TV HIGHWAY CORRIDOR PLAN

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TV Highway Corridor Plan

June 2013

Prepared by:

DAVID EVANS AND ASSOCIATES INC.

Prepared for:

Oregon Department of Transportation

TV Highway Corridor Plan

An adaptive management strategy to address existing and anticipated future multimodal transportation needs in the Tualatin-Valley Highway (TV Hwy) Corridor Area

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by the federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), local government, and the State of Oregon Funds.

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INTRODUCTION

To make travel within and through the area more safe and convenient for people who use different transportation modes, the TV Highway Corridor Plan (TVCP) identifies critical near term (within the next 15 years) transportation improvement actions and application of an adaptive and shared (through partnerships between stakeholder jurisdictions) corridor management approach to prioritize and develop future transportation solutions for the TV Highway Corridor. The TVCP Project Area is defined by SE 10th Avenue/Maple Street (Hillsboro Regional Center) on the west, Baseline Road/Jenkins Road on the north, Cedar Hills Boulevard (Beaverton Regional Center) on the east, and Farmington Road, Oak Street, Davis Street, and Allen Boulevard on the south.

The TVCP is a focused and intensive examination of the transportation system within the Project Area to identify needs and recommend improvements for all modes of transportation for the key purposes of:

- Improving mobility for multi-modal travel;
- Enhancing safety, connectivity and accessibility within the Corridor for all modes of travel;
- Strengthening and supporting economic vitality;
- Improving the visual appearance of the Highway;
- Improving air and water quality within the Corridor; and
- Reducing vehicle miles traveled within the corridor by expanding transportation choices (e.g., improving options for auto, public transit, freight, bike and pedestrian mobility).

An overarching goal of the TVCP is to reflect community needs and desires for the corridor to evolve into a thriving, welcoming place that connects this vibrant growing community now and for future generations. A joint effort with ODOT, Metro, the City of Hillsboro, and in partnership with the City of Beaverton and Washington County, the TVCP seeks to help advance the aspirations, goals and objectives of previously-adopted as well as concurrent public policy and community planning efforts. These include the Beaverton Civic Plan, the Hillsboro Comprehensive Plan and Transportation System Plan, the Aloha-Reedville planning effort, Washington County's Comprehensive Plan and Transportation System Plans, Washington County's Community Plans, as well as other planning efforts.[1]

The Project Management Team (PMT), composed of Oregon Department of Transportation (ODOT), City of Hillsboro, Washington County, and consultant staff, developed the TVCP with consideration of input from the TVCP Technical Advisory Committee (TAC), the Community Advisory Committee (CAC), the Policy Group (PG), and the public (including input gathered at open houses and online). The TVCP is consistent with:

- The Oregon Transportation Planning Rule (TPR)
- Oregon Highway Plan (OHP)
- Regional Transportation Plan (RTP) Congestion Management Process (section 6.4)
- RTP Mobility Corridor #24 Strategy (section 4.2.25)
- Regional Transportation Functional Plan (RTFP), including Title 1 System Design and Section 3.08.220 Transportation Solutions

[1] *For background and stage-setting information regarding the state, regional and local regulatory and policy environment and direction the TVCP seeks to help advance, please refer to the "Tualatin-Valley Highway Corridor Plan, Policy and Plan Guidance Report."*

The TVCP was developed to support the nine TVCP implementation goals that the TVCP (PG) adopted and that are consistent with the RTP (see Table 1).

Table 1. TVCP Goals and Objectives

TVCP Implementation Goals	Objectives	Applicable RTP Goal(s)
1. Improve mobility for multimodal travel through and within the TVCP Project Area	1A. Provide travel time reliability for transit 1B. Provide travel time reliability for autos and trucks 1C. Maintain mobility for trucks and over-dimensional vehicles on TV Hwy 1D. Maintain rail corridor for freight operations 1E. Minimize travel times for autos, trucks, transit, bicyclists, and pedestrians	*Goal 2: Sustain Economic Competitiveness and Prosperity* *Goal 3: Expand Transportation Choices* *Goal 4: Emphasize Effective and Efficient Management of the Transportation System*
2. Enhance connectivity and accessibility to key destinations within the TVCP Project Area for pedestrians, bicyclists, transit, automobile, and freight users	2A. Provide a well-connected network of streets, pedestrian, and bicycle facilities to safely and comfortably accommodate all users (see RTFP 3.08.110-140 for guidance) 2B. Complete the arterial, collector, and local street system (see RTFP 3.08.110 for guidance) 2C. Complete the pedestrian system (sidewalks, crossings, and pathways) (see RTFP 3.08.130 for guidance) 2D. Complete the bicycle system (on-street and off-street bikeways and crossings) (see RTFP 3.08.140 for guidance) 2E. Complete the regional transit system (see RTFP 3.08.120 for guidance)	*Goal 2: Sustain Economic Competitiveness and Prosperity* *Goal 3: Expand Transportation Choices* *Goal 5: Enhance Safety and Security*
3. Enhance safety for all users and modes along and across TV Hwy	3A. Increase community awareness of safety issues and safe travel behavior in the TVCP Project Area 3B. Reduce potential for severe crashes for all modes 3C. Enhance conditions for reliable emergency service responsiveness	*Goal 2: Sustain Economic Competitiveness and Prosperity* *Goal 3: Expand Transportation Choices* *Goal 5: Enhance Safety and Security* *Goal 9: Ensure Fiscal Stewardship*
4. Strengthen and support economic vitality and well-being	4A. Develop solutions that support economic vitality 4B. Improve freight and worker access to industrial and employment areas	*Goal 2: Sustain Economic Competitiveness and Prosperity* *Goal 9: Ensure Fiscal Stewardship*
5. Improve the visual appearance of TV Hwy	5. Incorporate visual amenities (i.e., streetscaping and vegetation/landscaping) within the TV Hwy right-of-way	*Goal 1: Foster Vibrant Communities and Efficient Urban Form* *Goal 6: Promote Environmental Stewardship*
6. Promote environmental stewardship	6A. Improve the air quality in the corridor 6B. Minimize impacts to stream corridors, wetlands, and upland habitat 6C. Improve water quality in the corridor	*Goal 6: Promote Environmental Stewardship*

TVCP Implementation Goals	Objectives	Applicable RTP Goal(s)
7. Reduce per person and/or overall vehicle miles traveled (VMT) in the TVCP Project Area	7A. Increase pedestrian mode share compared to 2010 7B. Increase bicycle mode share compared to 2010 7C. Increase transit mode share compared to 2010 7D. Reduce travel share by single-occupant vehicles (SOVs)	*Goal 3: Expand Transportation Choices*
8. Demonstrate fiscal and financial responsibility	8. Develop cost-effective solutions (comprehensive and long-term, considering capital, operations, maintenance, and other applicable Least Cost Planning factors)	*Goal 9: Ensure Fiscal Stewardship*
9. Be consistent with state and regional comprehensive strategies to reduce greenhouse gas (GHG) emissions	9. Reduce transportation-related GHG emissions in the TVCP Project Area	*Goal 6: Promote Environmental Stewardship* *Goal 7: Enhance Human Health*

The TVCP seeks to provide a safer, more-complete and better-connected network of streets, pedestrian and bicycle facilities for the improved movement of people, goods, and commerce into and throughout the project area, while improving livability and sustainability within the Corridor. This Plan succeeds in furthering this objective to the extent that limited financial resources and the public decision making and project prioritization processes allow.

RECOMMENDED RTP MULTIMODAL FUNCTIONAL AND DESIGN CLASSIFICATIONS

Consistent with the TVCP PG's policy direction[2] to maintain the design and function of TV Hwy as an urban arterial that will not exceed motorized vehicle capacity of two through travel lanes in each direction, proposed actions along TV Hwy will be developed during subsequent refinement planning and design work to maximize the use of the typical 100 feet to 107 feet of existing right-of-way (ROW) to serve multimodal travel, as shown in the proposed typical cross sections (see Figures 1 and 2). The following is a summary of the proposed typical cross sections for TV Hwy within the TVCP Project Area.[3,4]

Motor Vehicle: Motor vehicle through travel lane widths would remain the same (12 feet), as would the number of lanes in each direction (two). However, the right-turn lane width could be reduced from 15 feet to 11 feet. The median left-turn lane would also remain the same width (14 feet); however, where turn movements are not permitted, and where feasible, the 14-foot-wide median turn lane could include a raised median with landscaping. Additionally, the median turn lane area would include protected pedestrian crossings, including signage (see Figures 4 through 7, segment maps).

Pedestrian and Bicycle Facilities: As shown in the cross sections, the existing 6.5 feet of sidewalk width on the north side of TV Hwy would remain, and sidewalk gaps would be infilled. Abutting the sidewalk would be a landscaped buffer strip between 3 feet and 7.5 feet wide, depending on available ROW, and there would be striped bicycle lanes 6 feet wide past the buffer strip. Where there is a right-turn lane, the bicycle lanes would be located between the through lanes and the right-turn lane. On the south side

[2] *See Appendix D Arterial v. Throughway Issue Paper.*
[3] *Note: Depending on each particular intersection, there would likely be some variation of the typical cross section profiles presented. Further study may indicate preference for raised multi-use path south of railroad ROW.*
[4] *ROW widths will be verified by agency technical staff.*

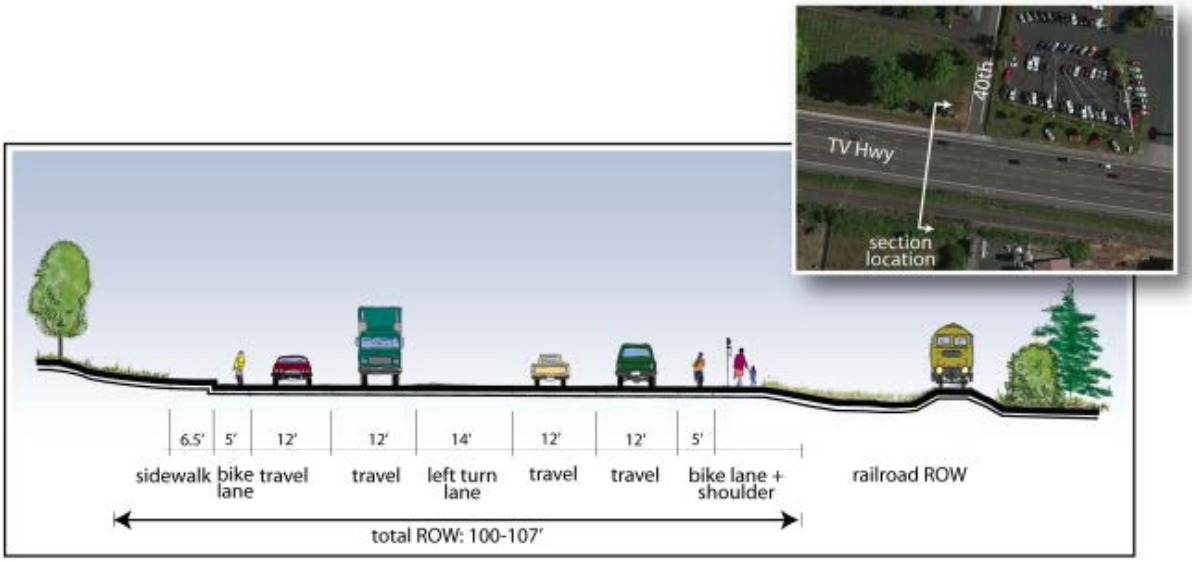
of TV Hwy, a raised 14-foot multi-use path plus a functional wall with decorative elements separating the multi-use path from the railroad tracks is recommended to be constructed beyond the completion of the TVCP (in 15 years or more).

Transit: Improved transit facilities on the north side of TV Hwy would be incorporated into the sidewalk and green landscaping strip space and would include shelters, signage, and lighting, and be raised on the curb to meet Americans with Disabilities Act (ADA) requirements. On the south side of TV Hwy, transit facilities would be incorporated into the adjacent railroad ROW where necessary. Active transportation would be directed behind the transit facilities when a multi-use path is implemented beyond the completion of the TVCP (in 15 years or more).

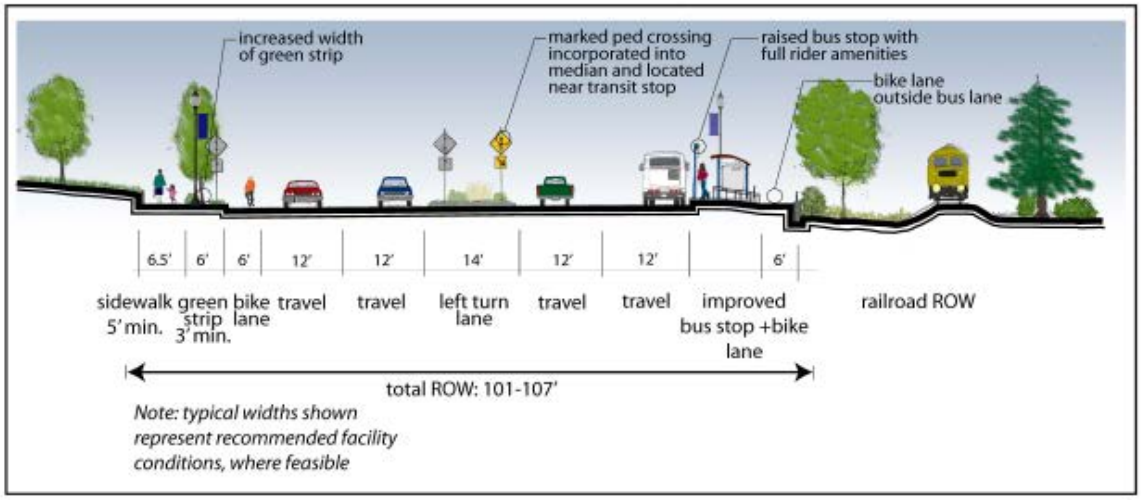
Although this plan does not cover the more detailed preliminary design that will be needed to develop specific access management applications at an individual property level, proposed future applications of access management techniques are identified for those areas having commercial and retail uses with direct access to TV Hwy, as shown on the segment maps (Figures 4 through 7).[5] At appropriate locations, reduced numbers of driveways and associated vehicle turn movements along TV Hwy would be combined with new local street connectivity, implemented through redevelopment of large commercial lots, to provide safe and convenient access to businesses while reducing the number of shorter-distance trips on TV Hwy.

[5] *The overall map (Figure 3) shows all recommended actions; Figures 4 through 7 show all near term actions; and Appendix A has segment maps showing all recommended actions (near term, opportunistic, and beyond the TVCP).*

Figure 1. Typical Cross Section at TV Hwy and 40th Avenue

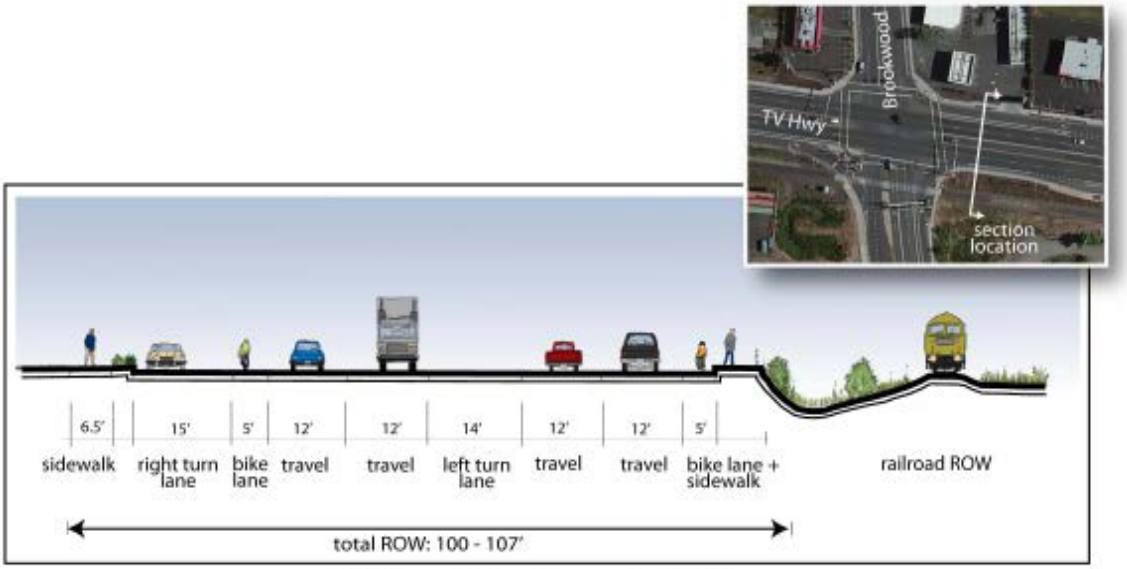


TV Highway at 40th - *Existing*

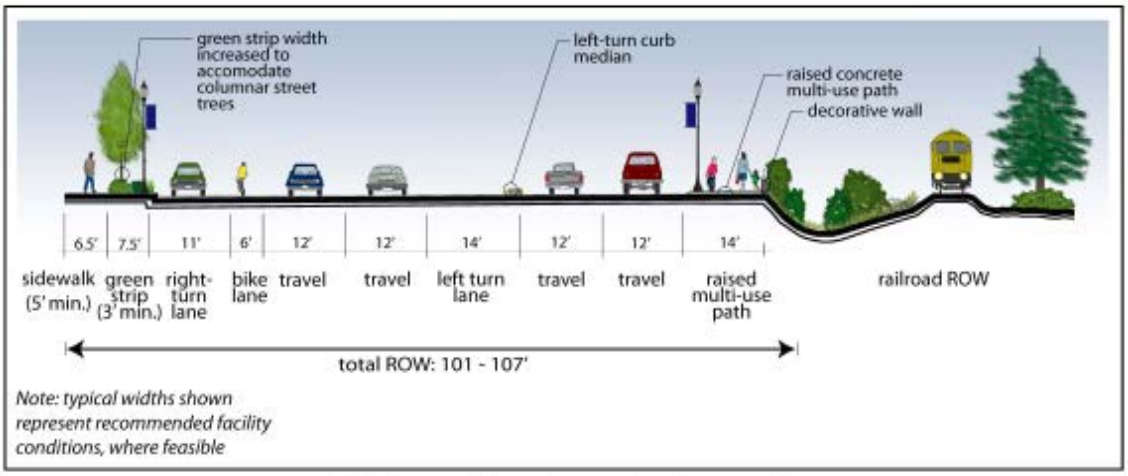


TV Highway at 40th - *Proposed*

Figure 2. Typical Cross Section at TV Hwy and Brookwood Avenue



TV Hwy at Brookwood - *Existing*



TV Hwy at Brookwood - *Proposed*

SEGMENT MAPS

The following maps (Figures 3 through 7) show existing land uses, streets, and bicycle and pedestrian facilities as well as the recommended transportation improvements to be implemented within the near term (next 15 years) for each mode of travel. The maps include markings to show intersections and pedestrian crossings to be improved, recommended RTP financially constrained and not financially constrained projects, and other recommended actions in the corridor.

The four map focus segments are:

- Segment A: 10th Street to Brookwood Avenue
- Segment B: Brookwood Avenue to 209th Avenue
- Segment C: 209th Avenue to 170th Avenue
- Segment D: 170th Avenue to Cedar Hills Boulevard

The corresponding tables (Tables 2 through 5) show the proposed near term projects[6] in the TVCP with corresponding numbers to the segment maps. For a complete list of all near term, opportunistic, and future actions beyond the TVCP see Appendix A. Included in Tables 2 through 5 are conceptual, planning-level cost estimates and two columns to show the responsible lead and partner agencies for advancing each recommended action.

REGIONAL TRANSPORTATION PLAN FINANCIALLY CONSTRAINED PROJECT LIST

The 2035 Regional Transportation Plan (RTP) incorporates projects, programs, and policies intended to achieve the region's vision for an integrated land use and transportation system. The RTP recommends how to invest more than $20 billion in anticipated federal, state, and local transportation funding in the Portland metropolitan area until 2035.[7] Desired outcomes for the region include those of promoting job growth, curbing GHG emissions, increasing safety and health, supporting freight transportation, and promoting vibrant communities. After considering public comment, the Joint Policy Advisory Committee on Transportation (JPACT) approved and the Metro Council adopted the 2035 RTP on June 10, 2010.

