	2008
2.4	Construct Options NW-1a, NW-1b, NW-3a, NW-4, SW-1, and SW-2. Close all accesses to Highway 22, including public accesses from Oak Grove Road and South Oak Grove Road.	\$2,895,000	2009
	Total	\$4,896,000.00	
Phase 3	SE Frontage Road Improvements		
3.1	Perform environmental work for the Interchange	\$400,000	2010
3.2	Perform engineering work for the Interchange	\$2,000,000	2011
3.3	Perform right-of-way work for the Interchange	\$100,000	2012
3.4	Construct Options SE-1a and SE-1b. Note: construction of the SE backage road options and the Interchange are planned for the same year, therefore, all existing accesses to Highway 22 will be closed in conjunction with the opening of the interchange. Also close access in NE quadrant at 52 <sup>nd</sup> Ave.	\$3,306,000	2012
	Total	\$5,806,000.00	
Phase 4	Interchange		
4.1	Construct the Interchange	\$17,500,000	2012
	Total	\$17,500,000.00	

## REFERENCES

Highway Design Manual, 2003 English – Expressway Design Standards  
OAR 734 Division 51 Rules, Access Control  
ODOT Bridge Log, 2004  
Oregon Highway Plan, 1999  
Polk County – Project 22 (<http://www.polkproject22.com>)  
Polk County Transportation Plan

## APPENDIX A – OPTIONS & ESTIMATES

Refer to Options Map at the end of this Appendix for location of all options described herein.

### SUMMARY

Option	Construction	Right-of-Way	Environmental	Engineering	Total
NE-1a	\$100,000	\$0	\$0	\$40,000	\$140,000.00
NE-1b	\$550,000	\$85,000	\$100,000	\$220,000	\$955,000.00
NE-2a	\$935,000	\$201,000	\$200,000	\$374,000	\$1,710,000.00
NE-2b	\$835,000	\$105,000	\$200,000	\$334,000	\$1,474,000.00
NE-3	\$1,500,000	\$1,266,000	\$300,000	\$600,000	\$3,666,000.00
SE-1a	\$1,600,000	\$228,000	\$100,000	\$640,000	\$2,568,000.00
SE-1b	\$1,706,000	\$51,000	\$300,000	\$682,000	\$2,739,000.00
SE-1c	\$2,800,000	\$51,000	\$300,000	\$1,120,000	\$4,271,000.00
SE-2a	\$1,145,000	\$375,000	\$200,000	\$458,000	\$2,178,000.00
SE-2b	\$1,485,000	\$51,000	\$300,000	\$594,000	\$2,430,000.00
SW-1	\$100,000	\$0	\$0	\$40,000	\$140,000.00
SW-2	\$725,000	\$16,000	\$100,000	\$290,000	\$1,131,000.00
NW-1a	\$100,000	\$0	\$0	\$40,000	\$140,000.00
NW-1b	\$80,000	\$0	\$0	\$32,000	\$112,000.00
NW-2	\$1,200,000	\$25,000	\$200,000	\$480,000	\$1,905,000.00
NW-3a	\$800,000	\$4,000	\$200,000	\$320,000	\$1,324,000.00
NW-3b	\$1,250,000	\$13,000	\$200,000	\$500,000	\$1,963,000.00
NW-4	\$1,090,000	\$71,000	\$200,000	\$436,000	\$1,797,000.00
NW-5	\$2,100,000	\$45,000	\$200,000	\$840,000	\$3,185,000.00

### NORTHEAST QUADRANT

#### *Option NE-1a: 52<sup>nd</sup>/53<sup>rd</sup>/Aster Rd w/ Overlay*

This option maintains the existing 52<sup>nd</sup>/53<sup>rd</sup>/Aster Road system, including the access of 52<sup>nd</sup> Ave to Highway 22. (The access at 52<sup>nd</sup> Ave will eventually be closed with the construction of the interchange at the intersection of Highway 51/55<sup>th</sup> Ave and Highway 22.) An AC overlay of the existing road surface is recommended to be constructed to provide a smooth riding surface. Existing right-of-way is 40' wide on 52<sup>nd</sup> and 53<sup>rd</sup>, and 60' wide on Aster. Additional right of way along 52<sup>nd</sup> and 53<sup>rd</sup> will need to be purchased to provide for 60' of width. This option is the same as one of ODOT's options shown in their long-range plan.

Since it is existing alignment and no improvements outside the existing edges of pavement are proposed it is anticipated that this option will not require any additional environmental compliance efforts.

Advantages:

- Uses the existing road system.
- Maintains the existing access of 52<sup>nd</sup> Ave to Highway 22 to avoid more congestion at 55<sup>th</sup> Ave. To be closed when interchange is constructed.

Disadvantages:

- Connection to 55<sup>th</sup> Ave, and ultimately Highway 22, is a longer route than typical interchange frontage/backage road.
- Narrow road; portions gravel.