Federal rules require all RTP projects to be financially constrained such that the estimated costs of the identified projects do not exceed anticipated revenues.[8] The list of RTP financially constrained projects within the TVCP Project Area is provided in Tables 2 through 5 by project segment (Segments A through D). The RTP projects that are not financially constrained may be considered for completion if and when the funding becomes available and complies with RTP Policy. This will require an amendment to the RTP. These are classified as long-term projects in Tables 2 through 5 and also are shown on the segment maps.

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[6] *With the exception of the left-turn permissive/protective improvements (see Table 7, Recommended Near Term Left-Turn Signal Improvements).*
[7] *http://www.oregonmetro.gov/index.cfm/go/by.web/id=25038*
[8] *http://library.oregonmetro.gov/files/2035rtpupdateworkprogram.pdf*

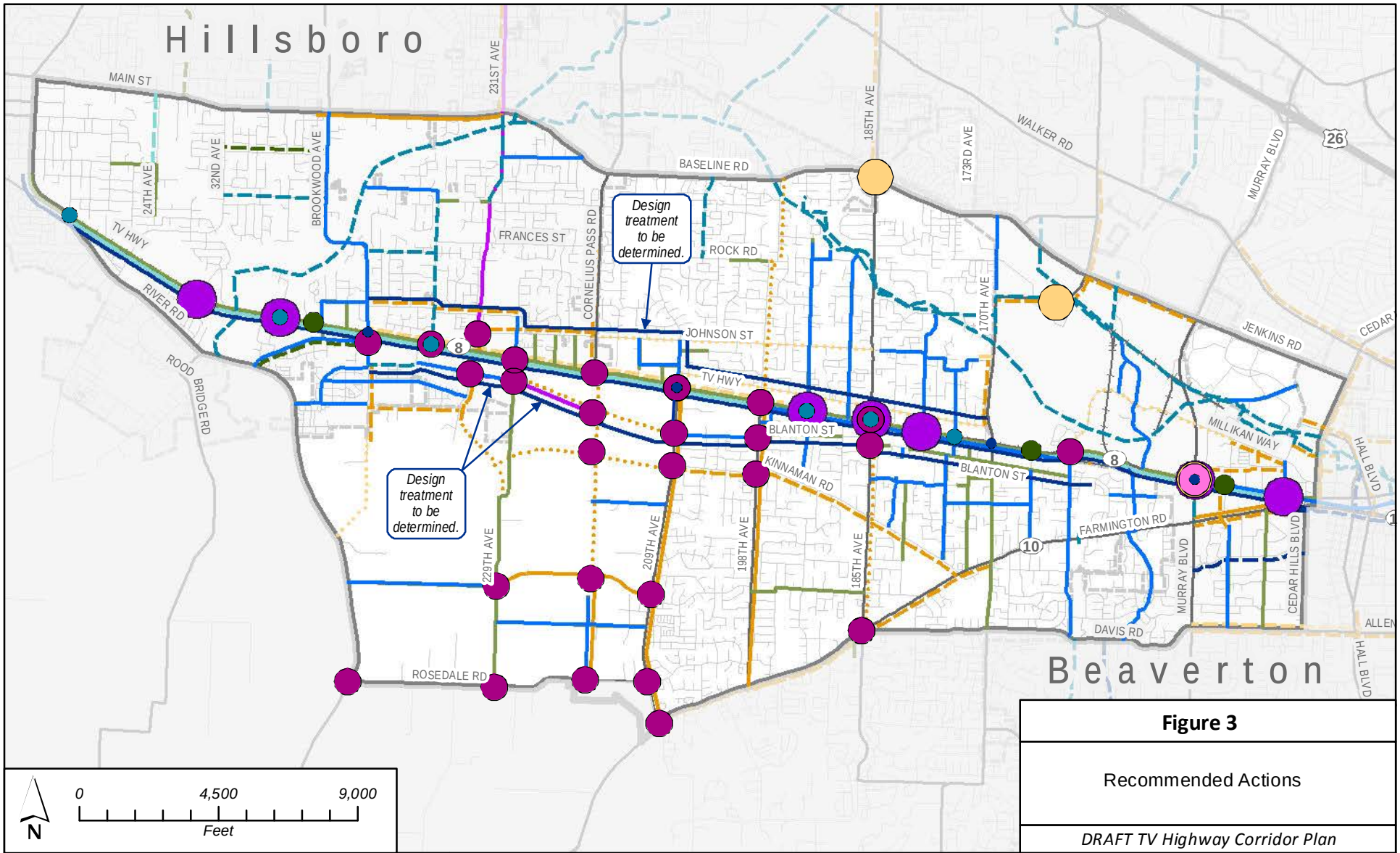

Figure 3

Recommended Actions

DRAFT TV Highway Corridor Plan

TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

WASHINGTON COUNTY OREGON

CITY OF HILLSBORO

DAVID EVANS AND ASSOCIATES INC.

Legend

- TV Highway Corridor Plan (TVCP) Boundary
- City Limits
- Railroad

Bus Stop Improvements

- Transit (Near Term)

Transit Improvements

- Transit Facilities (Near Term)

Intersection Improvements

- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Pedestrian (Near Term)
- Motor Vehicle/Freight Facilities (Near Term)
- Motor Vehicle/Freight Facilities (Longer Term)
- Multi-Modal (Longer Term)

Street/Trail Improvements

- Bike Facilities (Near Term)
- Bike Facilities (Opportunistic)
- Bike Facilities (Longer Term)
- Bike/Ped Facilities (Longer Term)
- Pedestrian Facilities (Near Term)
- Pedestrian Facilities (Opportunistic)
- Multi-Modal Facilities (Near Term)

Local RTP Financially Constrained Projects (Recommended)

- Multi-Modal Facilities (Near Term)
- Multi-Modal Facilities (Longer Term)

Federal RTP Financially Constrained Projects (Recommended)

- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Bike/Ped Facilities (Longer Term)
- Pedestrian Facilities (Near Term)
- Multi-Modal Facilities (Near Term)
- Multi-Modal Facilities (Longer Term)
- Motor Vehicle/Freight Facilities (Near Term)

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Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

Table 2. TVCP RECOMMENDED NEAR TERM ACTIONS - SEGMENT A

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

(For a complete list of all recommended TVCP actions please see **Appendix A**)

RTP/Map Project Number	Location	Proposed Project	Lead Agency	Partner Agency	Concept-Level Estimated Cost
Not Mapped	TVCP Project Area	Add directional wayfinding signs	Washington County		NA
Not Mapped	TVCP Project Area	Support and promote employer incentive programs to reduce driving	Westside Transportation Alliance	Washington County city of Hillsboro City of Beaverton	NA
Not Mapped	TV Hwy	Add street lighting on TV Hwy	ODOT		$8,700,000
10820	Brookwood/247th (Alexander St. to South UGB)	Widen two lanes with onstreet parking and sidewalks Alexander to Davis; widen to 3 lanes with bike lanes and sidewalks. RTP 10820	Washington County		$1,700,000
1	13th Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy.	ODOT		$1,900,000
3	40th Ave. at TV Hwy Intersection	Improve pedestrian and bicyclist crossing of TV Hwy	ODOT		$300,000
40 (Not Mapped on Near Term Segment Maps)	TV Hwy	Complete planning and conceptual plan for a multi-use path on South side of TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton THPRD	$5,000,000
10834	28th Avenue (Main St. to 25th)	Widen to 3 lanes with bike/sidewalks. RTP 10834	City of Hillsboro		$3,750,000
10851	Rock Creek Trail	Construct bike/ped trail between River Road and Orchard Park (east of Cornelius Pass Rd.) RTP 10851	City of Hillsboro	Near Term	$5,520,000
11151	Bentley Street (32nd Ave. to Brookwood Ave.)	Construct sidewalks and bike lanes. RTP 11151	City of Hillsboro		$3,000,000
11159	Alexander Street (Brookwood (247th) to 56th Ct.)	Widen to provide bike lanes and sidewalks. RTP 11159	City of Hillsboro		$1,000,000
11160	Witch Hazel Road (River Rd. to Brookwood [247th])	Widen to provide sidewalks. RTP 11160	City of Hillsboro		$1,000,000
11161	Rood Bridge Road (River Rd. to South UGB)	Widen to provide bike lanes and sidewalks. RTP 11161	City of Hillsboro		$2,500,000
11162	24th Ave (Maple to Main St.)	Widen to provide bike lanes and sidewalks, bridge over Dawson Creek. RTP 11162	City of Hillsboro		$4,000,000
5	TV Hwy	Fill gaps in sidewalks and add landscape buffer along TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$4,700,000
11142	37th Ave (Main St. and Brodgden Ave)	Widen to provide sidewalks and Bikeway Network signage access to LRT and Fairgrounds. RTP 11142	City of Hillsboro		$1,000,000
11152	Cedar Street (32nd Ave. to Brookwood Ave.)	Construct sidewalks. RTP 11152	City of Hillsboro		$1,000,000
11160	Witch Hazel Road (River Rd. to Brookwood [247th])	Widen to provide sidewalks. RTP 11160	City of Hillsboro		$1,000,000
53	SE 44th Avenue/SE 45th Avenue and TV Hwy	Install Rectangular Rapid Flash Beacon (RRFB). Potential ODOT Fix-it Project	ODOT		$200,000
4	TV Hwy	Complete bike lanes on TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$4,400,000
13	TVCP Project Area	Develop continuous East-West parallel bike routes	Washington County	City of Hillsboro City of Beaverton	$2,200,000
9	SE 24th Avenue and TV Hwy (south side)	Improve bus stop.	TriMet	ODOT	$1,800
10	SE 40th Avenue and TV Hwy (south side)	Improve bus stop.	TriMet	ODOT	$1,800
Not Mapped	TV Hwy	More detailed study to determine long-term transit solutions for TV Hwy	Metro	ODOT TriMet	$400,000 - $1,000,000
Not Mapped	TVCP Project Area	Improve existing #57 bus service	TriMet		$2,200,000
Not Mapped	TVCP Project Area	Public community rail safety education	ODOT		NA

HILLSBORO

13th

21st

24th

32nd

Brookwood Ave

Patterson

Cypress

Golden

30th

Minter Bridge

River Rd

45th

Drake

Witch Hazel

Alexander

11152

11151

11153

10851

11156

11160

11159

10820

1

9

57

4

5

3

10

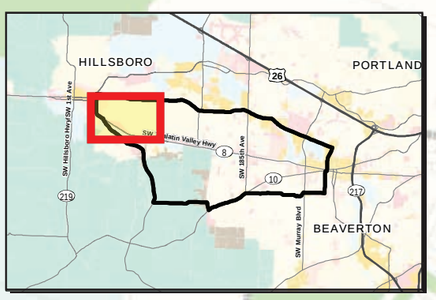
53

13

15

Design treatment to be determined.

Design treatment to be determined.



Some improvements extend outside of the area shown on maps. These improvements connect with the larger regional multimodal system in the project area.

TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

WASHINGTON COUNTY OREGON

CITY OF HILLSBORO

DAVID EVANS AND ASSOCIATES INC.

North

0 400 800
Feet

Legend

- Railroad Corridor
- TriMet Bus Route Number and Bus Stop
- Railroad Crossing

Trip Attractions

- Schools
- Retail Centers
- Employment Centers

Generalized Zoning

- Commercial
- Future Urban Develop.
- Industrial
- Multi-Family
- Mixed-Use Residential
- Parks & Open Spaces
- Rural
- Single Family

- Existing Signal (Implement Signal Timing)

Environmental Justice

- Significant Non-English-Speaking Population[1]
- Significant Low-Income Population[2]

Intersection Improvements

- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Motor Vehicle Facilities (Near Term)

Bus Stop Improvements

- Transit Facilities (Near Term)

Street/Trail Improvements

- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Multi-Modal Facilities (Near Term)

Transit Improvements

- Transit Facilities(Near Term)

Local RTP Financially Constrained Projects (Recommended)

- Multi-Modal Facilities (Near Term)

Federal RTP Financially Constrained Projects (Recommended)

- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Multi-Modal Facilities (Near Term)
- Motor Vehicle/Freight Facilities (Near Term)

Note: This figure presents a zoomed-in view around TV Hwy itself. For the whole-project area view see Figure 3.

Segment A

Recommended Near Term Actions

Figure 4

DRAFT TV Highway Corridor Plan

Table 3. TVCP RECOMMENDED NEAR TERM ACTIONS - SEGMENT B

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

(For a complete list of all recommended TVCP actions please see **Appendix A**)

Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

RTP/Map Project Number	Location	Proposed Project	Lead Agency	Partner Agency	Concept-Level Estimated Cost
44	SW Rosa Rd. Extension	Extend Rosa Rd. from 229th to 209th (including bike lanes and sidewalks).	City of Hillsboro		NA
57	209th Improvements (TV Hwy to Farmington)	Widen to a 5 lane facility with bike lanes/sidewalks	City of Hillsboro		$27,391,000
83	229th Ave. Improvements	Widen to inlcude bike lanes and sidewalks from McInnis to Alexander	City of Hillsboro		$3,276,000
MSTIP 18	Baseline Rd. (231st to Brookwood)	Improve to 5 lane with bike/ped facilities, storm drainage, and street lighting. MSTIP 18	Washington County		$11,300,000
10553	209th Improvements (TV Hwy to Farmington)	Widen and realign to three lanes with bike lanes and sidewalks. RTP 10553	City of Hillsboro		$26,517,000
10587	Cornelius Pass Rd. (Frances St. to TV Hwy)	Widen to five lanes wth bike lanes and sidewalks. RTP 10587	Washington County	City of Hillsboro	$11,307,000
10818	231st Ave./Century Blvd (Baseline to Lois Rd.)	Build bridge and 3 lanes with bike lanes and sidewalk. RTP 10818	City of Hillsboro	Washington County	$16,500,000
10819	231st Ave./Century Blvd (Baseline to Cornell Rd.)	Widen to three lanes with bike lanes and sidwalks. RTP 10819	City of Hillsboro		$6,800,000
10820	Brookwood/247th (Alexander St. to South UGB)	Widen two lanes with onstreet parking and sidewalks (Alexander to Davis); widen to 3 lanes with bike lanes and sidewalks (Davis to South UGB). RTP 10820	City of Hillsboro		$1,700,000
10830	Johnson (Cornelius Pass to Century Blvd)	Widen to three lanes with bike lanes and sidewalks. RTP 10830	City of Hillsboro		$8,000,000
10838	Davis Road (Brookwood to Century Blvd.)	Extend three lane road with bike lanes/sidewalks. RTP 10838	City of Hillsboro		$2,700,000
10839	Century Blvd. (Alexander to South UGB)	Extend three land road with bike lanes/sidewalks from Alexander to South UGB. RTP 10839	City of Hillsboro		$4,000,000
10844	Cornelius Pass Road (TV Hwy to Rosa Rd. Extension)	Extend as a 5 lane facility with bike lanes/sidewalks. Add turn lanes at TV Hwy. Local RTP 10844	City of Hillsboro	Washington County	$45,000,000
11137	TV Hwy/Century Blvd Intersection	Add second southbound lane, Add northbound left turn lane, widen rail crossing, add offroad bike lanes on Century from TV Hwy to Alexander. RTP 11137	City of Hillsboro		$1,800,000
11155	Drake Street (Imlay Ave. to 67th Ave.)	Widen to provide two or three lanes with bike lanes and sidewalks. RTP 11155	City of Hillsboro		$1,800,000
11156	Drake Street (Brookwood Ave to Imlay Ave)	Widen to provide two or three lanes with bike lanes and sidewalks. RTP 11156	City of Hillsboro		$1,500,000
11272	Kinnaman Rd. Extension (209th Ave to Century Blvd. Extension)	Construct 3 lane with bike lanes and sidewalks. Local RTP 11272	City of Hillsboro		$7,900,000
11273	Alexander St. Extension (229th to 209th at Blanton)	Construct 3 lane with bike lanes and sidewalks. Local RTP 11273	City of Hillsboro		$7,000,000
11274	Century Blvd Extension (Area 71 UGB to 229th Ave).	Construct 3 lane with bike lanes and sidewalks. Local RTP 11274	City of Hillsboro		$3,000,000
Not Mapped	TVCP Project Area	Add directional wayfinding signs	Washington County		NA
Not Mapped	TVCP Project Area	Support and promote employer incentive programs to reduce driving	Westside Transportation Alliance	Washington County City of Hillsboro City of Beaverton	NA
Not Mapped	TV Hwy	Add street lighting on TV Hwy	ODOT		$8,700,000
14	Imlay Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy.	ODOT	Washington County	$300,000

Table 3. TVCP RECOMMENDED NEAR TERM ACTIONS - SEGMENT B

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

(For a complete list of all recommended TVCP actions please see **Appendix A**)

Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

40 (Not Mapped on Near Term Segment Maps)	TV Hwy	Complete planning and conceptual plan for a multi-use path on South side of TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton THPRD	$5,000,000
10851	Rock Creek Trail	Construct bike/ped trail between River Road and Orchard Park (east of Cornelius Pass Rd.) RTP 10851	City of Hillsboro		$5,520,000
11153	Golden Road (Brookwood to Imlay Ave.)	Widen to provide bike lanes and sidewalks. RTP 11153	City of Hillsboro		$2,000,000
11157	Imlay Avenue (TV Hwy to Lois St.)	Widen to provide bike lanes and sidewalks. RTP 11157	City of Hillsboro		$2,000,000
11159	Alexander Street (Brookwood (247th) to 56th Ct.)	Widen to provide bike lanes and sidewalks. RTP 11159	City of Hillsboro		$1,000,000
5	TV Hwy	Fill gaps in sidewalks and add landscape buffer along TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$4,700,000
11160	Witch Hazel Road (River Rd. to Brookwood [247th])	Widen to provide sidewalks. RTP 11160	City of Hillsboro		$1,000,000
4	TV Hwy	Complete bike lanes on TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$4,400,000
13	TVCP Project Area	Develop continuous East-West parallel bike routes	Washington County	City of Hillsboro City of Beaverton	$2,200,000
15	Brookwood Ave at TV Hwy Intersection	Improve bike crossing of TV Hwy	ODOT	Washington County	$1,800,000
18	209th and TV Hwy Intersection	Improve bike crossing	ODOT	Washington County	$1,800,000
Not Mapped	TV Hwy	More detailed study to determine long-term transit solutions for TV Hwy	Metro	ODOT TriMet	$400,000 - $1,000,000
Not Mapped	TVCP Project Area	Improve existing #57 bus service	TriMet		$2,200,000
56	Century Blvd.	Improve North-South bus service along Century Blvd.	TriMet		$5,000,000
17	Cornelius Pass Rd. and TV Hwy Intersection	Add protected northbound left turn signal, add eastbound and westbound right-turn lanes, add dual left-turn lanes on all approaches. Northbound approach would have 2 left, 2 through and 1 right turn lane. Southbound approach would have 2 left, 1 through, and 1 through/right turn lane. New rail crossing.	ODOT	City of Hillsboro	$7,206,000
19	209th Ave. and TV Hwy Intersection	Modify RTP 11136 lane configuration and signal heads from Dual NBL, NBTR to NBL, NBT, NBR.	ODOT	City of Hillsboro	$250,000
19	209th Ave. and TV Hwy Intersection	Widen and adjust grade for northbound approach. Modify Rail Crossing	ODOT	City of Hillsboro	$1,200,000
19	209th Ave. and TV Hwy Intersection	Make northbound and southbound left turns protective/permissive (flashing yellow)	ODOT	City of Hillsboro	$100,000
45	Imlay Ave. and TV Hwy Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	City of Hillsboro		$400,000
46	Johnson St. and Century Blvd. Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	City of Hillsboro		$400,000
47	Alexander St. and Century Blvd. Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	City of Hillsboro		$400,000
48	Alexander St. and Cornelius Pass Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	City of Hillsboro		$400,000
49	Blanton St. and 209th Ave. Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	City of Hillsboro		$400,000
50	Kinnaman Rd. and 209th Ave Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	City of Hillsboro		$400,000
11136	209th Ave and TV Hwy Intersection	Add eastbound right turn lane, widen crossing for second northbound to westbound left turn lane, add second southbound lane, protected N-S turn phasing. RTP 11136	ODOT	City of Hillsboro	$3,800,000
Not Mapped	TVCP Project Area	Public community rail safety education	ODOT		NA

Golden
Frances
Rock
Brookwood Ave
Imlay
Century Blvd
Cornelius Pass Rd
45th
Drake
Johnson
Witch Hazel
Alexander
229th
209th Ave
Design treatment to be determined.
Design treatment & alignment to be determined.
Some improvements extend outside of the area shown on maps. These improvements connect with the larger regional multimodal system in the project area.
HILLSBORO
PORTLAND
BEAVERTON

Legend

- Railroad Corridor
- TriMet Bus Route Number and Bus Stop
- Railroad Crossing

Trip Attractions
- Schools
- Retail Centers
- Employment Centers

Generalized Zoning
- Commercial
- Future Urban Develop.
- Industrial
- Multi-Family
- Mixed-Use Residential
- Parks & Open Spaces
- Rural
- Single Family

- Existing Signal (Implement Signal Timing)

Environmental Justice
- Significant Non-English-Speaking Population[1]
- Significant Low-Income Population[2]

Intersection Improvements
- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Motor Vehicle Facilities (Near Term)

Bus Stop Improvements
- Transit Facilities (Near Term)

Street/Trail Improvements
- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Multi-Modal Facilities (Near Term)

Transit Improvements
- Transit Facilities(Near Term)

Local RTP Financially Constrained Projects (Recommended)
- Multi-Modal Facilities (Near Term)

Federal RTP Financially Constrained Projects (Recommended)
- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Multi-Modal Facilities (Near Term)
- Motor Vehicle/Freight Facilities (Near Term)

North

0 400 800
Feet

Note: This figure presents a zoomed-in view around TV Hwy itself. For the whole-project area view see Figure 3.

TV HIGHWAY CORRIDOR PLAN
OREGON DEPARTMENT OF TRANSPORTATION
WASHINGTON COUNTY OREGON
CITY OF HILLSBORO
DAVID EVANS AND ASSOCIATES INC.

Segment B

Recommended Near Term Actions

Figure 5

DRAFT TV Highway Corridor Plan

Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

Table 4. TVCP RECOMMENDED NEAR TERM ACTIONS - SEGMENT C

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

(For a complete list of all recommended TVCP actions please see **Appendix A**)

RTP/Map Project Number	Location	Proposed Project	Lead Agency	Partner Agency	Concept-Level Estimated Cost
21	198th Ave (Farmington to TV Hwy)	Revised scope includes 1) Phase of full 3-lane improvement or 2) possible interim safety/capacity spot improvements. Include bike/ped facilities, storm drainage and street lighting as appropriate. MSTIP 28	Washington County		$14,000,000
65	198th Ave (Farmington to TV Hwy)	Revised scope includes 1) Phase of full 3-lane improvement or 2) possible interim safety/capacity spot improvements. Include bike/ped facilities, storm drainage and street lighting as appropriate. MSTIP 28	Washington County		$27,900,000
10553	209th Improvements (TV Hwy and Farmington)	Widen and realign to three lanes with bike lanes and sidewalks. RTP 10553	Washington County City of Hillsboro		$26,517,000
10560	Farmington Road (170th Ave to 185th Ave)	Widen roadway to five lanes with bike lanes and sidewalks. RTP 10560	Washington County		$17,676,000
10574	Farmington Road (185th to 198th)	Widen from two to three lanes with bike lanes and sidewalks. RTP 10574	Washington County		$17,326,000
10582	185th Ave. Improvements (TV Hwy to Farmington)	Widen to five lanes with bike lanes and sidewalks. Local RTP 10582	Washington County		$26,435,000
10586	198th Ave. Improvements (TV Hwy to Baseline Rd)	Widen to three lanes with bike lanes and sidewalks. RTP NFC 10586	City of Hillsboro		$24,194,000
10593	Kinnaman Rd. (Farmington Rd. to 209th Ave.)	Widen to three lanes with bike lanes and sidewalks. RTP 10593	Washington County		$24,793,000
10604	185th Ave. (Baseline Rd. to Hwy 26)	Install integrated surveillance and management equipment. RTP 10604	Washington County		$1,095,000
11284	Farmington Rd (185th to 198th)	Widen to 5 lanes with bike lanes and sidewalks. Local RTP 11284	City of Hillsboro	Washington County	$24,000,000
11285	Farmington Rd (198th to 209th)	Widen to 5 lanes with bike lanes and sidewalks. Local RTP 11285	City of Hillsboro	Washington County	$18,000,000
Not Mapped	TVCP Project Area	Add directional wayfinding signs	Washington County		NA
Not Mapped	TVCP Project Area	Support and promote employer incentive programs to reduce driving	Westside Transportation Alliance	Washington County city of Hillsboro	NA
Not Mapped	TV Hwy	Add street lighting on TV Hwy	ODOT		$8,700,000
23	192nd Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy.	ODOT		$3,000,000
25	185th Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy.	ODOT		$3,000,000
28	174th Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy	ODOT		$37,500
40 (Not Mapped on Near Term Segment Maps)	TV Hwy	Complete planning and conceptual plan for a multi-use path on South side of TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$5,000,000
10810	Westside Trail (Regional)	Design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved between Hwy 26 and THPRD Nature Park. RTP 10810	THPRD	Washington County	$4,000,000
10811	Beaverton Creek Trail (Regional) between SW 194th Ave and Fanno Creek Trail	Design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved. RTP 10811	THPRD	City of Beaverton	$7,000,000
10813	Westside Trail (Farrmington Rd. and Scholls Ferry Rd.)	Design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved. RTP 10813	THPRD	City of Beaverton	$4,150,000
10850	Beaverton Creek Trail, Bronson Creek Trail	Construct bike/ped trail between Baseline Rd, 185th and Rock Creek Trail. RTP 10850	THPRD	City of Beaverton Washington County	$1,000,000
11158	206th Ave (Baseline to Rock Rd.)	Widen to provide bike lanes and sidewalks. RTP 11158	Washington County		$3,000,000

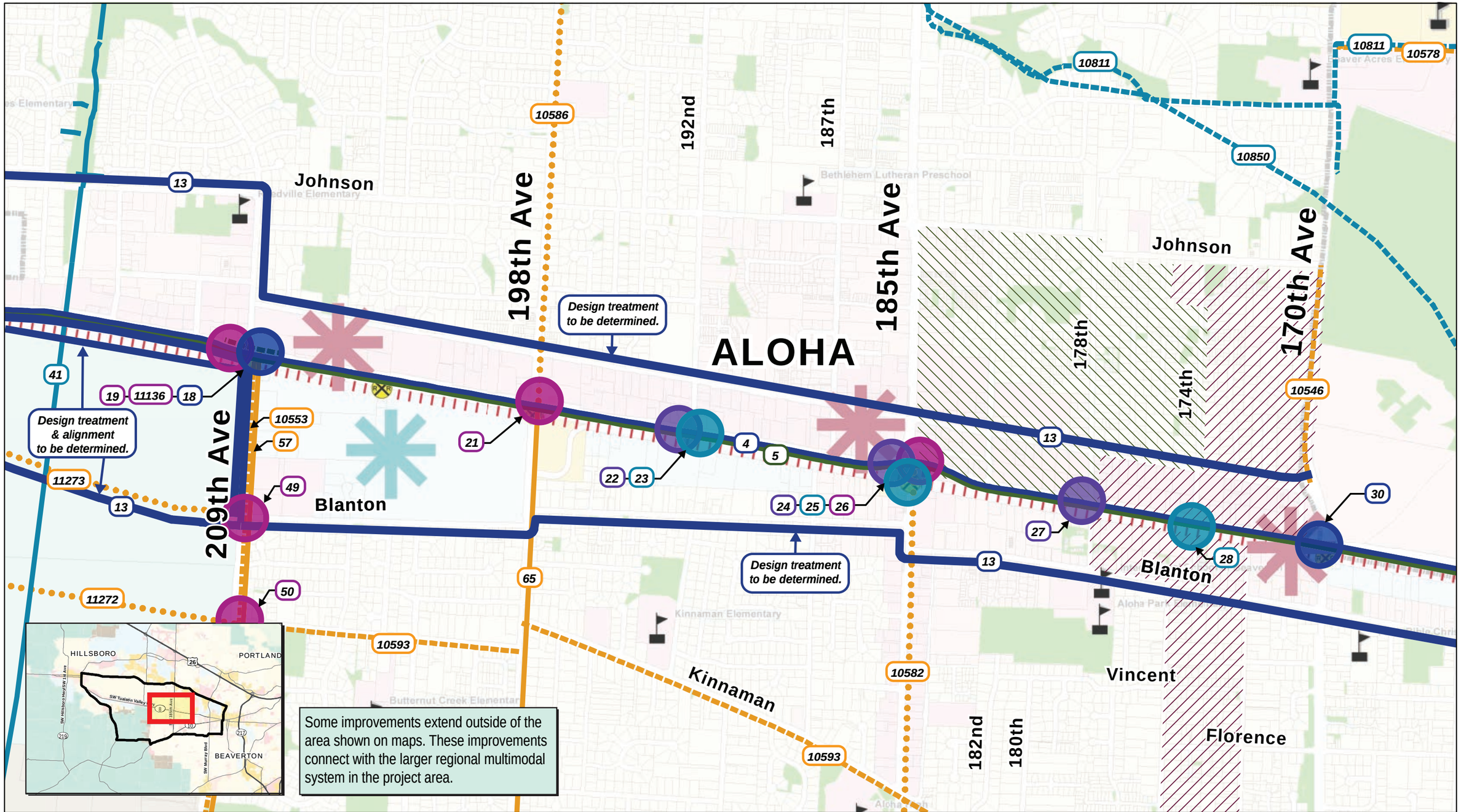
Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

Table 4. TVCP RECOMMENDED NEAR TERM ACTIONS - SEGMENT C

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

(For a complete list of all recommended TVCP actions please see **Appendix A**)

RTP/Map Project Number	Location	Proposed Project	Lead Agency	Partner Agency	Concept-Level Estimated Cost
Not Mapped	178th Avenue (TV Hwy to Johnson)	Build sidewalks and bike lanes up to the crossing at 178th and TV Hwy	ODOT	Washington County	Unavailable
5	TV Hwy	Fill gaps in sidewalks and add landscape buffer along TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$4,700,000
4	TV Hwy	Complete bike lanes on TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$4,400,000
13	TVCP Project Area	Develop continuous East-West parallel bike routes	Washington County	City of Hillsboro City of Beaverton	$2,200,000
18	209th and TV Hwy Intersection	Improve bike crossing	ODOT	Washington County	$1,800,000
22	SW 192nd Ave and TV Hwy (south side)	Improve bus stop	TriMet	ODOT	$7,250
24	SW 185th Avenue and TV Hwy (south side)	Improve bus stop	TriMet	ODOT	$1,850
10984	Reconfiguration of Millikan Way Park & Ride	Reconfigure lot in response to lease expiration. RTP 10984	TriMet	City of Beaverton	$2,000,000
Not Mapped	TV Hwy	More detailed study to determine long-term transit solutions for TV Hwy	Metro	ODOT TriMet	$400,000 - $1,000,000
Not Mapped	TVCP Project Area	Improve existing #57 bus service	TriMet		$2,200,000
19	209th Ave. and TV Hwy Intersection	Protected left turns in eastbound and westbound directions	ODOT	City of Hillsboro	$2,900,000
19	209th Ave. and TV Hwy Intersection	Change lane configuration from Dual NBL, NBTR to NBL, NBT, NBR	ODOT	City of Hillsboro	$3,600,000
19	209th Ave. and TV Hwy Intersection	Make northbound and southbound left turns protective/permissive (flashing yellow)	ODOT	City of Hillsboro	$1,000,000
26	SW 185th Ave and TV Hwy Intersection	Add dual left-turn lanes in all directions	ODOT		$9,900,000
26	SW 185th Ave and TV Hwy Intersection	Add eastbound and westbound right-turn lanes	ODOT		$3,800,000
29	SW 170th Ave and TV Hwy Intersection	Improve access management and road alignments	ODOT		$1,600,000
49	Blanton St. and 209th Ave. Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	City of Hillsboro		$400,000
11136	209th Ave and TV Hwy Intersection	Add eastbound right turn lane, widen crossing for second northbound to westbound left turn lane, add second southbound lane, protected N-S turn phasing. RTP 11136	ODOT	City of Hillsboro	$3,800,000
Not Mapped	TVCP Project Area	Public community rail safety education	ODOT		NA



TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

WASHINGTON COUNTY OREGON

CITY OF HILLSBORO

DAVID EVANS AND ASSOCIATES INC.

North

0 400 800
Feet

Legend

- Railroad Corridor
- TriMet Bus Route Number and Bus Stop
- Railroad Crossing

Trip Attractions
- Schools
- Retail Centers
- Employment Centers

Generalized Zoning
- Commercial
- Future Urban Develop.
- Industrial
- Multi-Family
- Mixed-Use Residential
- Parks & Open Spaces
- Rural
- Single Family

- Existing Signal (Implement Signal Timing)

Environmental Justice
- Significant Non-English-Speaking Population[1]
- Significant Low-Income Population[2]

Intersection Improvements
- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Motor Vehicle Facilities (Near Term)

Bus Stop Improvements
- Transit Facilities (Near Term)

Street/Trail Improvements
- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Multi-Modal Facilities (Near Term)

Transit Improvements
- Transit Facilities(Near Term)

Local RTP Financially Constrained Projects (Recommended)
- Multi-Modal Facilities (Near Term)

Federal RTP Financially Constrained Projects (Recommended)
- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Multi-Modal Facilities (Near Term)
- Motor Vehicle/Freight Facilities (Near Term)

Note: This figure presents a zoomed-in view around TV Hwy itself. For the whole-project area view see Figure 3.

Segment C

Recommended Near Term Actions

Figure 6

DRAFT TV Highway Corridor Plan

Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

Table 5. TVCP RECOMMENDED NEAR TERM ACTIONS - SEGMENT D

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

(For a complete list of all recommended TVCP actions please see **Appendix A**)

RTP/Map Project Number	Location	Proposed Project	Lead Agency	Partner Agency	Concept-Level Estimated Cost
38	Farmington Road (Murray to East of 141st)	Improve to 5 lanes with bike/ped facilities, storm drainage, and street lighting. MSTIP 2	City of Beaverton		$12,200,000
38	Farmington Road (East of 141st to Hocken)	Improve to 5 lane with bike/ped facilities, storm drainage, and street lighting. MSTIP 20	City of Beaverton		$10,700,000
10546	170th Ave. (Alexander St. to Merlo Rd.)	Widen roadway to 4 lanes with left turn lanes at major intersections and bike lanes and sidewalks. RTP 10546	Washington County		$15,530,000
10561	Jenkins Road (Murray Blvd to 158th Ave.)	Widen roadway from three to five lanes with bike lanes and sidewalks. RTP 10561	Washington County		$15,530,000
10578	Merlo/158th (170th Ave to Walker Rd.)	Widen roadway to five lanes with bike lanes and sidewalks. RTP 10578	Washington County		$24,735,000
10617	Farmington Road (Murray Blvd.and Hocken Ave.)	Construct turn lanes and intersection improvements; signalize where warranted; add bike lanes and sidewalks in gaps. RTP 10617	City of Beaverton		$8,700,000
10618	Dawson/Westgate Multimodal Extension (Rose Biggi Ave. to Hocken Ave.)	Extend 2 lane street from Hocken via Dawson and Westgate at Rose Biggi to fill a gap; realign Dawson/Westgate at Cedar Hills; add turn lanes at intersections, sidewalks, bikeway. RTP 10618	City of Beaverton		$8,900,000
10619	Crescent Street Multimodal Extension to Cedar Hills Blvd.	Extend 2 lane Crescent from Cedar Hills to Rose Biggi Ave. to fill a gap; add sidewalks, bikeway. RTP 10619	City of Beaverton		$3,500,000
10621	New street connection from Broadway to 115th Ave.	Construct new 2 lane street with bikeway and sidewalks. RTP 10621	City of Beaverton		$4,500,000
10622	Electric to Whitney to Carousel to 144th multimodal street connections	Connect existing streets and improve to standard with bikeways and sidewalks. RTP 10622	City of Beaverton		$7,200,000
10626	114th Ave./115th Ave. (MAX line to Beaverton Hillsdale Hwy/Griffith Drive)	Construct new two lane street with bike and pedestrian improvements. RTP 10626	City of Beaverton		$10,000,000
10627	Tualaway two-lane multimodal street extension	Extend existing street to Millikan with bikeways and sidewalks. RTP 10627	City of Beaverton		$3,900,000
10628	Center Street and 113th Avenue (Hall Blvd to Cabot St.)	Add sidewalks and bikelanes; add turn lanes where needed. RTP 10628	City of Beaverton		$5,800,000
10629	Hocken Ave. (TV Hwy to Farmington Rd.)	Widen existing street from 3 to 5 lanes, add bike lanes and sidewalks. RTP 10629	City of Beaverton		$1,600,000
10630	Hall Blvd. Extension	Extend Hall Blvd. from Cedar Hills to Hocken to fill a gap; add turn lanes at intersections, sidewalks and bikeway. RTP 10630	City of Beaverton		$5,500,000
10631	Jenkins Road (Murray Blvd to 158th Ave.)	Connect streets, add bikeways, sidewalks, turns lanes and signalize as warranted. RTP 10631	Washington County		$6,700,000
10633	Allen Blvd. (Hwy 217 to Western Ave.)	Widen street to 4/5 lanes adding turn lanes and signals where needed, construct bike lanes and sidewalks. RTP 10633	City of Beaverton		$6,300,000
10663	Hall Blvd. (Farmington Rd. to Cedar Hills Blvd.)	Construct bike lanes and turn lanes. RTP 10663	City of Beaverton		$5,200,000
10634	Cedar Hills Blvd. (Farmington Rd. to Walker Rd.)	Add turn lanes, bike lanes, and sidewalks. RTP 10634	City of Beaverton		$19,000,000
10636	Millikan Way (141st to Hocken Ave.)	Add turn lanes as needed, bike lanes and sidewalks, signalize as warranted. RTP 10636	City of Beaverton		$2,600,000
10669	Hall Blvd. (12th St. to Allen Blvd.)	Construct bike lanes and turn lanes. RTP 10669	City of Beaverton		$5,200,000
11235	Walker Road (Murray Blvd. to Hwy 217)	Widen from two to five lanes with bike lanes and sidewalks. RTP 11235	Washington County		$25,673,000
Not Mapped	TVCP Project Area	Add directional wayfinding signs	City of Beaverton		NA
Not Mapped	TVCP Project Area	Support and promote employer incentive programs to reduce driving	Westside Transportation Alliance	Washington County city of Hillsboro City of Beaverton	NA
Not Mapped	TV Hwy	Add street lighting on TV Hwy	ODOT		$8,700,000