Estimate:		
Construction	\$100,000	overlay existing surface
Right-of-Way	\$0	
Environmental	\$0	
Engineering	\$40,000	40% of Construction
Total	\$140,000.00	

Option NE-1b: 52<sup>nd</sup>/53<sup>rd</sup>/Aster Rd w/ Widening to 52<sup>nd</sup> Ave & 53<sup>rd</sup> Ave

This option is the existing 52<sup>nd</sup>/53<sup>rd</sup>/Aster Road system with the following improvements provided: widen 52<sup>nd</sup> Ave and 53<sup>rd</sup> Ave to 2-12' lanes w/ 4' shoulders, and overlay 52<sup>nd</sup> Ave, 53<sup>rd</sup> Ave, and Aster Road. Access from 52<sup>nd</sup> Ave to Highway 22 will be maintained. (This access will eventually be closed with the construction of the interchange at the intersection of Highway 51/55<sup>th</sup> Ave and Highway 22.) Existing right-of-way is 40' wide on 52<sup>nd</sup> and 53<sup>rd</sup>, and 60' wide on Aster. Additional right of way along 52<sup>nd</sup> and 53<sup>rd</sup> will need to be purchased to provide for 60' of width.

52<sup>nd</sup> Ave. crosses McNary Creek. There are possible stream and wetland impacts. An environmental assessment will likely be required for the existing roadway ditches, seeps, and tributary to McNary Creek along approximately 100 foot corridor on both sides of road.

Advantages:

- Uses the existing road system.
- Improves the existing road system.
- Maintains the existing access of 52<sup>nd</sup> Ave to Highway 22 to avoid more congestion at 55<sup>th</sup> Ave. To be closed when interchange is constructed.

Disadvantages:

- Connection to 55<sup>th</sup> Ave, and ultimately Highway 22, is a longer route than typical interchange frontage/backage road.



Estimate:		
Construction	\$550,000	Widen roadway, close access, overlay existing surface
Right-of-Way	\$85,000	59,100 sf or 1.36 ac – AR-5 zoned
Environmental	\$100,000	
Engineering	\$220,000	40% of Construction
Total	\$955,000.00	

Option NE-2a: 52<sup>nd</sup> Ave to 50<sup>th</sup> Ave backage road

This option will maintain the existing access at 50<sup>th</sup> Ave and construct a backage road from 50<sup>th</sup> Ave to 52<sup>nd</sup> Ave. The backage road would run parallel to and along the backside of several properties abutting Highway 22. All other accesses between 50<sup>th</sup> Ave and 52<sup>nd</sup> Ave will be closed and reconnected to the backage road. The backage road will require the purchase of new right-of-way 60' wide. This option would build a portion of the backage road option shown in ODOT's long-range plan.

This option will require an environmental assessment of roadside and other ditches, and area approximately 100 feet on both sides of corridor.

Advantages:

- Closes private accesses to Highway 22.
- Closes accesses to Highway 22 between 50<sup>th</sup> Ave and 52<sup>nd</sup> Ave.
- Will allow 50<sup>th</sup> Ave to remain open while still providing local connectivity of the county road system.

Disadvantages:

- Will use the driveway into the steel building business; may create proximity impacts to business.
- Connecting businesses along Highway 22 to backage road may require steep grades.

Estimate:		
Construction	\$935,000	New backage road
Right-of-Way	\$201,000	1040': 62,400 sf or 1.43 ac – EO-I zoned 880': 52,800 sf or 1.21 ac – AR-5 zoned
Environmental	\$200,000	
Engineering	\$374,000	40% of Construction
Total	\$1,710,000.00	

Option NE-2b: 52<sup>nd</sup> Ave to 50<sup>th</sup> Ave frontage road

This option constructs a frontage road from 50<sup>th</sup> Ave to 52<sup>nd</sup> Ave. It will close all accesses between 50<sup>th</sup> Ave and 52<sup>nd</sup> Ave, including the closure of 50<sup>th</sup> Ave and 52<sup>nd</sup> Ave to Highway 22. The frontage road will use portions of existing ODOT right-of-way, however, it will still require the purchase of 30'+ of new right-of-way. Right-of-way will

be 60' wide. This option would build a portion of the frontage road shown in ODOT's long-range plan.

This option will require an environmental assessment of roadside and other ditches, and area approximately 100 feet on both sides of corridor.

**Advantages:**

- Closes private accesses to Highway 22.
- Abuts the existing Highway 22, having the least impact on existing businesses.

**Disadvantages:**

- Will not support Highway 22 future 6-lane configuration and pedestrian facilities.
- Requires closure of 50th Ave to Highway 22.

Estimate:		
Construction	\$835,000	New frontage road
Right-of-Way	\$105,000	1040': 62,400 sf or 1.43 ac – EO-1 zoned 880': 52,800 sf or 1.21 ac – AR-5 zoned
Environmental	\$200,000	
Engineering	\$334,000	40% of Construction
Total	\$1,474,000.00	

***Option NE-3: 52<sup>nd</sup> Ave to 55<sup>th</sup> Ave New Alignment***

This option constructs a new alignment from 52<sup>nd</sup> Ave to 55<sup>th</sup> Ave, bypassing the existing 52<sup>nd</sup>/53<sup>rd</sup>/Aster Road system. This alignment will require the purchase of new right-of-way 60 wide. This option would build a portion of the backage road shown in ODOT's long-range plan.

This option will require an environmental assessment at a 200 foot width on both sides of new the alignment.

**Advantages:**

- Creates closer connection to the Highway 51 interchange by approximately 500'.

**Disadvantages:**

- Requires new right-of-way purchases; dividing properties.
- Crosses through environmentally sensitive area.
- All new construction in close proximity to the existing 52<sup>nd</sup>/53<sup>rd</sup>/Aster Road system.
- Connection of existing Aster Road is only approximately 500' from proposed connection of this new alignment.
- A connection to 53<sup>rd</sup> Ave from the new alignment may be required.



Estimate:		
Construction	\$1,500,000	New alignment
Right-of-Way	\$1,266,000	2450': 177,000 sf or 4.06 ac – AR-5 zoned
Environmental	\$300,000	
Engineering	\$600,000	40% of Construction
Total	\$3,666,000.00	

### *SOUTHEAST QUADRANT*

#### *Option SE-1a: RV Park to Chevron Station (south alignment)*

This option will maintain the existing access to the Eola Bend RV Park and construct a backage road from the RV Park's access point southwesterly along the old railroad alignment to a point south of the Chevron Station. At this point the backage road will turn north and access the Chevron Station. All other accesses to Highway 22 from the RV Park entrance to the Chevron Station will be closed. This option could be continued to Highway 51 using either Option SE-1b or SE-1c. This option's alignment is located in or near the old railroad alignment just north of Rickreall Creek. Providing two access points on this backage road is favorable to allow free circulation of traffic in and around this quadrant of the interchange and not overload the RV park access. Only a portion of the railroad right-of-way is still owned by the railroad. Other current owners include the RV park and the pipe company. The backage road will require the purchase of right-of-way 60' wide. This option would build a portion of the backage road shown in ODOT's long-range plan.

This option will require an environmental assessment be conducted along the backage road. This alignment follows Rickreall Creek. The environmental assessment will likely include a wetland delineation to determine jurisdictional boundaries, and impacts to wetlands, riparian areas, ditches, soil conditions and mitigation site planning. A DSL/Corps permit will likely be required and possibly ESA consultation depending upon listings in Rickreall Creek (and possibly Hayden Slough).

#### Advantages:

- Closes private accesses to Highway 22.
- Alignment runs in or near the footprint of the old railroad, and does not split the properties that currently abut Highway 22.
- Maintains larger lot sizes; possibly more favorable for future businesses that may locate here in the future.

#### Disadvantages:

- Backage road diverges away from highway and existing businesses.

Estimate:		
Construction	\$1,600,000	Closes accesses; New backage road
Right-of-Way	\$228,000	3880': 232,800 sf or 5.34 ac – FF zoned 1820': 109,200 sf or 2.51 ac – EO-IC zoned
Environmental	\$100,000	
Engineering	\$640,000	40% of Construction
Total	\$2,568,000.00	

Option SE-1b: Chevron Station to Hwy 51 (south connection) (south alignment)

This option will continue Option SE-1a from a point south of the Chevron Station to a new access point opposite the intersection of South Oak Grove Road on Highway 51. Providing two access points on this backage road is favorable to allow free circulation of traffic in and around this quadrant of the interchange and not overload the RV Park access. This alignment will require the purchase of new right-of-way 60' wide. This design option was not considered in ODOT's long-range plan.

This option will require an environmental assessment be conducted along the backage road. This alignment follows Rickreall Creek and crosses McNary Creek near Highway 51. The environmental assessment will likely include a wetland delineation to determine jurisdictional boundaries, and impacts to wetlands, riparian areas, ditches, soil conditions and mitigation site planning. A DSL/Corps permit will likely be required and possibly ESA consultation depending upon listings in Rickreall and McNary Creeks (and possibly Hayden Slough).

Advantages:

- Does not cross Rickreall Creek.
- Intersects Highway 51 opposite current intersection of S. Oak Grove Road with Highway 51.

Disadvantages:

- Crosses McNary Creek; will require culvert or bridge.
- Crosses low-land area requiring large embankment fill.

Estimate:		
Construction	\$1,706,000	New alignment
Right-of-Way	\$51,000	2880': 172,800 sf or 3.97 ac – FF zoned
Environmental	\$300,000	
Engineering	\$682,000	40% of Construction
Total	\$2,739,000.00	

Option SE-1c: Chevron Station to Hwy 51 (south connection) (south alignment)

This option will continue Option SE-1a from a point south of the Chevron Station to McNary Street, crossing Rickreall Creek. The existing intersection of McNary Street and

Highway 51 will be re-constructed to improve the intersection geometry. Providing two access points on this backage road is favorable to allow free circulation of traffic in and around this quadrant of the interchange and not overload the RV Park access. This alignment will require the purchase of new right-of-way 60' wide. This option would build a portion of the backage road shown in ODOT's long-range plan.