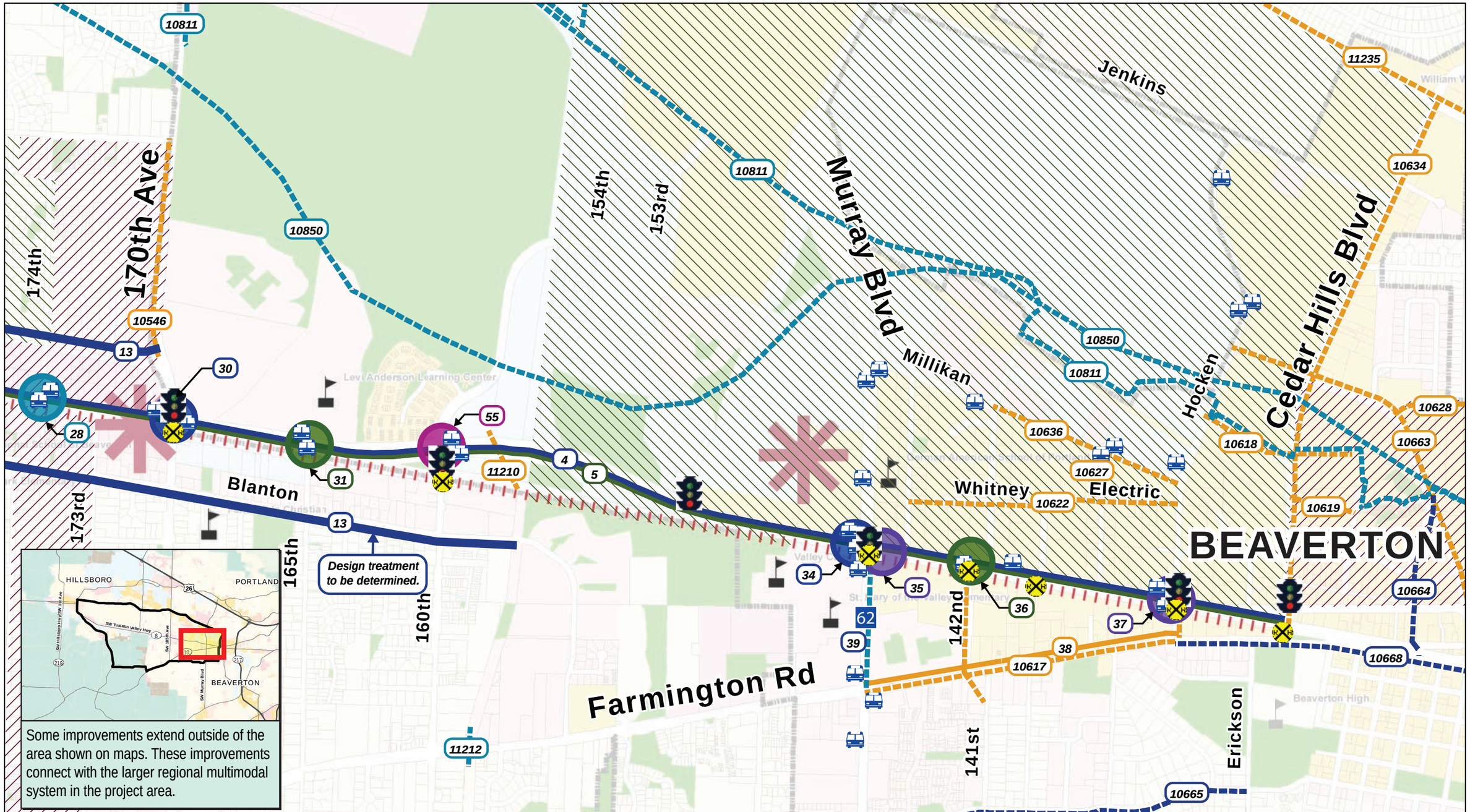
Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

Table 5. TVCP RECOMMENDED NEAR TERM ACTIONS - SEGMENT D

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

(For a complete list of all recommended TVCP actions please see **Appendix A**)

RTP/Map Project Number	Location	Proposed Project	Lead Agency	Partner Agency	Concept-Level Estimated Cost
40 (Not Mapped on Near Term Segment Maps)	TV Hwy	Complete planning and conceptual plan for a multi-use path on South side of TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton THPRD	$5,000,000
11240	Murray Blvd. (Farmington to TV Hwy)	Construct a six-foot wide bikelane on west side of Murray & replace existing asphalt path with six-foot wide concrete sidewalk & five-foot wide planting strip. RTP 11240	Washington County		$1,500,000
11215	Waterhouse Trail	Waterhouse Trail Segments #1, 5, West Spur between Merlo Rd. and Springville Rd.: Design and construct multi-use community trail segments 8'-10' wide paved. RTP 11215	THPRD	City of Beaverton	$3,700,000
11212	Bridge Crossing of Farmington Rd. by the Westside Trail	Would avoid out-of-direction bike/ped trips on a major regional trail that is otherwise complete in this area. RTP 11212	THPRD	City of Beaverton	$3,000,000
11214	Westside /Waterhouse Trail Connection	Design and construct a multi-use regional trail segment 10'-12' wide paved between Westside Trail at Westside MAX tracks to southern terminus of Waterhouse Trail @ Merlo Rd. RTP 11214	THPRD	City of Beaverton	$1,500,000
11210	TV Hwy by Westside Trail	Separated Grade Crossing of TV Hwy (for bikes and pedestrians) by the Westside Trail. RTP 11210	ODOT	THPRD	$4,000,000
5	TV Hwy	Fill gaps in sidewalks and add landscape buffer along TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$4,700,000
31	165th Ave. at TV Hwy Intersection	Improve pedestrian crossing of TV Hwy.	ODOT	Washington County	$30,000
36	142nd Ave. at TV Hwy Intersection	Improve pedestrian crossing of TV Hwy.	ODOT	Washington County	$37,500
10662	155th Avenue (Davis Rd. to Beverly Beach Ct.)	Construct sidewalks. RTP 10662	City of Beaverton		$1,800,000
35	TV Hwy and Murray Boulevard (south side)	Improve bus stop	TriMet	ODOT	$7,250
37	TV Hwy and Hocken Avenue (south side)	Improve bus stop	TriMet	ODOT	$7,250
11036	Merlo Fuel / Service House Replacement	Over-due replacement, creates new entrance. RTP 11036	TriMet		$6,411,300
Not Mapped	TV Hwy	More detailed study to determine long-term transit solutions for TV Hwy	Metro	ODOT TriMet	$400,000 - $1,000,000
Not Mapped	TVCP Project Area	Improve existing #57 bus service	TriMet		$2,200,000
4	TV Hwy	Complete bike lanes on TV Hwy	ODOT	Washington County City of Hillsboro City of Beaverton	$4,400,000
13	TVCP Project Area	Develop continuous East-West parallel bike routes	Washington County	City of Hillsboro City of Beaverton	$2,200,000
30	170th at TV Hwy Intersection	Improve bike crossing of TV Hwy	ODOT	Washington County	$5,000
34	Murray Ave. at TV Hwy Intersection	Improve bike crossing of TV Hwy	ODOT	Washington County	$5,000
10664	Watson Ave. (Hall Blvd. to Farmington Rd.)	Construct bike lanes. RTP 10664	City of Beaverton		$4,500,000
10668	Farmington Rd.(Hwy 217 to Hocken Ave.)	Construct bike lanes. RTP 10668	City of Beaverton		$12,600,000
10665	6th Ave. (Murray Blvd. to Erickson Ave.)	Construct bike lanes. RTP 10665	City of Beaverton		$3,600,000
10667	155th Ave. (Davis Rd. and Weird Rd.)	Construct bike lanes in gaps. RTP 10667	City of Beaverton		$5,400,000
55	SW Millikan Way and TV Hwy	Network Changes	ODOT	City of Beaverton	$4,000,000
Not Mapped	SW Hocken Avenue and TV Hwy	Full signal rebuild or upgrade heads (dependend on field review). Potential ODOT Fix-it project.	ODOT		$700,000
Not Mapped	TVCP Project Area	Public community rail safety education	ODOT		NA



Some improvements extend outside of the area shown on maps. These improvements connect with the larger regional multimodal system in the project area.

TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

WASHINGTON COUNTY OREGON

CITY OF HILLSBORO

DAVID EVANS AND ASSOCIATES INC.

North

0 400 800 Feet

Legend

- Railroad Corridor
- TriMet Bus Route Number and Bus Stop
- Railroad Crossing

Trip Attractions
- Schools
- Retail Centers
- Employment Centers

Generalized Zoning
- Commercial
- Future Urban Develop.
- Industrial
- Multi-Family
- Mixed-Use Residential
- Parks & Open Spaces
- Rural
- Single Family

- Existing Signal (Implement Signal Timing)

Environmental Justice
- Significant Non-English-Speaking Population[1]
- Significant Low-Income Population[2]

Intersection Improvements
- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Motor Vehicle Facilities (Near Term)

Bus Stop Improvements
- Transit Facilities (Near Term)

Street/Trail Improvements
- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Multi-Modal Facilities (Near Term)

Transit Improvements
- Transit Facilities(Near Term)

Local RTP Financially Constrained Projects (Recommended)
- Multi-Modal Facilities (Near Term)

Federal RTP Financially Constrained Projects (Recommended)
- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Multi-Modal Facilities (Near Term)
- Motor Vehicle/Freight Facilities (Near Term)

Note: This figure presents a zoomed-in view around TV Hwy itself. For the whole-project area view see Figure 3.

Segment D

Recommended Near Term Actions

Figure 7

DRAFT TV Highway Corridor Plan

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The TVCP consists of proposed near term (0 to 15 years) actions that could likely be funded to address the most critical current needs. In addition, this document identifies actions to meet the TVCP goals and objectives (Table 1) that are categorized as:

- Opportunistic (as funding is available): Actions that could be advanced within or beyond the next 15 years, but would require funding that has not been identified.
- Beyond the TVCP (15 years and beyond): Actions that need to be studied further based on near term system performance monitoring.

The following chart (Figure 8) shows the relationship between the TVCP Goals and the near term action items.

NEAR TERM ACTIONS

The proposed improvements described in this section and listed in Tables 2 through 5 will address critical existing needs, including multimodal system completeness and safety, and can reasonably be expected to be built in the next 15 years with a strong commitment from one or more of the partner agencies that have jurisdiction over subject transportation facilities. The chart on the following page shows the relation between the proposed near term actions and the TVCP goals.

IMPROVE BUS STOPS ALONG TV HWY

Based on the existing stop amenities and ridership levels, the following bus stops in Segments A through D are recommended to receive capital improvements such as concrete landing pads, benches, shelters, and where appropriate and feasible, eastbound (south side) bus pullouts:

- TV Hwy and SE 24th Avenue (south side)
- TV Hwy and SE 40th Avenue (south side)
- TV Hwy and SE 192nd Avenue (south side)
- TV Hwy and SW 185th Avenue (south side)
- TV Hwy and SW 178th Avenue
- TV Hwy and Murray Boulevard (south side)
- TV Hwy and Hocken Avenue (south side)

IMPROVE EXISTING BUS SERVICE FOR THE #57 BUS ROUTE

More frequent bus service may attract additional riders and allow for the movement of more people through the corridor. This recommended action would restore bus service on TV Hwy to run more frequently, especially at peak hours. This action, in combination with other functional improvements recommended (such as the implementation of Transit Signal Priority and/or the addition of bus pull-outs), may decrease the overall travel time for riders. Express bus service should also be considered for the #57, at least at peak commute hours.

Figure 8. TVCP Goals – Near Term Action Items

Near Term Action Items (See segment maps and corresponding tables for specific numbered actions)	TVCP Goals								
	1. Improve mobility for multimodal travel through and within the TVCP Project Area	2. Enhance connectivity and accessibility to key destinations within the TVCP Project Area for pedestrians, bicyclists, transit, automobile, and freight users	3. Enhance safety for all users and modes along and across TV Hwy	4. Strengthen and support economic vitality and well-being	5. Improve the visual appearance of TV Hwy	6. Promote environmental stewardship	7. Reduce per person and/or overall vehicle miles traveled (VMT) in the TVCP Project Area	8. Demonstrate fiscal and financial responsibility	9. Be consistent with state and regional comprehensive strategies to reduce greenhouse gas (GHG) emissions
Improve bus stops along TV Hwy (#9, 10, 22, 24, 35, 37)		●	●	●	●		●	●	●
Improve existing bus service for the #57 bus route (not mapped)	●	●		●			●	●	●
Add street lighting on TV Hwy (not mapped)	●	●	●	●	●		●	●	●
Improve TV Hwy pedestrian crossings (#1, 3, 14, 23, 25, 28, 31, 36)	●	●	●	●			●	●	●
Complete planning and conceptual design for a multi-use path on south side of TV Hwy (#40)	●	●	●	●	●		●	●	●
Fill gaps in sidewalks and add landscape buffer along TV Hwy (#5)	●	●	●	●	●	●	●	●	●
Add directional wayfinding signs (not mapped)	●	●		●			●	●	●
Complete bike lanes on TV Hwy (#4)	●	●	●	●		●	●	●	●
Improve bike crossings of TV Hwy (#1, 3, 14, 15, 18, 23, 25, 28, 30, 34)	●	●	●	●		●	●	●	●
Complete detailed study to determine High Capacity Transit solutions for TV Hwy (not mapped)	●	●		●		●	●	●	●
Public community rail safety education (not mapped)		●	●	●				●	●
Support and promote employer incentive programs to reduce driving (not mapped)		●		●		●	●	●	●
Improve signal timing, Transit Prioritization, and traffic operations monitoring	●	●		●				●	●
Improve operations at signalized intersections along TV Hwy (Multiple Projects)	●	●	●	●				●	●
Apply targets and monitor corridor (not mapped)	●	●		●				●	●
Develop continuous east-west parallel bike routes north and south of TV Hwy (#12)	●	●		●				●	●

ADD STREET LIGHTING ON TV HWY

Street lighting exists only on the very northwest end of the TVCP Project Area until 11th Street, at which point the level of lighting drops on the south side of the street, while lighting on the north side disappears east of Minter Bridge Road. TV Hwy lacks lighting directed to the street through almost the entire TVCP Project Area, except at major signalized intersections, near private properties (strip commercial retailers, auto dealers, fast food, etc.), and at some of the connecting road approaches that have lights directed at the north-south road intersections.

A lack of lighting on some sections of TV Hwy makes it difficult to clearly see pedestrians, bicyclists, and vehicles at night. The proposed addition of human scale street lighting to improve safety for pedestrians along TV Hwy would increase visibility and reduce potential conflicts to enhance safety for all users. The greatest benefits can be realized at poorly lit, unsignalized intersections, pedestrian crossings, and bus stops (particularly those on the south side of the highway).[9]

The four Major Streets Transportation Improvement Program (MSTIP) 3d projects[10] (slated to be completed between 2013 and 2018) that include lighting improvements are:

- Baseline Road (231st Avenue to Brookwood Avenue, Segment B) (MSTIP project 18)
- 198th Avenue (Farmington to TV Hwy, Segment C) (MSTIP project 28)
- Farmington Road (Murray to Hocken, Segment D) (MSTIP projects 2 and 20)

IMPROVE TV HWY PEDESTRIAN CROSSINGS

Adding safe, new or enhanced pedestrian and bicyclist crossings at targeted locations may reduce potential conflicts with motorists. Enhanced crossings typically feature some combination of a marked crosswalk, median refuge island, curb extensions, rapid flash beacon, traffic signal, and warning signage, as appropriate for the location. Signalized pedestrian crossing improvements may be coordinated with the interconnected traffic signal and transit priority signaling controls for the TV Hwy corridor to not only protect highway vehicular mobility, but to minimize the probability of rear-end accidents by minimizing unanticipated stops in east-west travel. The following locations of pedestrian crossing improvements have been evaluated based on the need for access management, transit stop locations, property access, and safety:

Segment A

- TV Hwy at 13th Avenue
- TV Hwy at 40th Avenue
- TV Hwy between 44th Avenue and 45th Avenue[11]

Segment B

- TV Hwy at Imlay Avenue

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[9] *Exploration of lighting fixture types in unincorporated Washington County should be coordinated with the Aloha-Reedville streetscape planning process.*

[10] *MSTIP projects were reviewed through the Washington County Coordinating Committee and approved by the Board of Commissioners to be completed over the next five years to improve safety, remove bottlenecks, and address multiple transportation demands (cars, trucks, bikes, pedestrians, transit).*

[11] *Potential ODOT Fix-it project (2016-2018).*

Segment C

- TV Hwy at 192nd Avenue
- TV Hwy at 185th Avenue
- TV Hwy at 174th Avenue

Segment D

- TV Hwy at 165th Avenue
- TV Hwy at 142nd Avenue

An additional improvement for pedestrians walking along TV Hwy could include automated pedestrian crossing signals that do not require manual activation. This feature would create a more convenient and efficient travel experience for people who walk or use mobility devices to reach bus stops and other destinations along TV Hwy.

COMPLETE PLANNING AND CONCEPTUAL DESIGN FOR A MULTI-USE PATH ON SOUTH SIDE OF TV HWY ("TV HWY TRAIL")

A multi-use path along the south side of TV Hwy would greatly improve the user experience and safety for pedestrians, bicyclists, and transit riders. This path would provide a low-stress connection to other bike routes, sidewalk networks, and neighborhoods within the TVCP Project Area. Special attention must be given to points where the bicycle lanes or separated pathway would interact with roadways and driveways. Because of the breadth of the project and its potential to dramatically improve the streetscape along TV Hwy, the PMT recommends beginning the development of this project in the short term, but with an understanding that it may take many years to complete.

FILL GAPS IN SIDEWALKS AND ADD LANDSCAPE BUFFER ALONG TV HWY

Completing the pedestrian network along TV Hwy and widening existing sidewalks to a minimum of 6 feet wide, consistent with the Metro Regional Street and Pedestrian Corridor designations, is recommended in the near term to improve safety and access to transit along TV Hwy. Additionally, a planter strip will be provided between the bike lanes and sidewalk along TV Hwy to improve the aesthetic environment in the corridor. Sidewalks along the south side of TV Hwy should be strategically developed in conjunction with the multi-use path that is recommended.

ADD DIRECTIONAL WAYFINDING SIGNS

Wayfinding signage along TV Hwy and connecting streets will direct pedestrians and bicyclists to transit facilities, schools, parks, and other community attractions to strengthen the connectivity of the active transportation network and help users find safe crossings of TV Hwy and marked low-traffic streets that are designed to accommodate cyclists (see "Develop continuous east-west parallel bike routes north and south of TV Hwy" in the "Beyond the TVCP" section on the next page).

COMPLETE BIKE LANES ON TV HWY

The existing narrow and discontinuous bike lanes limit the use of bicycles as a safe and viable travel mode on TV Hwy, while forcing bicyclists to ride on or near the edge of the outside vehicle travel lane. Improved bike lanes would clearly designate a usable lane for bicyclists on the roadway. Proposed locations of these improved facilities are shown on the four segment maps (Figures 4 through 7), including the following portions of TV Hwy:

- Between 13th Avenue and Minter Bridge Road
- Between 192nd Avenue and 182nd Avenue
- Between 153rd Drive and 139th Avenue
- Between Tualaway Avenue and Cedar Hills Boulevard

IMPROVE BIKE CROSSINGS OF TV HWY

Green pavement treatment, bike lane extension, shared lane markings, and other bike enhancements should be considered for the following intersections along TV Hwy to provide safer transitions through intersections for bikes. Effective bike boxes require bicyclist and driver education, including public service announcements and clear instructional signage for cyclists and drivers alike. The following intersections along TV Hwy were chosen based on community input, existing deficiencies, connections to the bike network, and crash data.

Segment A
- 13th Avenue
- 40th Avenue

Segment B
- Brookwood Avenue
- Imlay Avenue
- 209th Avenue

Segment C
- 192nd Avenue
- 185th Avenue
- 174th Avenue

Segment D
- 170th Avenue
- Murray Boulevard

DEVELOP CONTINUOUS EAST-WEST PARALLEL BIKE ROUTES NORTH AND SOUTH OF TV HWY

To complement RTP and MSTIP projects, continuous east-to-west bike routes that parallel TV Hwy are recommended. The Washington County Transportation System Plan (TSP), Washington County Neighborhood Bikeways Study, and the Regional Active Transportation Plan provide opportunities to advance this concept.

North of TV Hwy, bike facilities on Brookwood Avenue and 170th Avenue (Segments B and C) could be linked to create a more continuous bicycle route off TV Hwy. South of TV Hwy, the best parallel route is on Blanton Street between 209th and 160th Avenues (including a slight jog north on 198th Avenue and south on 185th Avenue).[12] Exact routing of east-west parallel bike routes will be determined through Washington County and City of Hillsboro planning efforts.

[12] *South of TV Hwy, there is a large gap of undeveloped land between SW 229th Avenue and SW 209th Avenue that prohibits connectivity off TV Hwy. The Alexander Street extension between 229th and 209th Avenues at Blanton Street is proposed as a not financially constrained project in the RTP. This project would include a new three-lane road with bike lanes and sidewalks to*

COMPLETE DETAILED STUDY TO DETERMINE HIGH CAPACITY TRANSIT SOLUTIONS FOR TV HWY

The RTP identifies TV Hwy as a high capacity transit corridor. A thorough and detailed transit alternative analysis study would determine the preferred location (e.g., transit on or adjacent to TV Hwy) and most viable transit mode that could be developed further and eventually implemented (e.g., bus rapid transit (BRT), express bus service, light rail transit (LRT), streetcar, or commuter rail) to most effectively serve future growth and potential transit users. Additionally, this study may explore queue-jumps or the viability of a Business Access Turn (BAT) Lane in appropriate locations. This study could be completed in combination with further planning and development of the multi-use path (the TV Hwy Trail) proposed along the south side of TV Hwy.