This option will require an environmental assessment be conducted along the backage road. This alignment follows Rickreall Creek and crosses Rickreall Creek near McNary Street. The environmental assessment will likely include a wetland delineation to determine jurisdictional boundaries, and impacts to wetlands, riparian areas, ditches, soil conditions and mitigation site planning. A DSL/Corps permit will likely be required and possibly ESA consultation depending upon listings in Rickreall and McNary Creeks (and possibly Hayden Slough).

**Advantages:**

- Avoids constructing roadway embankment in low-land.
- Uses existing McNary Street to connect to Highway 51.

**Disadvantages:**

- Crosses McNary and Rickreall Creeks.

Estimate:		
Construction	\$2,800,000	New alignment
Right-of-Way	\$51,000	2880': 172,800 sf or 3.97 ac – FF zoned
Environmental	\$300,000	
Engineering	\$1,120,000	40% of Construction
Total	\$4,271,000.00	

**Option SE-2a: RV Park to Chevron Station (north alignment)**

This option will maintain the existing access to the Eola Bend RV Park and construct a backage road from this access point to the west to the back of the existing Chevron Station. All other accesses to Highway 22 from the RV Park entrance to the Chevron Station will be closed. A cul-de-sac could be constructed at this point, or it can be continued to Highway 51 using Option SE-2b. This option's alignment is located just to the back of the businesses along this portion of the highway. Providing two access points on this backage road is favorable to allow free circulation of traffic in and around this quadrant of the interchange and not overload the RV Park access. However, if due to funding and schedule shortages, stopping the backage road at the Chevron Station would still provide local access and alleviate access problems along Highway 22. The backage road will require the purchase of new right-of-way 60' wide. This design option was not considered in ODOT's long-range plan.

This option will require an environmental assessment be conducted along the backage road. This alignment follows Highway 22. The environmental assessment will likely include a wetland delineation to determine jurisdictional boundaries, and impacts to

wetlands, riparian areas, ditches, soil conditions and mitigation site planning. A DSL/Corps permit will likely be required and possibly ESA consultation depending upon listings in Rickreall (and possibly Hayden Slough).

**Advantages:**

- Closes private accesses to Highway 22.
- Backage road is located parallel to Highway 22, and just behind existing businesses.

**Disadvantages:**

- Divides existing properties.
- Creates small parcels along highway.
- Parcels become unusable when Highway 22 expands to 6 lanes.

Estimate:		
Construction	\$1,145,000	Closes accesses; New backage road
Right-of-Way	\$375,000	1800': 108,000 sf or 2.48 ac – EO-IC zoned 1320': 79,200 sf or 1.82 ac – EO-CO zoned
Environmental	\$200,000	
Engineering	\$458,000	40% of Construction
Total	\$2,178,000.00	

**Option SE-2b: Chevron Station to Hwy 51 (south connection) (north alignment)**

This option will continue Option SE-2a from the back of the Chevron Station to a new access point opposite the intersection of South Oak Grove Road on Highway 51. Providing two access points on this backage road is favorable to allow free circulation of traffic in and around this quadrant of the interchange and not overload the RV Park access. This alignment will require the purchase of new right-of-way 60' wide. This design option was not considered in ODOT's long-range plan.

This option will require an environmental assessment be conducted along the backage road. This alignment crosses McNary Creek near Highway 51. The environmental assessment will likely include a wetland delineation to determine jurisdictional boundaries, and impacts to wetlands, riparian areas, ditches, soil conditions and mitigation site planning. A DSL/Corps permit will likely be required and possibly ESA consultation depending upon listings in Rickreall and McNary Creeks (and possibly Hayden Slough).

**Advantages:**

- Does not cross Rickreall Creek.
- Intersects Highway 51 opposite current intersection of S. Oak Grove Road with Highway 51.

**Disadvantages:**

- Crosses McNary Creek; will require culvert or bridge.
- Crosses low-land area requiring large embankment fill.

Estimate:		
Construction	\$1,485,000	New alignment
Right-of-Way	\$51,000	2880': 172,800 sf or 3.97 ac – FF zoned
Environmental	\$300,000	
Engineering	\$594,000	40% of Construction
Total	\$2,430,000.00	

### *SOUTHWEST QUADRANT*

#### *Option SW-1: South Oak Grove Rd*

This option closes the access of South Oak Grove Road to Highway 22, and maintains the existing road for local use to Highway 51. An AC overlay of the existing road surface will be constructed to provide a smooth riding surface. Existing right-of-way is 60' wide, and will not require any additional right-of-way for use with the interchange design. This option is the same as ODOT's long-range plan.

Since it is existing alignment and no improvements outside the existing edges of pavement are proposed it is anticipated that this option will not require any additional environmental compliance costs.

#### Advantages:

- Uses existing local road as access to the southwest quadrant.

#### Disadvantages:

- (no major disadvantages)

Estimate:		
Construction	\$100,000	Close access; overlay existing surface
Right-of-Way	\$0	
Environmental	\$0	
Engineering	\$40,000	40% of Construction
Total	\$140,000.00	

#### *Option SW-2: South Oak Grove frontage road*

This option constructs a new frontage road approximately 2900' in length along the south side of Highway 22. This frontage road will sever all the current driveways with access onto Highway 22 and connect them to South Oak Grove Road. This option will use portions of existing ODOT right-of-way, however, it will require the purchase of some new right-of-way. This option would build a portion of the frontage road shown in ODOT's long-range plan.

This option will require an environmental assessment for wetlands, ponds, and streams along the existing roadway, 200 feet width on each side and adjacent property.

Advantages:

- Closes private accesses to Highway 22.

Disadvantages:

- (no major disadvantages)

Estimate:		
Construction	\$725,000	New frontage road
Right-of-Way	\$16,000	20,325 sf or 0.47 ac – AR-5 zoned 7,650 sf or 0.18 ac – FF zoned
Environmental	\$100,000	
Engineering	\$290,000	40% of Construction
Total	\$1,131,000.00	

*NORTHWEST QUADRANT*

Option NW-1a: Oak Grove Rd. (Brunk Road)

This option closes the access of Oak Grove Road to Highway 22, and maintains the use of approximately 2000' of the existing road to the intersection of Option NW-2 for local access. This option will also close the access from Highway 22 to the Brunk House and construct a new access from Oak Grove Road. (Brunk House is a historic farm museum.) Existing right-of-way is 60' wide, and will not require any additional right of way for use with the interchange design. This option is the same as ODOT's long-range plan.

Since it is existing alignment and no improvements outside the existing edges of pavement are proposed it is anticipated that this option will not require any additional environmental compliance costs.

Advantages:

- Uses existing local road as access to the Brunk House, the cemetery, and possibly the golf course.
- Closes two accesses to Highway 22.

Disadvantages:

- (no major disadvantages)

Estimate:		
Construction	\$100,000	Close accesses
Right-of-Way	\$0	
Environmental	\$0	
Engineering	\$40,000	40% of Construction
Total	\$140,000.00	



Option NW-1b: Oak Grove Rd. (Brunk Road)

This option preserves and maintains the use of an additional 2000' +/- of the existing road directly to the north of Option NW-1a and to the intersection of Option NW-4. Existing right-of-way is 60' wide, and will not require any additional right of way for use with the interchange design. This option is the same as ODOT's long-range plan.

Since it is existing alignment and no improvements outside the existing edges of pavement are proposed it is anticipated that this option will not require any additional environmental compliance costs.

Advantages:

- Uses the existing road for local access.

Disadvantages:

- (no major disadvantages)

Estimate:		
Construction	\$80,000	
Right-of-Way	\$0	
Environmental	\$0	
Engineering	\$32,000	40% of Construction
Total	\$112,000.00	

Option NW-2: Oak Grove to 55<sup>th</sup> Ave (south alignment)

This option constructs a new backage road approximately 2700' in length from Oak Grove Road to 55<sup>th</sup> Ave. The backage road will require the purchase of new right-of-way 60' wide. This option would build the backage road shown in ODOT's long-range plan.

This option will require an environmental field check assessment for wetlands and other waters. DSL/CORPS permit likely for wetland impacts. No creek crossing.

Advantages:

- Alignment is located between the filbert orchard and the vineyard; minimizing impacts to both land parcels and businesses.
- Connects to 55<sup>th</sup> Ave just beyond the access limits of the interchange.

Disadvantages:

- Alignment contains reversing curves.
- Location does not align well with other proposed backage roads.

Estimate:		
Construction	\$1,200,000	New backage road
Right-of-Way	\$25,000	162,000 sf or 3.72 ac – EFU zoned
Environmental	\$200,000	
Engineering	\$480,000	40% of Construction
Total	\$1,905,000.00	

Option NW-3a: Oak Grove Golf Course frontage road

This option constructs a new frontage road along the north side of, and at the same grade as, Highway 22 approximately 5350' in length from Oak Grove Road to the golf course. It will use portions of the existing ODOT right-of-way; however, it will require the purchase of some new right-of-way. The right-of-way to be 60' wide. This design option was not considered in ODOT's long-range plan.

This option will require an environmental assessment of cemetery property, pasture and ditches along the proposed roadway corridor, 100 feet width on each side of alignment. This option crosses McNary Creek at intersection of 55<sup>th</sup>.

Advantages:

- Abuts the highway alignment and requires the least amount of right-of-way for construction of a new access to the golf course.
- If necessary, the frontage road can be relocated when the interchange is constructed and the frontage road roadbed used for the Highway 22 6-lane configuration.

Disadvantages:

- Abuts the highway alignment and will be in close proximity to the new interchange ramp.
- May not support Highway 22 future 6-lane configuration without being relocated.