PUBLIC COMMUNITY RAIL SAFETY EDUCATION

Promoting and integrating public rail safety education ("Operation Lifesaver"), particularly targeted at school-aged children within the TVCP vicinity, is an effective way of increasing community awareness of safety issues. The primary immediate and sustained benefit of implementing this program through schools in the TVCP vicinity will be reduced exposure to freight trains by people who may otherwise trespass across the Portland & Western Railroad (PNWR) track, or stop their vehicle within a marked rail crossing.

SUPPORT AND PROMOTE EMPLOYER INCENTIVE PROGRAMS TO REDUCE DRIVING

The PMT recommends expanding upon current employer-based commute trip reduction programs to reduce travel by motorists (particularly SOVs). The program may apply to: purchase of transit passes for riders, vehicles for vanpooling or carpooling, bicycles for commuting, and equipment for transit shelters or bicycle storage. The Westside Transportation Alliance will be a key partner in implementing these incentive programs.

IMPROVE SIGNAL TIMING, TRANSIT PRIORITIZATION, AND TRAFFIC OPERATIONS MONITORING

Adjusting the timing at signalized intersections in the TVCP Project Area to optimize traffic operations will improve travel times. Upgrading signal controllers to be compatible with ODOT hardware while monitoring the system for opportunities to further improve upon signal timing should be considered as funding becomes available. Options include:

- **Signal prioritization for transit** – The addition of Transit Signal Priority at signalized intersections on TV Hwy would improve transit travel times along TV Hwy by detecting when a transit vehicle is approaching a signalized intersection and altering the intersection signal timing to provide additional green time to the transit vehicle movement. Transit Signal Priority allows busses to minimize delay at traffic signals and decreases the overall travel time for riders.

- **Adaptive signal control ("smart signals" that adjust timing to congestion levels)** is an advanced form of signal optimization that allows traffic signals to adjust signal timing in real time as traffic volumes change. Adaptive systems also communicate traffic volume and signal timing

provide corridor capacity for TV Hwy. This gap could also be addressed by constructing a multi-use path along the south side of the railroad tracks in the Old Hillsboro Highway ROW (exact location to be determined upon further study).

information between signals to improve overall corridor traffic flow. TV Hwy and other arterial corridors such as 185th Avenue are good candidates for adaptive signal control. Adaptive signal control is best implemented on a corridor or segment level and is less effective if implemented at individual intersections. All segments of TV Hwy could potentially benefit from adaptive signal control, including the following operational benefits:

- Reducing stops by 60 to 90 percent
- Reducing fuel consumption by up to 25 percent
- Reducing crashes by up to 30 percent

IMPROVE OPERATIONS AT SIGNALIZED INTERSECTIONS ALONG TV HWY

In accordance with ODOT's Analysis Procedure Manual (APM), future year analysis of signalized intersections should include optimization of cycle lengths and phase splits "to meet an ideal level of service, queuing and/or volume to capacity ratio for a non-coordinated traffic signal intersection." For signalized intersections in a coordinated system, optimization of cycle lengths and phase splits should be considered, while keeping the integrity of signal progression (bandwidth and intersection offsets). For this project, optimization of signal timing and bandwidth was performed throughout the network at each study area intersection.

Based on the year 2035 Base Case Traffic Analysis for the TVCP, seven intersections are expected to fail to meet the applicable mobility thresholds in either the AM and/or PM peak hour. Table 6 lists the possible improvements for six of the seven intersections in the near term to meet the operational standard (v/c ratio of 0.99) for motorists, based on a traffic operational analysis of future conditions along TV Hwy using the Metro 2035 travel demand model. The possible improvements in Table 6 will meet operational standards but may not maintain traffic operations (travel time, queuing, and delay) at the levels they are today. Additional coordination will be needed with ODOT, Washington County, and the Cities of Hillsboro and Beaverton to determine the most appropriate and cost-effective improvements, along with potential future adoption and application of alternative mobility targets and use of other multimodal transportation performance measures to monitor multimodal transportation system performance within the TVCP Project Area.

Now and moving forward, intersection improvements focused primarily on safety (such as making turn movements protected) that would provide needed operational function are recommended (see Table 6). These safety upgrades are consistent with ODOT's Road Departure Initiative, which is a systematic approach involving the deployment of large numbers of relatively low-cost, cost-effective countermeasures on targeted segments of road with a history of roadway departure crashes. The following improvements are recommended in addition to those detailed in the RTP financially constrained list of projects. These solutions are conceptual mitigations that are to improve, not solve, all forecast deficiencies, and would need further analysis and refinement during preliminary engineering to be programmed for implementation. In the near term, ODOT, the City of Hillsboro, and Washington County will coordinate on a regular basis to monitor and adjust, as necessary, signal timing to yield least overall system delay for TV Hwy and the intersecting north-south routes along the corridor.

Table 6. Recommended Near Term Intersection Modifications to Address Safety and Mobility

Intersection	Actions to Address Existing Mobility Standard
Cornelius Pass Road	• Protected left turns in all directions • Add eastbound and westbound right-turn lanes • Provide dual left-turn lanes on all approaches •
SW 209th Ave & TV Hwy	• Protected left turns in eastbound and westbound directions • Change lane configurations from dual NBL, NBTR to NBL, NBT, NBR* • Make northbound and southbound left turns protective/permissive (flashing yellow)
SW 198th Ave & TV Hwy	• Add dual westbound left-turn lane • Add southbound right-turn lane
SW 185th Ave & TV Hwy	• Add dual left-turn lanes in all directions
SW Millikan Way & TV Hwy	• See "Network Changes"
SW Murray Blvd & TV Hwy	• Add right-turn lane in eastbound direction

*NBL = Northbound Left, NBTR = Northbound Through and Right, NBT = Northbound Through, NBR = Northbound Right

The following table includes all locations where flashing yellow left-turn arrows (protected/permissive) will be installed.

Table 7. Recommended Near Term Left-Turn Signal Improvements

Intersection	Description of Improved Left-Turn Signals
OR 8 (SE 10th Avenue) at SE Walnut Street	For traffic turning left from SE 10th Avenue (OR 8) northbound or southbound onto SE Walnut Street.
OR 8 (SE 10th Avenue) at SE Maple Street	For traffic turning left from SE 10th Avenue (OR 8) northbound or southbound onto SE Maple Street.
TV Hwy at Shute Park Plaza/SE 11th Avenue	For traffic turning left from TV Hwy eastbound or westbound onto SE 11th Avenue or the Shute Park Plaza entrance.
TV Hwy at SE River Road/SE 13th Avenue	For traffic turning left from TV Hwy eastbound or westbound onto SE River Road/SE 13th Avenue.
TV Hwy at SE Minter Bridge Road/SE Cypress Street	For traffic turning left from TV Hwy eastbound or westbound onto SE Minter Bridge Road/SE Cypress Street.
TV Hwy at Sunset Esplanade West entrance	For traffic turning left from TV Hwy eastbound onto the Sunset Esplanade West entrance.
TV Hwy at SE 24th Avenue/Sunset Esplanade East	For traffic turning left from TV Hwy eastbound or westbound onto SE 24th Avenue/Sunset Esplanade East.
TV Hwy at SE Brookwood Avenue/SW Witch Hazel Road	For traffic turning left from TV Hwy eastbound or westbound onto SE Brookwood Avenue/SW Witch Hazel Road.
TV Hwy at SW 234th Avenue/SE Century Boulevard	For traffic turning left from TV Hwy eastbound or westbound onto SW 234th Avenue/SE Century Boulevard.
TV Hwy at SW 229th Avenue/SE 67th Avenue	For traffic turning left from TV Hwy eastbound or westbound onto SW 229th Avenue/SE 67th Avenue.
TV Hwy at SW Cornelius Pass Road	Protected left turns in all directions.
TV Hwy at SW 205th Avenue/Intel	For traffic turning left from TV Hwy eastbound or westbound onto SW 205th Avenue/Intel.
TV Hwy at SW 198th Avenue	For traffic turning left from TV Hwy eastbound or westbound onto SW 198th Avenue.
TV Hwy at SW 185th Avenue	For traffic turning left from SW 185th Avenue northbound or southbound onto TV Hwy.
TV Hwy at SW 160th Avenue	For traffic turning left from all four directions of this intersection.
TV Hwy at SW 153rd Drive	For traffic turning left from TV Hwy eastbound onto SW 153rd Drive.
SW Canyon Road/TV Hwy at SW Hocken Avenue	For traffic turning left from SW Canyon Road/TV Highway eastbound or westbound onto SW Hocken Avenue.
SW Farmington Road at SW 185th Avenue	For traffic turning left from SW 185th Avenue northbound and southbound onto SW Farmington Road (OR 10).

Source:
ODOT Google Map: https://maps.google.com/maps/ms?msid=205435396980096349049.0004c890ef4f9c0ea6451&msa=0

APPLY TARGETS AND MONITOR CORRIDOR PERFORMANCE

After careful consideration of options and as part of the overall TVCP adaptive management strategy and consistent with goals and objectives, the PMT recommends the use of measures listed below to incrementally monitor multimodal transportation system performance within the project area. The PMT does not recommend an alternate mobility standard for TV Hwy at this time.

These performance measures would apply to transportation facilities under ODOT and local (Washington County, and the cities of Hillsboro and Beaverton) jurisdictions, as well as TriMet-operated transit service. These measures may be used to monitor performance of the TVCP within the near term, and to evaluate future land use plan amendments.

The following corridor-wide performance measures are recommended for monitoring the Tualatin-Valley corridor to better understand and manage corridor travel performance over time. These measures should be used to support, not hinder, the achievement of planned development and community policy objectives. These performance measures are consistent with the RTP System Monitoring Performance Measures and will be tracked as part of Metro's federally required Congestion Management Process reporting. These measures would address mobility, reliability, and safety for active transportation and transit operations, and motor vehicles, and would consist of:

- Vehicle Miles Traveled (VMT) per capita, based on Metro's regional travel demand model. Reducing VMT/capita is a regional performance target.
- Duration of congestion (i.e., number of hours exceeding 0.99 volume-to-capacity, or v/c ratio) when continuous count data becomes available.
- Hours of delay for all vehicles (including trucks and transit), measured for PM peak and midday using operational analysis based on technology to be integrated into enhanced and interconnected signals along TV Hwy. These are regional performance targets.
- PM peak travel time for automobiles and transit using the same measure and time period, because the comparative travel time affects the use of transit.
- Transit ridership (based on total weekday ons and offs at transit stops on the #57 and other major transit routes within the TVCP Project Area).
- 85 percent travel time reliability for transit and automobiles.
- Bicycle and Pedestrian System completeness based on the portion (measured in length of sidewalks, bike lanes, and paths/trails) of non-motorized improvements completed compared to those planned in the TVCP Project Area.
- Bicycle counts on TV Hwy.
- Frequency and severity of collisions for all modes.

Immediate application of the measures listed above to evaluate the performance of the recommended actions incorporated into the plan is not recommended, because sufficient data is not available to effectively evaluate the performance of the near term proposed actions within the time period that they are recommended. Furthermore, proposed actions (e.g., adding active transportation enhancements) are not suited to being analyzed through current modeling applications.

The PMT does not propose modifying the current mobility standard for TV Hwy (0.99 v/c ratio), nor does the PMT recommend specific deficiency thresholds or standards for the measures listed above, because the standards or thresholds should be based on actual performance in the corridor. The PMT recommends that when more reliable data is available to monitor performance, ODOT and the partner jurisdictions in the TV Hwy corridor develop and adopt such thresholds or standards, both for monitoring performance over time and for evaluating land use plan amendments.

OPPORTUNISTIC ACTIONS

Understanding that funding opportunities (whether public funding or public funding in combination with private sources) may arise in the near term or beyond the next 15 years to pay for transportation improvements within the TVCP Project Area, this section includes projects that are important but whose implementation will be dependent on what funding is leveraged in the future. The recommendations discussed below include projects for partner agencies in the TVCP Project Area to work towards to meet the goals and objectives of the TVCP, while attempting to:

- Encourage private contributions by developers to implement the near term improvements, including reserving ROW for future transportation improvements *(City of Hillsboro, City of Beaverton, Washington County).*

- Acquire the ROW to develop a westbound BAT lane as redevelopment opportunities arise on TV Hwy. The City of Hillsboro may also require all half-street improvements be constructed to include the set-back curb, planter strip, and sidewalk improvement to create an amenable environment for future transit solutions on TV Hwy. This redevelopment should be consistent with ODOT standards, including OR 366 *(The City of Hillsboro, Washington County, consulting with partners).*[13]

- As projects arise from the Enhance and Fix-It Categories,[14] examine whether opportunities are available to use other funds to leverage this funding (e.g., safety) *(ODOT, consulting with partners).*

- As land use and transportation system conditions change and near term improvements are completed, consider the opportunity to update this adaptive corridor management strategy *(all partners).*

- Improve existing north-south routes for all modes to reduce travel demand on TV Hwy and congestion at intersections. Improvements to roadways such as Brookwood Avenue, Century Boulevard, Cornelius Pass Road, 209th Avenue, 198th Avenue, 185th Avenue, and 170th Avenue would provide the greatest benefit to the overall transportation system.[15] Improvements on 198th Avenue south of TV Hwy are scheduled in the next five years through Washington County's Major Streets Transportation Improvement Program. The other three corridors will require a more opportunistic approach, including working with developers of South Hillsboro to help improve 209th Avenue *(City of Hillsboro, City of Beaverton, Washington County).*

- Improve east-west connectivity (such as those proposed in the upcoming South Hillsboro UGB development mitigation) in addition to the near term actions proposed in South Hillsboro such as the Kinnaman and Rosa Road extensions *(City of Hillsboro, City of Beaverton, Washington County).*

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[13] *Chapter 366 of the Oregon State Highways and State Highway Fund.*

[14] *ODOT has defined projected revenue for 2015-2018 and placed funds into either a "Fix-It" category or an "Enhance" category. The "Fix-It" category includes activities that fix or preserve the transportation system, while the "Enhance" category includes projects that enhance, expand, or improve the transportation system. Fix-It projects may include operations, pavement preservation, state bridges, signs/signals, landslides, rail crossings, and safety programs. The "Enhance" projects may include bike/pedestrian facilities, modernization, protective ROW purchases, transit capital purchases, scenic byways, and transportation alternatives.*

[15] *Two Washington County Minor Betterment Candidate Projects (one for a pedestrian path to the west of 185th Avenue from Broad Oak Drive to Farmington Road and another to construct a bike lane along Murray Boulevard between Farmington Road and TV Hwy) did not make the October 2012 consideration round. There are currently no candidate Minor Betterment projects within the TVCP Project Area.*

- Complete the bicycle and pedestrian system in the TVCP Project Area to increase connectivity and access.

- Examine transit service for enhancements and improvements in the near term improvements list to leverage added service or other capital enhancements. TriMet has submitted two Statewide Transportaton Improvement Program (STIP) applications (Highway 8 Corridor Safety and Access to Transit) for improved safety, active transportation, access to transit and transit operations by improving bus stops, constructing landing pads, enhancing crossings, and installing signal priority on Cornell Road, Evergreen Parkway, and 229th Avenue, and on TV Hwy between 110th Avenue in Beaverton and SW 209th Avenue in Hillsboro. Specifically, for the first STIP application, TriMet intends to install concrete landing pads between the sidewalk and curbs at 50 bus stops, rapid flash beacons (RFBs) with striping at 3 non-signalized crossing locations, and transit signal priority at 3 intersections. For the second application (between 110th Avenue and SW 209th Avenue on TV Hwy), the project would build bus stop landing pads and shelters to connect bus stops to sidewalks. RFBs would be installed at non-signalized crossings near bus stops. Signal priority and operational treatments at key intersections would decrease travel times.

REDUCE VEHICLE TURN MOVEMENTS TO/FROM DRIVEWAYS ON TV HWY

Reducing vehicle turn movements would improve safety and mobility of pedestrians, bicyclists, and motorists on TV Hwy. Further access consolidations are recommended in conjunction with other property redevelopment.

Access management is recommended at the following areas due to the high concentration of driveways onto TV Hwy and the high concentrations of bicycle and pedestrian crashes:

Segment A
- Between 24th and 30th Streets
- Between 40th Street and Brookwood Avenue

Segment B
- None

Segment C
- Between 198th and 192nd Avenues
- Between 192nd and 185th Avenues
- Between 185th and 178th Avenues
- Between 178th and 170th Avenues

Segment D
- None

BEYOND THE TVCP (15 YEARS OR MORE)

This section includes future actions that are important to more fully address the TVCP goals and objectives, but whose implementation is anticipated to occur beyond the time horizon of the TVCP. Several of the following recommended actions build upon the planning and analysis work completed in the near term, such as the implementation of the preferred HCT option for TV Hwy or the multi-use path along the south side of TV Hwy. The recommendations discussed below include projects for partner agencies in the TVCP Project Area to work towards to meet the goals and objectives of the TVCP.

IMPLEMENT MULTI-USE PATH ON SOUTH SIDE OF TV HWY ("TV HWY TRAIL")

Based on the planning and development of this project, the TV Hwy Trail may be implemented to improve the user experience and safety for pedestrians, bicyclists, and transit riders. This path would provide a low-stress connection to other bike routes, sidewalk networks, and neighborhoods within the TVCP Project Area.

PROVIDE NEW LOCAL STREETS TO IMPROVE CONNECTIVITY AROUND TV HWY

In concert with access management (i.e., reducing the number of driveways) along TV Hwy, dedicating areas for new connected streets could be implemented with redevelopment of certain areas adjacent to TV Hwy. A connected local street network would provide a more safe, balanced, and integrated transportation network, and would reduce the need for people who are making short local trips to use TV Hwy. While specific improvements will require further refinement and planning, areas to focus on include:

- Rock Creek Road to Brookwood Avenue
- River Road to Minter Bridge Road
- Cornelius Pass Road to 170th Avenue
- Realignment of Blanton Road at 198th and 185th Avenues
- Realignment of Kinnaman Road at 198th Avenue
- Farmington Road to 209th Avenue

COMPLETE REGIONAL TRAILS IN CORRIDOR

Completion of the regional trail system, including the Beaverton Creek, Pearl-Keeler Powerline, Rock Creek, TV Hwy, and Westside trails, will enhance the active transportation networks and livability within the TVCP Project Area. While several RTP projects propose near term trail construction, the trail system will be completed after the completion of the TVCP.

NEW NORTH-SOUTH BUS SERVICE BETWEEN SOUTH HILLSBORO AND SUNSET CORRIDOR

New north-south bus service would connect the communities of South Hillsboro and Aloha-Reedville to the North Hillsboro, Tanasbourne/Amberglen, Bethany, and Sunset Corridor Employment areas, thereby reducing long-distance regional commute trips by SOVs. The City of Hillsboro and TriMet are currently working on a Westside Transit Enhancement Study that is evaluating the benefits of providing north-south bus service. To provide the additional benefit, the north-south transit lines should coordinate arrival times with the MAX line, and reduce or eliminate the need for transfers by bringing users close to large business areas.

COMPLETE LONG-TERM TRANSIT SOLUTION FOR TV HWY

Once a preferred alternative is identified through the transit alternative analysis study recommended as a near term action to determine the preferred location (e.g., transit on or adjacent to TV Hwy) and most viable transit mode that could be developed further (e.g., bus rapid transit (BRT), express bus service, light rail transit (LRT), streetcar, or commuter rail), this proposed action would implement the preferred alternative, in order to most effectively serve future growth and potential transit users. Additionally, this transit alternative analysis study may explore enhanced signal operations for transit or the viability of a Business Access Turn (BAT) Lane in appropriate locations. Implementation of this project should be

completed in development of the multi-use path (the TV Hwy Trail) proposed along the south side of TV Hwy.

IMPROVE SPECIFIC INTERSECTIONS ALONG TV HWY[16]

Continuing upon the recommended safety improvements proposed as near term projects, the following list of actions will maintain adequate operating conditions for motorists, based on a traffic operational analysis of future conditions along TV Hwy using the Metro 2035 travel demand model. These solutions are conceptual mitigations that will need further analysis and refinement during preliminary engineering to be programmed for implementation. While grade separated intersections or interchanges are not included in the 15 year plan, the jurisdictions represented on the TVCP Policy Group recognize that beyond this plan all tools should be considered to maintain acceptable intersection performance to serve future transportation and community needs.