Estimate:		
Construction	\$800,000	New frontage road
Right-of-Way	\$4,000	22,350 sf or 0.51 ac – PC zoned
Environmental	\$200,000	
Engineering	\$320,000	40% of Construction
Total	\$1,324,000.00	

Option NW-3b: Oak Grove Golf Course backage road (south alignment)

This option constructs a backage road from Oak Grove Road to the golf course approximately 2030' in length on the property adjacent to and along the backside of the cemetery. New right-of-way 60' in width will be required to be purchased. This option is the same as ODOT's long-term plan.



This option will require an environmental assessment, 100 feet width, both sides of existing roadway for impacts to cemetery property, ditches and pond area.

Advantages:

- Located away from the highway and the future ramp alignment.

Disadvantages:

- Requires relocation of the golf course entrance.
- Requires right-of-way purchase from either the undeveloped cemetery grounds (as shown) or from the golf course itself (not shown).

Estimate:		
Construction	\$1,250,000	New backage road
Right-of-Way	\$13,000	121,800 sf or 2.80 ac – EFU zoned
Environmental	\$200,000	
Engineering	\$500,000	40% of Construction
Total	\$1,963,000.00	

Option NW-4: Oak Grove to 55<sup>th</sup> Ave (north alignment)

This option constructs a new backage road approximately 2400' in length from Oak Grove Road to 55<sup>th</sup> Ave, intersecting 55<sup>th</sup> Ave at Aster Road. The backage road will require the purchase of new right-of-way 60' wide. This design option was not considered in ODOT's long-range plan.

This option will require an environmental field check assessment for wetlands and other waters. DSL/CORPS permit likely for wetland impacts. No creek crossing.

Advantages:

- Location provides more direct route to 55<sup>th</sup> Ave for travelers out Oak Grove Road.
- Connects to 55<sup>th</sup> Ave at existing intersection of Aster Road and 55<sup>th</sup> Ave.

Disadvantages:

- Increased length of improvement to existing Oak Grove Road.
- Significant impact to vineyard.
- Divides land parcel.

Estimate:		
Construction	\$1,090,000	New alignment
Right-of-Way	\$71,000	144,000 sf or 3.30 ac – EFU zoned
Environmental	\$200,000	
Engineering	\$436,000	40% of Construction
Total	\$1,797,000.00	

Option NW-5: Oak Grove Rd. Golf Course backage road (north alignment)

This option constructs a backage road from Oak Grove Road to the backside of the golf course property approximately 1700' in length. New right-of-way 60' in width will be required to be purchased. This design option was not considered in ODOT's long-term plan.

This option will require an environmental assessment, 100 feet width, both sides of existing roadway for impacts to cemetery property, ditches and pond area.

Advantages:

- Provides access to back of golf course, rather than in the middle.
- Intersects Oak Grove Road at same point as Option NW-4.
- Does not impact cemetery.

Disadvantages:

- Accesses golf course at back of parcel; opposite end as existing club house.

Estimate:		
Construction	\$2,100,000	New alignment
Right-of-Way	\$45,000	5000': 300,000 sf or 6.89 ac – EFU zoned
Environmental	\$200,000	
Engineering	\$840,000	40% of Construction
Total	\$3,185,000.00	

## APPENDIX B – DESIGN STANDARDS

Per ODOT Highway Design Manual, functional classification of the:

- Willamina-Salem Hwy No. 30 is:

MP 0.00 to MP 23.61	02-Rural Principal Arterial – Other
MP 23.61 to MP 26.14	12-Urban Principal Arterial – Other Fwy or Exp
- Independence Hwy No. 193 is:	
MP 0.00 to MP 4.88	06-Rural Minor Arterial
MP 4.88 to MP 6.34	14-Urban Principal Arterial – Other

Per ODOT Highway Design Manual, access spacing standards per Oregon Highway Plan, Appendix C:

Interchange Spacing:		
Rural	3 miles	
Urban	1.9 miles	
Statewide Highways:		
Rural Expressway	5280'	Posted Speed $\geq$ 55 mph
Urban Expressway	2640'	Posted Speed $\geq$ 55 mph
Non-Freeway Interchange w/ Two-Lane Crossroads		
Rural Expressway	1 mile	Measured along Mainline
	1320'	Measured along Crossroad
Urban Expressway	2640'	Measured along Mainline
	1320'	Measured along Crossroad

Design Speed	60-70 mph
Travel Lanes	12'
Right Turn Lane	12' + shoulder
Left Turn Lane	24' (4' shy – 4' separator – 12' lane – 4' shy)
Right Side Shoulder	8'
Median:	
Striped	10'
Raised Curb	20' travel to travel lane
Concrete Barrier	10' for 4 lanes 18' for 6 lanes
Max Superelevation	8.5% to 9.5%
Max Degree of Curve	3°15' to 15°00'
Max Grade	5%
Curbside Sidewalk	No
Separated Sidewalk	6'
On-Street Parking	No
Vertical Clearance	17'