Table 8. Recommended Intersection Improvements to Maintain Mobility (to be completed beyond the TVCP)

Intersection	Action to Address Existing Mobility Standard
SW 185th Ave & TV Hwy	• Add eastbound and westbound right-turn lanes
SW 170th Ave & TV Hwy[17]	• Add dual left-turn lanes in all directions • Add southbound, eastbound and westbound right-turn lanes

ENVIRONMENTAL JUSTICE CONSIDERATIONS

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations of February 11, 1994, requires agencies undertaking federal projects to identify low-income and minority populations; assess whether high and adverse human health or environmental impacts would result from the alternatives; and ensure participation of low-income and minority populations in the transportation decision making process. The Federal Highway Administration (FHWA) defines a disproportionately high and adverse impact on minority and low-income populations as one that:

- Is predominantly borne by a minority population and/or a low-income population; or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

EO 12898 states that agencies must consider whether human health effects, in terms of risks and rates, are significant or above accepted norms.

Therefore, identification of environmental justice (EJ) communities is important to enhance the public involvement process and involve EJ communities early in the planning process, and thus avoid disproportionately high and adverse impacts of transportation projects and programs. Many of the

[16] *Local jurisdictions shall have the ability to determine improvements necessary to maintain intersection performance and a safe, accessible environment for pedestrians and bicyclists.*

[17] *Adding both an eastbound and westbound through lane would meet the PM v/c of 0.99, but this improvement is inconsistent with the arterial classification for TV Hwy. Further monitoring and study of this intersection is needed.*

materials that were part of the TVCP Public Involvement process, which included open houses, were available in Spanish. Additionally, the project website is available for those physically unable to attend project open houses and events.

EJ communities in the TVCP Project Area were mapped using U.S. Census data during the existing conditions phase of the project. Community features such as schools, retail centers, and employment centers were also mapped in the existing conditions phase of the project to identify potential resources to which EJ communities need access. The mapped communities and community features were used in developing the segment maps and are shown on those maps (Figures 3 through 7) to help guide consideration of areas for improvement.

The improvements include safer pedestrian crossings of TV Hwy and a more aesthetically pleasing pedestrian environment, including lighting and landscaping. Moreover, there will be improvements both to accessing transit through better sidewalks, bicycle facilities, and crossing improvements, and to the facilities at the transit stops themselves. In general, the solutions improve the transportation facilities in the study area for pedestrians, bicyclists, and drivers to better serve the surrounding EJ communities while limiting displacements and impacts to the residents and businesses of the community.

Temporary impacts to EJ communities during construction of improvements may occur. A Public Involvement Plan and Construction Best Management Practices (BMPs) can manage and mitigate impacts during construction.

NATURAL ENVIRONMENTAL CONSIDERATIONS

The consideration of the natural environment is at the heart of the TVCP. Each solution was weighed against the project goals, including Goal 6 (to promote environmental stewardship, including improving air and water quality and minimizing impacts to stream corridors, wetlands, and upland habitat). Construction BMPs will be used on the projects recommended as part of the TVCP.

NEXT STEPS AND IMPLEMENTATION

An implementation framework that outlines the potential funding sources and recommended actions by lead and partner agencies was completed in conjunction with the TVCP. This, in combination with TVCP Code and Plan Amendments, will provide policy direction to assist in the implementation of the Plan.

The purpose of identifying implementation actions is to ensure that the TVCP is compatible with relevant adopted regulations, policy objectives, and designations, as well as with those that are being developed. Washington County, the City of Hillsboro, the City of Beaverton, and ODOT will continue to coordinate in evaluating actions, including transportation improvements, amendments to comprehensive plans, Transportation System Plans (TSPs), and development codes that could affect the corridor to ensure that coordination is timely and that actions and improvements are consistent with the defined functions in the corridor.

Some recommended implementation steps are:

- Compare the TVCP for consistency with the provisions, policies, and standards identified as relevant in the TVCP Policy and Plan Guidance Report.
- Identify and adopt amendments, if necessary.
- Washington County: Adopt the TVCP by ordinance into the TSP to guide the management of and improvements to the local road network in the corridor.
- Cities of Hillsboro and Beaverton: Adopt the TVCP as a refinement plan to the TSPs to guide the management of and improvements to the local road network in the corridor.
- Metro: Present TVCP for acceptance by JPACT and Metro Council and process RTP updates as necessary.
- Oregon Transportation Commission (OTC): Adopt the TVCP as a transportation facility plan—an amendment to the OHP, per PLA 01, ODOT Transportation Facility Plan Adoption Process. ODOT will use the TVCP as a guide in formulating future management decisions regarding the state highway facility that connects to the county and city street systems.

The TVCP was approved by the PG at their meeting on February 4, 2013. Following this, the PMT will seek approval of the TVCP through hearings of the Hillsboro and Beaverton City Councils, the Washington County Board of Commissioners, the Metro Council, and the OTC. These hearings have not been scheduled.

TV Highway Corridor Plan
APPENDICES

An adaptive management strategy to address existing and anticipated future multimodal transportation needs in the Tualatin-Valley Highway (TV Hwy) Corridor Area

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by the federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), local government, and the State of Oregon Funds.

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June 2013

APPENDIX A: ALL RECOMMENDED ACTIONS (SEGMENTS A-D)

HILLSBORO

13th

21st

24th

32nd

Brookwood Ave

Patterson

Cypress

Golden

Minter Bridge

River Rd

30th

Drake

45th

Witch Hazel

Alexander

11162

11152

11151

11153

10851

11156

10846

11160

11161

11159

10820

Brookwood Elementary

W L Henry Elementary

Heritage Christian

View Charter

Design treatment to be determined.

Design treatment to be determined.

Exact Alignment to be determined.

Some improvements extend outside of the area shown on maps. These improvements connect with the larger regional multimodal system in the project area.

HILLSBORO

PORTLAND

BEAVERTON

TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

WASHINGTON COUNTY OREGON

CITY OF HILLSBORO

DAVID EVANS AND ASSOCIATES INC.

North

0 400 800

Feet

Legend

Railroad Corridor

TriMet Bus Route Number and Bus Stop

Railroad Crossing

Trip Attractions

Schools

Retail Centers

Employment Centers

Generalized Zoning

Commercial

Future Urban Develop.

Industrial

Multi-Family

Mixed-Use Residential

Parks & Open Spaces

Rural

Single Family

Existing Signal (Implement Signal Timing)

Area for Potential New Local Street Connectivity and Reduced Vehicle Turn Movements Along TV Hwy

Bus Stop Improvements

Transit Facilities (Near Term)

Transit Improvements

Transit Facilities(Near Term)

Intersection Improvements

Bike Facilities (Near Term)

Bike/Ped Facilities (Near Term)

Pedestrian Facilities (Near Term)

Motor Vehicle Facilities (Near Term)

Motor Vehicle Facilities (Longer Term)

Multi-Modal Facilities (Longer Term)

Street/Trail Improvements

Bike Facilities (Near Term)

Bike Facilities (Opportunistic)

Bike Facilities (Longer Term

Pedestrian Facilities (Near Term)

Pedestrian Facilities (Opportunistic)

Bike/Ped Facilities (Near Term)

Bike/Ped Facilities (Longer Term)

Multi-Modal Facilities (Near Term)

RTP Locally Financially Constrained Projects (Recommended)

Multi-Modal Facilities (Near Term)

Multi-Modal Facilities (Longer Term)

Federal RTP Financially Constrained Projects (Recommended)

Bike Facilities (Near Term)

Pedestrian Facilities (Near Term)

Bike/Ped Facilities (Near Term)

Bike/Ped Facilities (Longer Term)

Multi-Modal Facilities (Near Term)

Multi-Modal Facilities (Longer Term)

Motor Vehicle/Freight Facilities (Near Term)

Segment A

Recommended Actions

DRAFT TV Highway Corridor Plan

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Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

APPENDIX A. ALL TVCP RECOMMENDED ACTIONS - SEGMENT A

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

RTP/Map Project Number	Location	Proposed Project	Concept-Level Estimated Cost	Implementation
Not Mapped	TVCP Project Area	Add directional wayfinding signs	NA	Near Term
Not Mapped	TVCP Project Area	Support and promote employer incentive programs to reduce driving	NA	Near Term
Not Mapped	TV Hwy	Add street lighting on TV Hwy	$8,700,000	Near Term
10820	Brookwood/247th (Alexander St. to South UGB)	Widen two lanes with onstreet parking and sidewalks Alexander to Davis; widen to 3 lanes with bike lanes and sidewalks. RTP 10820	$1,700,000	Near Term
1	13th Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy	$1,900,000	Near Term
3	40th Ave. at TV Hwy Intersection	Improve pedestrian and bicyclist crossing of TV Hwy	$300,000	Near Term
40	TV Hwy	Complete planning and conceptual plan for a multi-use path on South side of TV Hwy	$5,000,000	Near Term Planning, Longer Term Implementing
10834	28th Avenue (Main St. to 25th)	Widen to 3 lanes with bike/sidewalks. RTP 10834	$3,750,000	Near Term
10851	Rock Creek Trail	Construct bike/ped trail between River Road and Orchard Park (east of Cornelius Pass Rd.) RTP 10851	$5,520,000	Near Term
11151	Bentley Street (32nd Ave. to Brookwood Ave.)	Construct sidewalks and bike lanes. RTP 11151	$3,000,000	Near Term
11159	Alexander Street (Brookwood (247th) to 56th Ct.)	Widen to provide bike lanes and sidewalks. RTP 11159	$1,000,000	Near Term
11160	Witch Hazel Road (River Rd. to Brookwood [247th])	Widen to provide sidewalks. RTP 11160	$1,000,000	Near Term
11161	Rood Bridge Road (River Rd. to South UGB)	Widen to provide bike lanes and sidewalks. RTP 11161	$2,500,000	Near Term
11162	24th Ave (Maple to Main St.)	Widen to provide bike lanes and sidewalks, bridge over Dawson Creek. RTP 11162	$4,000,000	Near Term
5	TV Hwy	Fill gaps in sidewalks and add landscape buffer along TV Hwy	$4,700,000	Near Term
11142	37th Ave (Main St. and Brodgden Ave)	Widen to provide sidewalks and Bikeway Network signage access to LRT and Fairgrounds. RTP 11142	$1,000,000	Near Term
11152	Cedar Street (32nd Ave. to Brookwood Ave.)	Construct sidewalks. RTP 11152	$1,000,000	Near Term
11160	Witch Hazel Road (River Rd. to Brookwood [247th])	Widen to provide sidewalks. RTP 11160	$1,000,000	Near Term
53	SE 44th Avenue/SE 45th Avenue and TV Hwy	Install Rectangular Rapid Flash Beacon (RRFB). Potential ODOT Fix-it Project	$200,000	Near Term
4	TV Hwy	Complete bike lanes on TV Hwy	$4,400,000	Near Term
13	TVCP Project Area	Develop continuous East-West parallel bike routes	$2,200,000	Near Term
9	SE 24th Avenue and TV Hwy (south side)	Improve bus stop.	$1,800	Near Term
10	SE 40th Avenue and TV Hwy (south side)	Improve bus stop.	$1,800	Near Term
Not Mapped	TV Hwy	More detailed study to determine long-term transit solutions for TV Hwy	$400,000 - $1,000,000	Near Term
Not Mapped	TVCP Project Area	Improve existing #57 bus service	$2,200,000	Near Term
Not Mapped	TVCP Project Area	Public community rail safety education	NA	Near Term
12	TVCP Project Area	Complete bike lanes and sidewalks within TVCP project area.	Various projects	Opportunistic
Not Mapped	TV Hwy	Signal prioritization for transit	$400,000	Opportunistic
11	TV Hwy	Reduce vehicle turn movements to/from driveways on TV Hwy	$1,800,000	Opportunistic
Multiple Projects	TVCP Project Area	Provide new local streets to improve connectivity around TV Hwy	NA	Beyond the TVCP
40	TV Hwy	Implement multi-use path on South side of TV Hwy	NA	Beyond the TVCP
Not Mapped	TVCP Project Area	Improve existing bus service within TVCP project area	NA	Beyond the TVCP

Frances
Golden
Brookwood Ave
Imlay
Century Blvd
Cornelius Pass Rd
Rock
Drake
Witch Hazel
Johnson
Alexander
229th
209th Ave
Design treatment to be determined.
Exact Alignment to be determined.
Some improvements extend outside of the area shown on maps. These improvements connect with the larger regional multimodal system in the project area.
HILLSBORO
PORTLAND
BEAVERTON

Legend

- Railroad Corridor
- TriMet Bus Route Number and Bus Stop
- Railroad Crossing

Trip Attractions

- Schools
- Retail Centers
- Employment Centers

Generalized Zoning

- Commercial
- Future Urban Develop.
- Industrial
- Multi-Family
- Mixed-Use Residential
- Parks & Open Spaces
- Rural
- Single Family

- Existing Signal (Implement Signal Timing)
- Area for Potential New Local Street Connectivity and Reduced Vehicle Turn Movements Along TV Hwy

Bus Stop Improvements

- Transit Facilities (Near Term)

Transit Improvements

- Transit Facilities(Near Term)

Intersection Improvements

- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Motor Vehicle Facilities (Near Term)
- Motor Vehicle Facilities (Longer Term)
- Multi-Modal Facilities (Longer Term)

Street/Trail Improvements

- Bike Facilities (Near Term)
- Bike Facilities (Opportunistic)
- Bike Facilities (Longer Term
- Pedestrian Facilities (Near Term)
- Pedestrian Facilities (Opportunistic)
- Bike/Ped Facilities (Near Term)
- Bike/Ped Facilities (Longer Term)
- Multi-Modal Facilities (Near Term)

RTP Locally Financially Constrained Projects (Recommended)

- Multi-Modal Facilities (Near Term)
- Multi-Modal Facilities (Longer Term)

Federal RTP Financially Constrained Projects (Recommended)

- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Bike/Ped Facilities (Longer Term)
- Multi-Modal Facilities (Near Term)
- Multi-Modal Facilities (Longer Term)
- Motor Vehicle/Freight Facilities (Near Term)

North

0 400 800
Feet

TV HIGHWAY CORRIDOR PLAN
OREGON DEPARTMENT OF TRANSPORTATION
WASHINGTON COUNTY OREGON
CITY OF HILLSBORO
DAVID EVANS AND ASSOCIATES INC.

Segment B

Recommended Actions

DRAFT TV Highway Corridor Plan

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Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

APPENDIX A. ALL TVCP RECOMMENDED ACTIONS - SEGMENT B

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

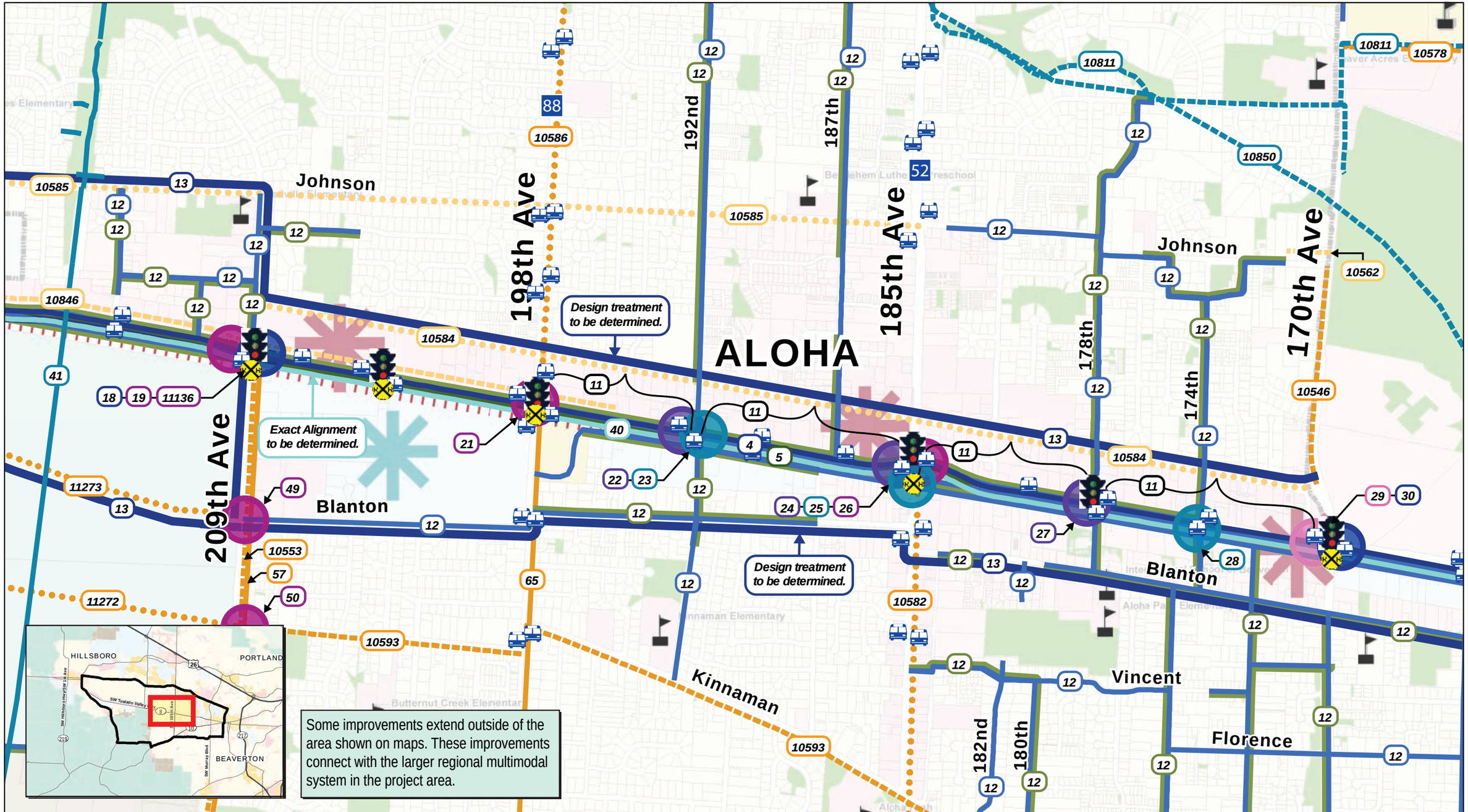
RTP/Map Project Number	Location	Proposed Project	Concept-Level Estimated Cost	Implementation
44	SW Rosa Rd. Extension	Extend Rosa Rd. from 229th to 209th (including bike lanes and sidewalks).	NA	Near Term
57	209th Improvements (TV Hwy to Farmington)	Widen to a 5 lane facility with bike lanes/sidewalks	$27,391,000	Near Term
83	229th Ave. Improvements	Widen to inlcude bike lanes and sidewalks from McInnis to Alexander	$3,276,000	Near Term
MSTIP 18	Baseline Rd. (231st to Brookwood)	Improve to 5 lane with bike/ped facilities, storm drainage, and street lighting. MSTIP 18	$11,300,000	Near Term
10553	209th Improvements (TV Hwy to Farmington)	Widen and realign to three lanes with bike lanes and sidewalks. RTP 10553	$26,517,000	Near Term
10587	Cornelius Pass Rd. (Frances St. to TV Hwy)	Widen to five lanes wth bike lanes and sidewalks. RTP 10587	$11,307,000	Near Term
10818	231st Ave./Century Blvd (Baseline to Lois Rd.)	Build bridge and 3 lanes with bike lanes and sidewalk. RTP 10818	$16,500,000	Near Term
10819	231st Ave./Century Blvd (Baseline to Cornell Rd.)	Widen to three lanes with bike lanes and sidwalks. RTP 10819	$6,800,000	Near Term
10820	Brookwood/247th (Alexander St. to South UGB)	Widen two lanes with onstreet parking and sidewalks (Alexander to Davis); widen to 3 lanes with bike lanes and sidewalks (Davis to South UGB). RTP 10820	$1,700,000	Near Term
10830	Johnson (Cornelius Pass to Century Blvd)	Widen to three lanes with bike lanes and sidewalks. RTP 10830	$8,000,000	Near Term
10838	Davis Road (Brookwood to Century Blvd.)	Extend three lane road with bike lanes/sidewalks. RTP 10838	$2,700,000	Near Term
10839	Century Blvd. (Alexander to South UGB)	Extend three land road with bike lanes/sidewalks from Alexander to South UGB. RTP 10839	$4,000,000	Near Term
10844	Cornelius Pass Road (TV Hwy to Rosa Rd. Extension)	Extend as a 5 lane facility with bike lanes/sidewalks. Add turn lanes at TV Hwy. Local RTP 10844	$45,000,000	Near Term
11137	TV Hwy/Century Blvd Intersection	Add second southbound lane, Add northbound left turn lane, widen rail crossing, add offroad bike lanes on Century from TV Hwy to Alexander. RTP 11137	$1,800,000	Near Term
11155	Drake Street (Imlay Ave. to 67th Ave.)	Widen to provide two or three lanes with bike lanes and sidewalks. RTP 11155	$1,800,000	Near Term
11156	Drake Street (Brookwood Ave to Imlay Ave)	Widen to provide two or three lanes with bike lanes and sidewalks. RTP 11156	$1,500,000	Near Term
11272	Kinnaman Rd. Extension (209th Ave to Century Blvd. Extension)	Construct 3 lane with bike lanes and sidewalks. Local RTP 11272	$7,900,000	Near Term
11273	Alexander St. Extension (229th to 209th at Blanton)	Construct 3 lane with bike lanes and sidewalks. Local RTP 11273	$7,000,000	Near Term
11274	Century Blvd Extension (Area 71 UGB to 229th Ave).	Construct 3 lane with bike lanes and sidewalks. Local RTP 11274	$3,000,000	Near Term
Not Mapped	TVCP Project Area	Add directional wayfinding signs	NA	Near Term
Not Mapped	TVCP Project Area	Support and promote employer incentive programs to reduce driving	NA	Near Term
Not Mapped	TV Hwy	Add street lighting on TV Hwy	$8,700,000	Near Term
14	Imlay Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy	$300,000	Near Term
40	TV Hwy	Complete planning and conceptual plan for a multi-use path on South side of TV Hwy	$5,000,000	Near Term Planning, Longer Term Implementing
11142	37th Ave (Main St. and Brodgden Ave)	Widen to provide sidewalks and Bikeway Network signage access to LRT and Fairgrounds. RTP 11142	$1,000,000	Near Term
11153	Golden Road (Brookwood to Imlay Ave.)	Widen to provide bike lanes and sidewalks. RTP 11153	$2,000,000	Near Term
11157	Imlay Avenue (TV Hwy to Lois St.)	Widen to provide bike lanes and sidewalks. RTP 11157	$2,000,000	Near Term
11159	Alexander Street (Brookwood (247th) to 56th Ct.)	Widen to provide bike lanes and sidewalks. RTP 11159	$1,000,000	Near Term
10851	Rock Creek Trail	Construct bike/ped trail between River Road and Orchard Park (east of Cornelius Pass Rd.) RTP 10851	$5,520,000	Near Term
5	TV Hwy	Fill gaps in sidewalks and add landscape buffer along TV Hwy	$4,700,000	Near Term
4	TV Hwy	Complete bike lanes on TV Hwy	$4,400,000	Near Term
13	TVCP Project Area	Develop continuous East-West parallel bike routes	$2,200,000	Near Term
15	Brookwood Ave at TV Hwy Intersection	Improve bike crossing of TV Hwy	$1,800,000	Near Term
Not Mapped	TV Hwy	More detailed study to determine long-term transit solutions for TV Hwy	$400,000 - $1,000,000	Near Term
Not Mapped	TVCP Project Area	Improve existing #57 bus service	$2,200,000	Near Term
56	Century Blvd.	Improve North-South bus service along Century Blvd.	$5,000,000	Near Term

Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

APPENDIX A. ALL TVCP RECOMMENDED ACTIONS - SEGMENT B

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

17	Cornelius Pass Rd. and TV Hwy Intersection	Add protected northbound left turn signal, add eastbound and westbound right-turn lanes, add dual left-turn lanes on all approaches. Northbound approach would have 2 left, 2 through and 1 right turn lane. Southbound approach would have 2 left, 1 through, and 1 through/right turn lane. New rail crossing.	$7,206,000	Near Term
17	Cornelius Pass Rd. and TV Hwy Intersection	Add eastbound and westbound right-turn lanes	$1,500,000	Near Term
17	Cornelius Pass Rd. and TV Hwy Intersection	Provide dual left-turn lanes on all approaches	$2,200,000	Near Term
19	209th Ave. and TV Hwy Intersection	Modify RTP 11136 lane configuration and signal heads from Dual NBL, NBTR to NBL, NBT, NBR.	$250,000	Near Term
19	209th Ave. and TV Hwy Intersection	Widen and adjust grade for northbound approach. Modify Rail Crossing	$1,200,000	Near Term
19	209th Ave. and TV Hwy Intersection	Make northbound and southbound left turns protective/permissive (flashing yellow)	$100,000	Near Term
45	Imlay Ave. and TV Hwy Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	$400,000	Near Term
46	Johnson St. and Century Blvd. Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	$400,000	Near Term
47	Alexander St. and Century Blvd. Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	$400,000	Near Term
48	Alexander St. and Cornelius Pass Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	$400,000	Near Term
49	Blanton St. and 209th Ave. Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	$400,000	Near Term
50	Kinnaman Rd. and 209th Ave Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	$400,000	Near Term
11136	209th Ave and TV Hwy Intersection	Add eastbound right turn lane, widen crossing for second northbound to westbound left turn lane, add second southbound lane, protected N-S turn phasing. RTP 11136	$3,800,000	Near Term
12	TVCP Project Area	Complete bike lanes and sidewalks within TVCP project area	Various projects	Opportunistic
Not Mapped	TV Hwy	Signal prioritization for transit	$400,000	Opportunistic
40	TV Hwy	Implement multi-use path on South side of TV Hwy	NA	Beyond the TVCP
41	Pearl-Keeler Powerline Trail	Complete the Pearl-Keeler Powerline Trail for pedestrian and bicyclist use.	NA	Beyond the TVCP
Not Mapped	TVCP Project Area	Improve existing bus service within TVCP project area	NA	Beyond the TVCP
10846	TV Hwy (196th Ave to Brookwood)	Expand capacity including access management, bike/sidewalks and intersection improvements. RTP 10846	$42,000,000	Beyond the TVCP
11283	Brookwood (South UGB to River Road)	Extend 3 lanes with sidewalks and bike lanes South UGB to River Rd with culvert crossing Gordon Creek. Local RTP 11283	$13,000,000	Beyond the TVCP
Multiple Projects	TVCP Project Area	Provide new local streets to improve connectivity around TV Hwy	NA	Beyond the TVCP



TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

WASHINGTON COUNTY OREGON

CITY OF HILLSBORO

DAVID EVANS AND ASSOCIATES INC.

North

0 400 800
Feet

Legend

- Railroad Corridor
- TriMet Bus Route Number and Bus Stop
- Railroad Crossing

Trip Attractions

- Schools
- Retail Centers
- Employment Centers

Generalized Zoning

- Commercial
- Future Urban Develop.
- Industrial
- Multi-Family
- Mixed-Use Residential
- Parks & Open Spaces
- Rural
- Single Family

- Existing Signal (Implement Signal Timing)
- Area for Potential New Local Street Connectivity and Reduced Vehicle Turn Movements Along TV Hwy

Bus Stop Improvements

- Transit Facilities (Near Term)

Transit Improvements

- Transit Facilities(Near Term)

Intersection Improvements

- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Motor Vehicle Facilities (Near Term)
- Motor Vehicle Facilities (Longer Term)
- Multi-Modal Facilities (Longer Term)

Street/Trail Improvements

- Bike Facilities (Near Term)
- Bike Facilities (Opportunistic)
- Bike Facilities (Longer Term
- Pedestrian Facilities (Near Term)
- Pedestrian Facilities (Opportunistic)
- Bike/Ped Facilities (Near Term)
- Bike/Ped Facilities (Longer Term)
- Multi-Modal Facilities (Near Term)

RTP Locally Financially Constrained Projects (Recommended)

- Multi-Modal Facilities (Near Term)
- Multi-Modal Facilities (Longer Term)

Federal RTP Financially Constrained Projects (Recommended)

- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Bike/Ped Facilities (Longer Term)
- Multi-Modal Facilities (Near Term)
- Multi-Modal Facilities (Longer Term)
- Motor Vehicle/Freight Facilities (Near Term)

Segment C

Recommended Actions

DRAFT TV Highway Corridor Plan

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Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

APPENDIX A. ALL TVCP RECOMMENDED ACTIONS - SEGMENT C

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

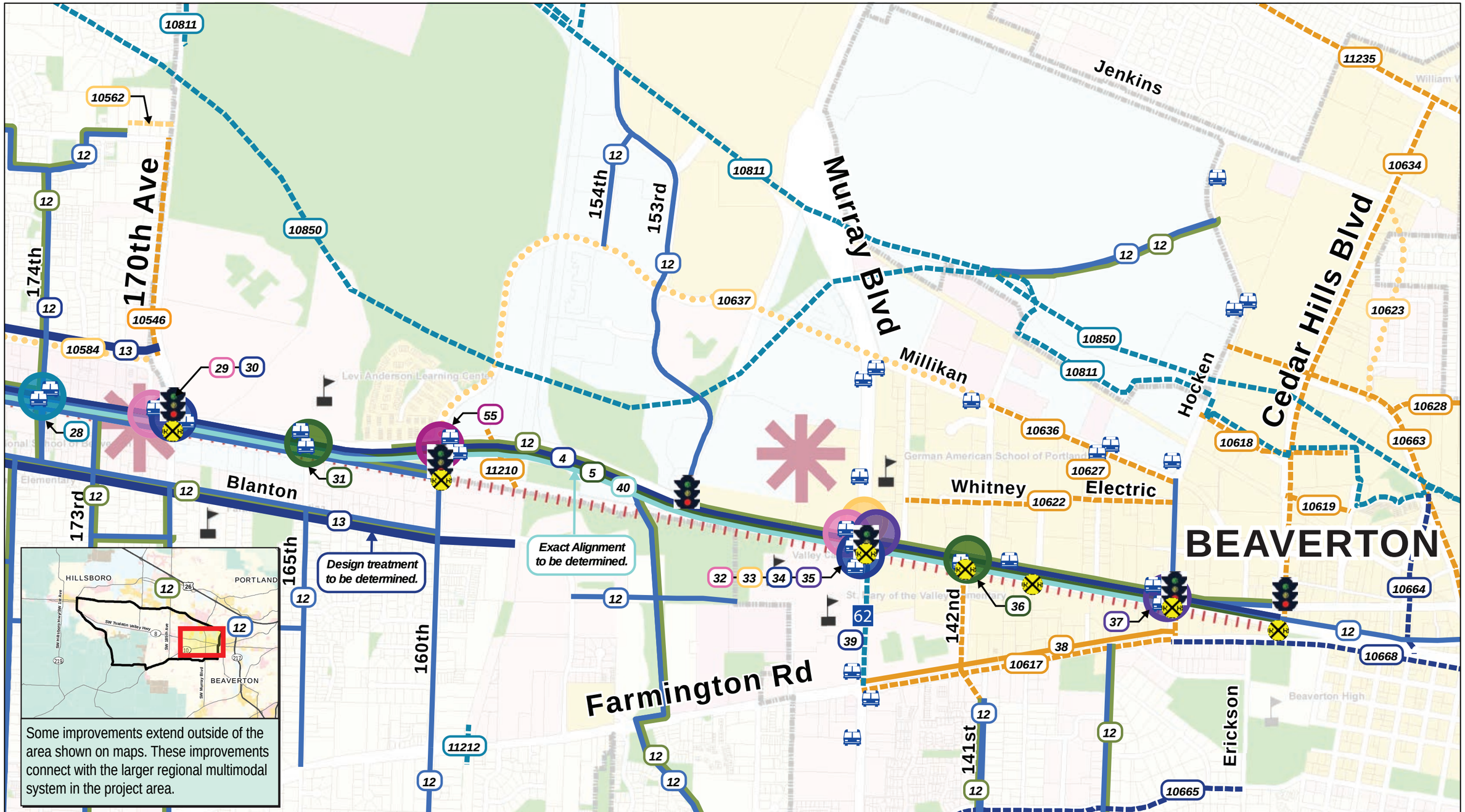
RTP/Map Project Number	Location	Proposed Project	Concept-Level Estimated Cost	Implementation
21	198th Ave (Farmington to TV Hwy)	Revised scope includes 1) Phase of full 3-lane improvement or 2) possible interim safety/capacity spot improvements. Include bike/ped facilities, storm drainage and street lighting as appropriate. MSTIP 28	$14,000,000	Near Term
65	198th Ave (Farmington to TV Hwy)	Revised scope includes 1) Phase of full 3-lane improvement or 2) possible interim safety/capacity spot improvements. Include bike/ped facilities, storm drainage and street lighting as appropriate. MSTIP 28	$27,900,000	Near Term
10553	209th Improvements (TV Hwy to Farmington)	Widen and realign to three lanes with bike lanes and sidewalks. RTP 10553	$26,517,000	Near Term
10560	Farmington Road (170th Ave to 185th Ave)	Widen roadway to five lanes with bike lanes and sidewalks. RTP 10560	$17,676,000	Near Term
10574	Farmington Road (185th to 198th)	Widen from two to three lanes with bike lanes and sidewalks. RTP 10574	$17,326,000	Near Term
10582	185th Ave. Improvements (TV Hwy to Farmington)	Widen to five lanes with bike lanes and sidewalks. Local RTP 10582	$26,435,000	Near Term
10586	198th Ave. Improvements (TV Hwy to Baseline Rd)	Widen to three lanes with bike lanes and sidewalks. Local RTP 10586	$24,194,000	Near Term
10593	Kinnaman Rd. (Farmington Rd. to209th Ave.)	Widen to three lanes with bike lanes and sidewalks. RTP 10593	$24,793,000	Near Term
10604	185th Ave. (Baseline Rd. to Hwy 26)	Install integrated surveillance and management equipment. RTP 10604	$1,095,000	Near Term
11284	Farmington Rd (185th to 198th)	Widen to 5 lanes with bike lanes and sidewalks. Local RTP 11284	$24,000,000	Near Term
11285	Farmington Rd (198th to 209th)	Widen to 5 lanes with bike lanes and sidewalks. Local RTP 11285	$18,000,000	Near Term
Not Mapped	TVCP Project Area	Add directional wayfinding signs	NA	Near Term
Not Mapped	TVCP Project Area	Support and promote employer incentive programs to reduce driving	NA	Near Term
Not Mapped	TV Hwy	Add street lighting on TV Hwy	$8,700,000	Near Term
23	192nd Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy.	$3,000,000	Near Term
25	185th Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy.	$3,000,000	Near Term
28	174th Ave. at TV Hwy Intersection	Improve bike and pedestrian crossing of TV Hwy	$37,500	Near Term
40	TV Hwy	Complete planning and conceptual plan for a multi-use path on South side of TV Hwy	$5,000,000	Near Term Planning, Longer Term Implementing
10810	Westside Trail (Regional)	Design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved between Hwy 26 and THPRD Nature Park. RTP 10810	$4,000,000	Near Term
10811	Beaverton Creek Trail (Regional) between SW 194th Ave and Fanno Creek Trail:	Design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved. RTP 10811	$7,000,000	Near Term
10813	Westside Trail (Farrmington Rd. and Scholls Ferry Rd.)	Design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved. RTP 10813	$4,150,000	Near Term
10850	Beaverton Creek Trail, Bronson Creek Trail	Construct bike/ped trail between Baseline Rd, 185th and Rock Creek Trail. RTP 10850	$1,000,000	Near Term
11158	206th Ave (Baseline to Rock Rd.)	Widen to provide bike lanes and sidewalks. RTP 11158	$3,000,000	Near Term
Not Mapped	178th Avenue (TV Hwy to Johnson)	Build sidewalks and bike lanes up to the crossing at 178th and TV Hwy	Unavailable	Near Term
5	TV Hwy	Fill gaps in sidewalks and add landscape buffer along TV Hwy	$4,700,000	Near Term
4	TV Hwy	Complete bike lanes on TV Hwy	$4,400,000	Near Term
13	TVCP Project Area	Develop continuous East-West parallel bike routes	$2,200,000	Beyond the TVCP
22	SW 192nd Ave and TV Hwy (south side)	Improve bus stop.	$7,250	Near Term
24	TV Hwy and SW 185th Avenue (south side)	Improve bus stop.	$1,850	Near Term
10984	Reconfiguration of Millikan Way Park & Ride	Reconfigure lot in response to lease expiration. RTP 10984	$2,000,000	Near Term
Not Mapped	TV Hwy	More detailed study to determine long-term transit solutions for TV Hwy	$400,000 - $1,000,000	Near Term
Not Mapped	TVCP Project Area	Improve existing #57 bus service	$2,200,000	Near Term

Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

APPENDIX A. ALL TVCP RECOMMENDED ACTIONS - SEGMENT C

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

RTP/Map Project Number	Location	Proposed Project	Concept-Level Estimated Cost	Implementation
49	Blanton St. and 209th Ave. Intersection	Install a new signal, as listed in the Signal Master Plan (Part of RTP 10841 project)	$400,000	Near Term
21	SW 198th Ave and TV Hwy Intersection	Make northbound and southbound left turns protective/permissive (flashing yellow)	$2,800,000	Near Term
21	SW 198th Ave and TV Hwy Intersection	Add dual westbound left-turn lane	$2,400,000	Near Term
21	SW 198th Ave and TV Hwy Intersection	Add southbound right-turn lane	$1,300,000	Near Term
26	SW 185th Ave and TV Hwy Intersection	Add dual left-turn lanes in all directions	$9,900,000	Near Term
26	SW 185th Ave and TV Hwy Intersection	Add eastbound and westbound right-turn lanes	$3,800,000	Near Term
29	SW 170th Ave and TV Hwy Intersection	Improve access management and road alignments	$1,600,000	Near Term
12	TVCP Project Area	Complete bike lanes and sidewalks within TVCP project area.	Various projects	Opportunistic
Not Mapped	TV Hwy	Signal prioritization for transit	$400,000	Opportunistic
10562	Johnson St. Extension (west of 170th)	Construct two-lane extension to 170th Ave. with bike lanes and sidewalks. RTP 10562	$6,158,000	Beyond the TVCP
10582	185th Ave. Improvements (TV Hwy to Farmington)	Widen to five lanes with bike lanes and sidewalks. RTP NFC 10582	$26,435,000	Beyond the TVCP
10584	Alexander St. Improvements (170th Ave to 209th Ave)	Widen to three lanes with bike lanes and sidewalks. RTP NFC 10584	$26,233,000	Beyond the TVCP
10585	Johnson St. Improvements (185th Ave to Cornelius Pass Rd)	Widen to three lanes with bike lanes and sidewalks. RTP NFC 10585	$24,333,000	Beyond the TVCP
Multiple Projects	TVCP Project Area	Provide new local streets to improve connectivity around TV Hwy	NA	Beyond the TVCP
40	TV Hwy	Implement multi-use path on South side of TV Hwy	NA	Beyond the TVCP
41	Pearl-Keeler Powerline Trail	Complete the Pearl-Keeler Powerline Trail for pedestrian and bicyclist use.	NA	Beyond the TVCP
Not Mapped	TVCP Project Area	Improve existing bus service within TVCP project area	NA	Beyond the TVCP
29	SW 170th Ave and TV Hwy Intersection	Add dual left-turn lanes in all directions	$6,200,000	Beyond the TVCP
29	SW 170th Ave and TV Hwy Intersection	Add southbound, eastbound and westbound right-turn lanes	$3,300,000	Beyond the TVCP



TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

WASHINGTON COUNTY OREGON

CITY OF HILLSBORO

DAVID EVANS AND ASSOCIATES INC.