Typical Sections:	
State Highways:	
Hwy 22 Expressway (ODOT)	
8' shld   12' ln   12' ln   12' ln   18' med w/ conc barrier   12' ln   12' ln   12' ln   8' shld	
Hwy 51 (ODOT)	
10' shld   12' lane   12' lane   10' shld	
County Frontage Roads:	
Urban Major Collector (68' row; min pavement width = 34')	
min 5' shld   12' lane   12' lane   min 5' shld	
Rural Major Collector (60' row; min pavement width = 24')	
4'-6' gravel shld   min 12' lane   min 12' lane   4'-6' gravel shld	
Frontage Road along Highway 22:	(Total Roadway Width = 148')
Curb   8' shld   12' ln   12' ln   12' ln   18' md   12' ln   12' ln   12' ln   8' shld   2' E   2' conc barrier   8' bike/shld   12' ln   12' ln   6' shld   curb/barrier	

## APPENDIX C - ACRONYMS

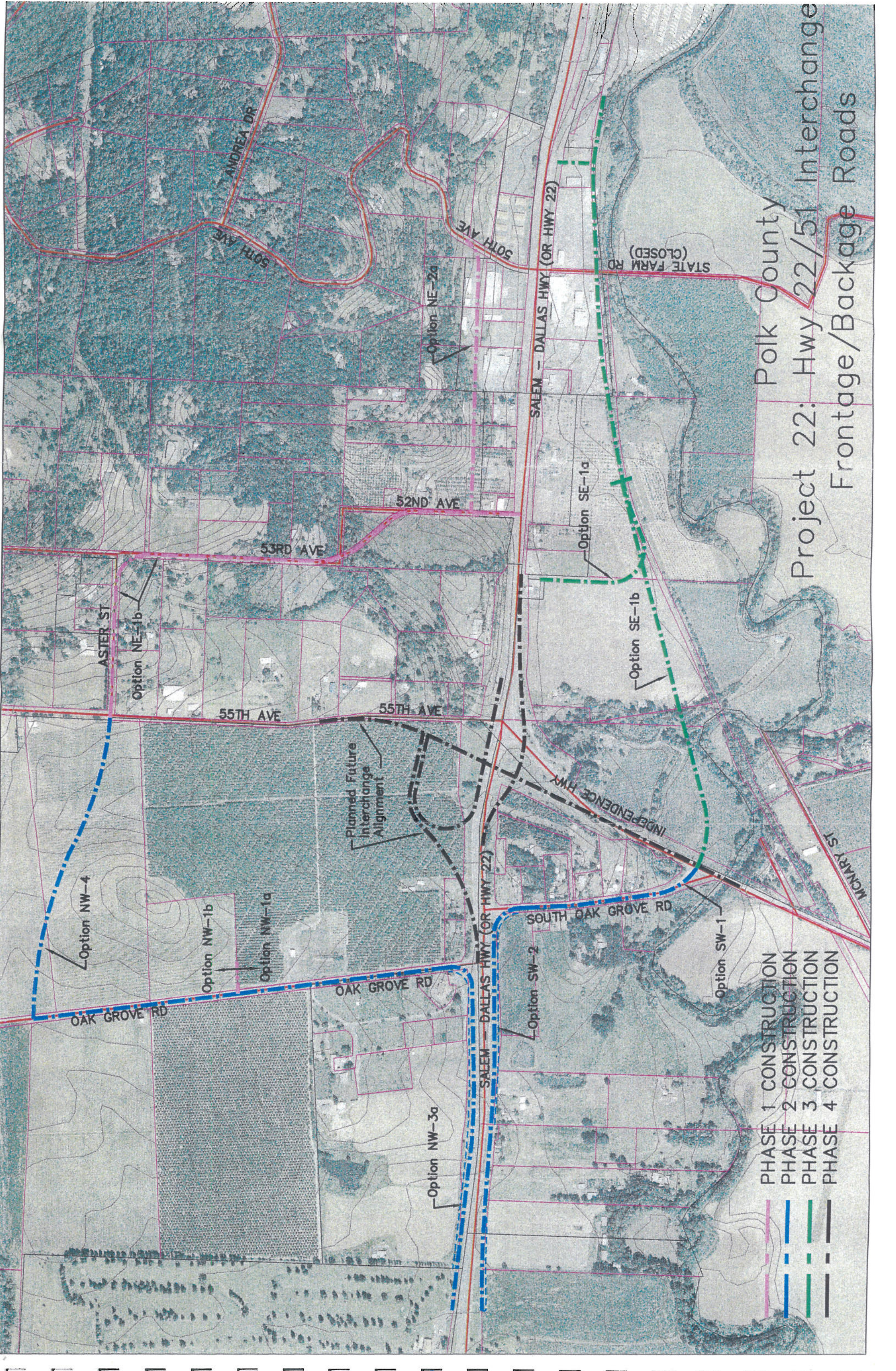
ac	Acres
AC	Asphaltic Concrete
Ave	Avenue
COE	U.S. Army Corps of Engineers
conc	Concrete
Corps	U.S. Army Corps of Engineers
DSL	Oregon Division of State Lands
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
Hwy	Highway
In	Lane
M	Million
med	Median
min	Minimum
MP	Mile Post or Mile Point
mph	Miles Per Hour
MPO	Metropolitan Planning Organization
MWACT	Mid-Willamette Valley Area Commission Transportation
MWVCOG	Mid-Willamette Valley Council of Governments
NE	Northeast
NEPA	National Environmental Policy Act
NW	Northwest
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
ORS	Oregon Revised Statutes
OTC	Oregon Transportation Commission
OTIA	Oregon Transportation Investment Act
Rd	Road
row	Right-of-Way
SE	Southeast
sf	Square Feet
shld	Shoulder
SHPO	State Historic Preservation Office
SKATS	Salem-Keizer Area Transportation Study
STIP	Statewide Transportation Improvement Program
SW	Southwest
TIP	Transportation Improvement Plan
UGB	Urban Growth Boundary
US	United States



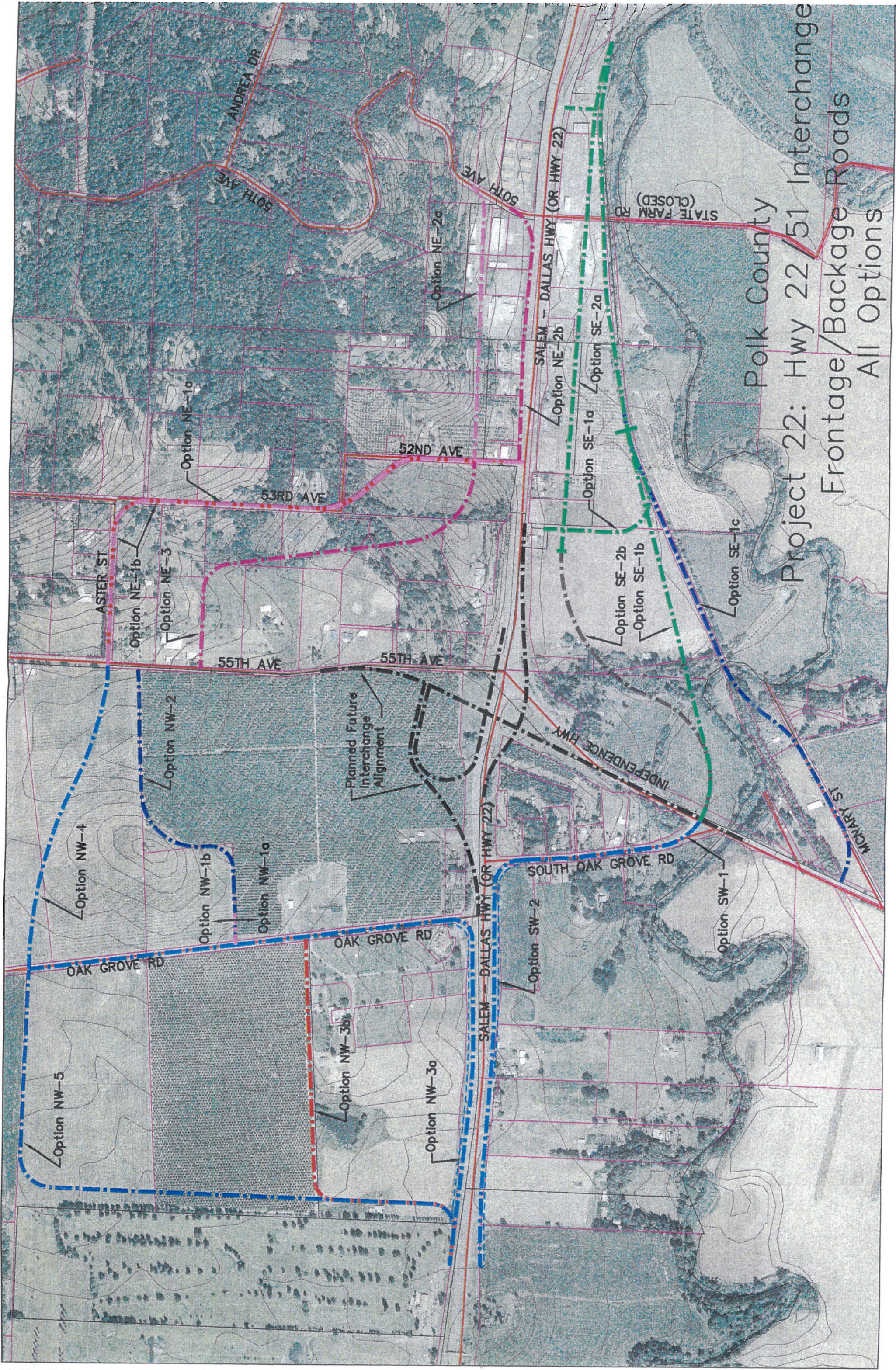


Polk County  
Project 22: Hwy 22/51 Interchange  
Frontage/Backage Roads

- PHASE 1 CONSTRUCTION
- PHASE 2 CONSTRUCTION
- PHASE 3 CONSTRUCTION
- PHASE 4 CONSTRUCTION







Polk County  
Project 22: Hwy 22/51 Interchange  
Frontage/Backage Roads  
All Options