North

0 400 800 Feet

Legend

- Railroad Corridor
- TriMet Bus Route Number and Bus Stop
- Railroad Crossing

Trip Attractions

- Schools
- Retail Centers
- Employment Centers

Generalized Zoning

- Commercial
- Future Urban Develop.
- Industrial
- Multi-Family
- Mixed-Use Residential
- Parks & Open Spaces
- Rural
- Single Family

- Existing Signal (Implement Signal Timing)
- Area for Potential New Local Street Connectivity and Reduced Vehicle Turn Movements Along TV Hwy

Bus Stop Improvements

- Transit Facilities (Near Term)

Transit Improvements

- Transit Facilities(Near Term)

Intersection Improvements

- Bike Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Motor Vehicle Facilities (Near Term)
- Motor Vehicle Facilities (Longer Term)
- Multi-Modal Facilities (Longer Term)

Street/Trail Improvements

- Bike Facilities (Near Term)
- Bike Facilities (Opportunistic)
- Bike Facilities (Longer Term
- Pedestrian Facilities (Near Term)
- Pedestrian Facilities (Opportunistic)
- Bike/Ped Facilities (Near Term)
- Bike/Ped Facilities (Longer Term)
- Multi-Modal Facilities (Near Term)

RTP Locally Financially Constrained Projects (Recommended)

- Multi-Modal Facilities (Near Term)
- Multi-Modal Facilities (Longer Term)

Federal RTP Financially Constrained Projects (Recommended)

- Bike Facilities (Near Term)
- Pedestrian Facilities (Near Term)
- Bike/Ped Facilities (Near Term)
- Bike/Ped Facilities (Longer Term)
- Multi-Modal Facilities (Near Term)
- Multi-Modal Facilities (Longer Term)
- Motor Vehicle/Freight Facilities (Near Term)

Segment D

Recommended Actions

DRAFT TV Highway Corridor Plan

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Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

APPENDIX A. ALL TVCP RECOMMENDED ACTIONS - SEGMENT D

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

RTP/Map Project Number	Location	Proposed Project	Concept-Level Estimated Cost	Implementation
38	Farmington Road (Murray to East of 141st)	Improve to 5 lanes with bike/ped facilities, storm drainage, and street lighting. MSTIP 2	$12,200,000	Near Term
38	Farmington Road (East of 141st to Hocken)	Improve to 5 lane with bike/ped facilities, storm drainage, and street lighting. MSTIP 20	$10,700,000	Near Term
10546	170th Ave. (Alexander St. to Merlo Rd.)	Widen roadway to 4 lanes with left turn lanes at major intersections and bike lanes and sidewalks. RTP 10546	$15,530,000	Near Term
10561	Jenkins Road (Murray Blvd to 158th Ave.)	Widen roadway from three to five lanes with bike lanes and sidewalks. RTP 10561	$15,530,000	Near Term
10578	Merlo/158th (170th Ave to Walker Rd.)	Widen roadway to five lanes with bike lanes and sidewalks. RTP 10578	$24,735,000	Near Term
10617	Farmington Road (Murray Blvd.and Hocken Ave.)	Construct turn lanes and intersection improvements; signalize where warranted; add bike lanes and sidewalks in gaps. RTP 10617	$8,700,000	Near Term
10618	Dawson/Westgate Multimodal Extension (Rose Biggi Ave. to Hocken Ave.)	Extend 2 lane street from Hocken via Dawson and Westgate at Rose Biggi to fill a gap; realign Dawson/Westgate at Cedar Hills; add turn lanes at intersections, sidewalks, bikeway. RTP 10618	$8,900,000	Near Term
10619	Crescent Street Multimodal Extension to Cedar Hills Blvd.	Extend 2 lane Crescent from Cedar Hills to Rose Biggi Ave. to fill a gap; add sidewalks, bikeway. RTP 10619	$3,500,000	Near Term
10621	New street connection from Broadway to 115th Ave.	Construct new 2 lane street with bikeway and sidewalks. RTP 10621	$4,500,000	Near Term
10622	Electric to Whitney to Carousel to 144th multimodal street connections	Connect existing streets and improve to standard with bikeways and sidewalks. RTP 10622	$7,200,000	Near Term
10626	114th Ave./115th Ave. (MAX line to Beaverton Hillsdale Hwy/Griffith Drive)	Construct new two lane street with bike and pedestrian improvements. RTP 10626	$10,000,000	Near Term
10627	Tualaway two-lane multimodal street extension	Extend existing street to Millikan with bikeways and sidewalks. RTP 10627	$3,900,000	Near Term
10628	Center Street and 113th Avenue (Hall Blvd to Cabot St.)	Add sidewalks and bikelanes; add turn lanes where needed. RTP 10628	$5,800,000	Near Term
10629	Hocken Ave. (TV Hwy to Farmington Rd.)	Widen existing street from 3 to 5 lanes, add bike lanes and sidewalks. RTP 10629	$1,600,000	Near Term
10630	Hall Blvd. Extension	Extend Hall Blvd. from Cedar Hills to Hocken to fill a gap; add turn lanes at intersections, sidewalks and bikeway. RTP 10630	$5,500,000	Near Term
10631	141st/142nd/144th Multimodal Street Extension	Connect streets, add bikeways, sidewalks, turns lanes and signalize as warranted. RTP 10631	$6,700,000	Near Term
10633	Allen Blvd. (Hwy 217 to Western Ave.)	Widen street to 4/5 lanes adding turn lanes and signals where needed, construct bike lanes and sidewalks. RTP 10633	$6,300,000	Near Term
10663	Hall Blvd. (Farmington Rd. to Cedar Hills Blvd.)	Construct bike lanes and turn lanes. RTP 10663	$5,200,000	Near Term
10634	Cedar Hills Blvd. (Farmington Rd. to Walker Rd.)	Add turn lanes, bike lanes, and sidewalks. RTP 10634	$19,000,000	Near Term
10636	Millikan Way (141st to Hocken Ave.)	Add turn lanes as needed, bike lanes and sidewalks, signalize as warranted. RTP 10636	$2,600,000	Near Term
10669	Hall Blvd. (12th St. to Allen Blvd.)	Construct bike lanes and turn lanes. RTP 10669	$5,200,000	Near Term
11235	Walker Road (Murray Blvd. to Hwy 217)	Widen from two to five lanes with bike lanes and sidewalks. RTP 11235	$25,673,000	Near Term
Not Mapped	TVCP Project Area	Add directional wayfinding signs	NA	Near Term
Not Mapped	TVCP Project Area	Support and promote employer incentive programs to reduce driving	NA	Near Term
Not Mapped	TV Hwy	Add street lighting on TV Hwy	$8,700,000	Near Term
40	TV Hwy	Complete planning and conceptual plan for a multi-use path on South side of TV Hwy	$5,000,000	Near Term Planning, Longer Term Implementing
11210	TV Hwy by Westside Trail	Crossing of TV Hwy by the Westside Trail. RTP 11210	$4,000,000	Near Term
11212	Bridge Crossing of Farmington Rd. by the Westside Trail	Would avoid out-of-direction bike/ped trips on a major regional trail that is otherwise complete in this area. RTP 11212	$3,000,000	Near Term
11214	Westside /Waterhouse Trail Connection	Design and construct a multi-use regional trail segment 10'-12' wide paved between Westside Trail at Westside MAX tracks to southern terminus of Waterhouse Trail @ Merlo Rd. RTP 11214	$1,500,000	Near Term
11215	Waterhouse Trail	Waterhouse Trail Segments #1, 5, West Spur between Merlo Rd. and Springville Rd.: Design and construct multi-use community trail segments 8'-10' wide paved. RTP 11215	$3,700,000	Near Term
11240	Murray Blvd. (Farmington to TV Hwy)	Construct a six-foot wide bikelane on west side of Murray & replace existing asphalt path with six-foot wide concrete sidewalk & five-foot wide planting strip. RTP 11240	$1,500,000	Near Term
5	TV Hwy	Fill gaps in sidewalks and add landscape buffer along TV Hwy	$4,700,000	Near Term

Color Key
Multi-Modal
Bike
Pedestrian
Bike/Pedestrian
Transit
Motor Vehicle/Freight

APPENDIX A. ALL TVCP RECOMMENDED ACTIONS - SEGMENT D

Includes all RTP, MSTIP 3d, Minor Betterment, and other projects

RTP/Map Project Number	Location	Proposed Project	Concept-Level Estimated Cost	Implementation
31	165th Ave. at TV Hwy Intersection	Improve pedestrian crossing of TV Hwy.	$30,000	Near Term
36	142nd Ave. at TV Hwy Intersection	Improve pedestrian crossing of TV Hwy.	$37,500	Near Term
10662	155th Avenue (Davis Rd. to Beverly Beach Ct.)	Construct sidewalks. RTP 10662	$1,800,000	Near Term
35	TV Hwy and Murray Boulevard (south side)	Improve bus stop	$7,250	Near Term
37	TV Hwy and Hocken Avenue (south side)	Improve bus stop	$7,250	Near Term
11036	Merlo Fuel / Service House Replacement	Over-due replacement, creates new entrance. RTP 11036	$6,411,300	Near Term
Not Mapped	TV Hwy	More detailed study to determine long-term transit solutions for TV Hwy	$400,000 - $1,000,000	Near Term
Not Mapped	TVCP Project Area	Improve existing #57 bus service	$2,200,000	Near Term
4	TV Hwy	Complete bike lanes on TV Hwy	$4,400,000	Near Term
13	TVCP Project Area	Develop continuous East-West parallel bike routes	$2,200,000	Beyond the TVCP
30	170th at TV Hwy Intersection	Improve bike crossing of TV Hwy.	$5,000	Near Term
34	Murray Ave. at TV Hwy Intersection	Improve bike crossing of TV Hwy.	$5,000	Near Term
10664	Watson Ave. (Hall Blvd. to Farmington Rd.)	Construct bike lanes. RTP 10664	$4,500,000	Near Term
10665	6th Ave. (Murray Blvd. to Erickson Ave.)	Construct bike lanes. RTP 10665	$3,600,000	Near Term
10667	155th Ave. (Davis Rd. and Weird Rd.)	Construct bike lanes in gaps. RTP 10667	$5,400,000	Near Term
10668	Farmington Rd. (Hwy 217 to Hocken Ave.)	Construct bike lanes. RTP 10668	$12,600,000	Near Term
Not Mapped	TV Hwy and SW Hocken Avenue (signal)	Full signal rebuild or upgrade heads (dependend on field review). Potential ODOT Fix-it project.	$700,000	Near Term
55	SW Millikan Way and TV Hwy	Network Changes	$4,000,000	Near Term
12	TVCP Project Area	Complete bike lanes and sidewalks within TVCP project area.	Various projects	Opportunistic
Not Mapped	TV Hwy	Signal prioritization for transit	$400,000	Opportunistic
10623	Hall Blvd. multimodal street extension to Jenkins Rd. (Hall Blvd. to Jenkins Rd)	Construct new 4 lane street (2 lane boulevard design if all other Regional Center street connections are complete) with bike lanes and sidewalks. RTP NFC 10623	$14,400,000	Beyond the TVCP
10632	Allen Blvd. (Hwy 217 to Murray Blvd.)	Widen street adding turn lanes and signals where needed, construct bike lanes and sidewalks. RTP 10632	$41,600,000	Beyond the TVCP
10637	Millikan Way (TV Hwy to 141st Ave)	Millikan Way safety, bicycle and pedestrian improvements and 4/5 lanes from Murray to 141st. Add bikelanes in gaps, vehicle and turn lanes as needed, and signals as warranted. RTP 10637	$17,100,000	Beyond the TVCP
Multiple Projects	TVCP Project Area	Provide new local streets to improve connectivity around TV Hwy	NA	Beyond the TVCP
40	TV Hwy	Implement multi-use path on South side of TV Hwy	NA	Beyond the TVCP
11037	Merlo bus operating base expansion	Pave graveled property for bus parking expansion. RTP NFC 11037	$1,000,900	Beyond the TVCP
Not Mapped	TVCP Project Area	Improve existing bus service within TVCP project area	NA	Beyond the TVCP
32	SW Murray Blvd and TV Hwy	Add right-turn lane in eastbound direction	$3,800,000	Beyond the TVCP

APPENDIX B: DRAFT TVCP DEVELOPMENT AND BACKGROUND INFORMATION

APPENDIX B: DRAFT TVCP DEVELOPMENT AND BACKGROUND INFORMATION

This Draft TVCP reflects and builds upon the previous work in developing solutions concepts that the PMT developed. The PMT used the TVCP Evaluation Framework to develop the initial solutions concepts. Each initial solutions concept was evaluated against the project goals and objectives to ensure that each concept met individual criterion.

The Solutions Development Matrix shows how the concepts were grouped into the following three categories, based on TVCP Goals and available funding:

- Most critical state, regional, and community value that the TVCP will commit to meeting as a top investment priority;
- Critical regional and community value that the TVCP will commit to meeting as planned resources allow; and
- Important value that may not be fully attainable within the TVCP scope and planning period based on the availability of limited resources.

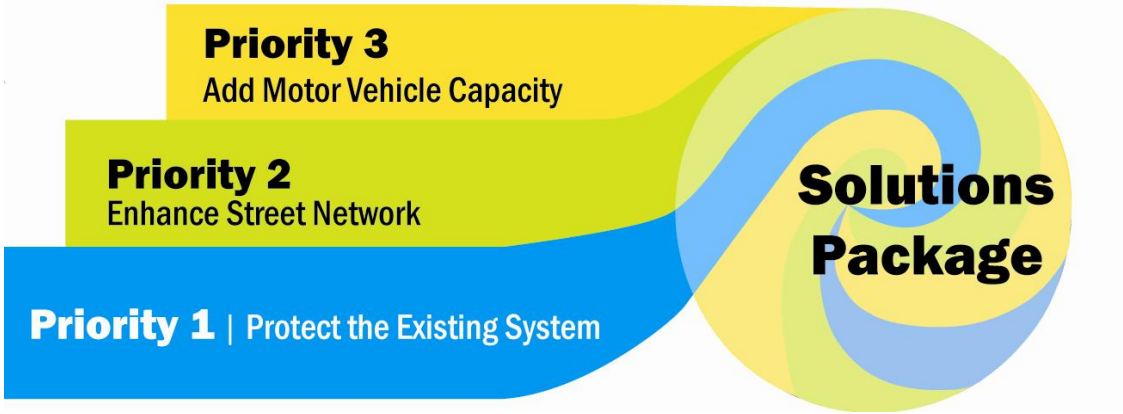
Each solutions concept was placed into one of three priorities, as listed below, based on the OHP Policy 1G and the Metro RFTP policy:

Priority 1: Protect the existing system - Solutions that manage the existing system and support alternative modes of transportation including safety improvements; access management; transportation demand management; transportation system management and operations; and improvements to the bicycle, pedestrian, and transit systems.

Priority 2: Improve efficiency and operational capacity of existing system - Solutions include improvements and additions to the arterial, collector, and local street network in the TVCP Project Area to reduce vehicle trip demand on TV Hwy and encourage use of alternative modes of transportation. These solutions focus on improving the street network in the CRP Project Area not on TV Hwy.

Priority 3: Adding motor vehicle capacity - Solutions that significantly increase SOV capacity, such as adding general purpose lanes, turn lanes greater than a quarter-mile long, two-way left-turn lanes, or dual turn lanes.

Figure 1: Solution Priorities



The matrices and concept descriptions were presented at the third TAC and CAC meetings (held April 5 and 10, 2012, respectively). Committee members provided input on each improvement concept, and this input, in combination with technical and policy considerations, resulted in a revised set of possible solutions. Further refinement and vetting of these solutions have led to the Draft TVCP.[1]

OTHER IMPROVEMENT CONCEPTS CONSIDERED AND NOT RECOMMENDED FOR THE TVCP

The following improvement concepts were presented to and considered by the TAC and CAC. Based on their input and the professional recommendation of the consultant staff, these improvement concepts are not recommended to be included in the draft TVCP.

Add automated speed enforcement cameras

Long delays and extensive traffic queues may cause drivers to engage in riskier actions, such as exceeding reasonable speeds, which could result in more turning- and angle-related collisions. Speed cameras provide law enforcement officials with a tool to improve safety for all modes by targeting aggressive and reckless driving behaviors.

This improvement concept met very few of the project objectives and was not supported by the TAC or CAC. Therefore, it is not recommended for the draft solutions package.

Add security cameras at transit stops

Security cameras can assist transit agencies in monitoring and responding to situations at transit facilities and can be used in incident response. Cameras can be used to monitor the safety of passengers while ensuring that the station equipment remains intact. Security cameras at transit stops can warn officials of possible intentional acts of crime or violence.

This improvement concept met very few of the project objectives and was not supported by the TAC or CAC. Therefore, it is not recommended for the draft solutions package.

[1] Whereas initially the solutions concepts were broken into each of the three priorities, the Draft TVCP is organized by implementation timing and mode rather than by OHP and RTP priority.

Install secure fencing on south side of railroad track between authorized crossings

A fence separating the railroad track and the residential and commercial developments on the south side of TV Hwy would funnel pedestrians and bicyclists through authorized crossings, thereby improving freight travel time reliability. This fencing would reduce the number of unauthorized crossings of the Portland and Western Rail (PNWR) track, thus increasing safety within the corridor.

This improvement concept met very few of the project objectives, could potentially decrease pedestrian and transit mode share, and was not supported by the TAC or CAC. The fencing conflicted with the objectives for a well-connected street system and an increase in pedestrian mode share. Because this is an expensive solution that would not be paid for by the railroad company, the TAC found that this would offer only limited benefits for a high cost. It is therefore not recommended for the draft solutions package.

Consolidate number of at-grade rail crossings

At-grade rail crossings pose a safety risk, and reducing the number of crossings may improve rail-related safety.

This improvement concept met very few of the project objectives and was not supported by the TAC or CAC. Consolidating the number of at-grade rail crossings would not minimize travel times, provide a well-connected street system, provide a more complete bicycle or pedestrian system, enhance conditions for reliable emergency response, or develop solutions that support economic vitality. Furthermore, closing an at-grade crossing would divert traffic to adjacent intersections that are already capacity-constrained. Therefore, this improvement concept is not a recommended solution.

Add new bus service on parallel streets north and south of TV Hwy (e.g., Alexander, Blanton)

New bus service on parallel streets would improve connectivity within the TVCP area while increasing transit, pedestrian, and bicycle mode share.

This is not a recommended improvement concept because it would require infrastructure improvements (e.g., for bus stops) and would detract ridership from the TV Hwy Route #57. The PMT, TAC, and CAC unanimously did not recommend this improvement concept for inclusion in the draft solutions package.

Add a High-Occupancy Vehicle (HOV) lane

HOV lanes are also known as carpool or diamond lanes. HOV lanes can connect major population and employment centers. They are generally inside (left) lanes that are identified by signs and diamond symbols painted on the pavement, and are typically separated from the other lanes on the freeway by a solid white line.

Adding a HOV lane on TV Hwy is not recommended for the draft solutions package because of the negative feedback received from the TAC and CAC. The principal concerns were with giving up a lane of traffic or needing to add another lane and that an HOV lane is most effective with pricing preferences that would not work on TV Hwy. Although the HOV lane meets the project objectives for greater travel time reliability and a reduction in travel share by single-occupancy vehicles, it is a high cost-solution that does not fit the arterial designation of TV Hwy. For these reasons it is not a recommended improvement concept for the draft solutions package.

Create a couplet between Cornelius Pass Road and 170th Avenue (makes Alexander one-way westbound and Blanton one-way eastbound)

A couplet between Cornelius Pass Road and 170th Avenue would function as more of a circulatory system south and parallel to TV Hwy.

This improvement concept was universally not recommended by the PMT, TAC, or CAC and is therefore not included in the draft solutions package. Members found this option to be too disruptive to travel patterns and neighborhood streets, with minimal benefits. Although this improvement would meet the project objectives for mobility and safety, it conflicts with the objectives for providing a well-connected street network and worker access to industrial/employment areas.

Relocate railroad underneath the TV Hwy median (cut-and-cover) and use existing railroad land for multimodal use

This would be a major reconstruction project to relocate a portion of the PNWR track alignment and to depress the track elevation so that other modes could cross it via structures. The existing PNWR right-of-way would be available for use as a dedicated high-capacity transit and multi-use trail.

Because the high cost of this improvement concept would preclude other low-cost, high-impact solutions, this is not recommended for the draft solutions package. PMT, TAC, and CAC members agreed that, although relocating the railroad and using the land for multimodal use meets a high number of objectives, it is cost prohibitive.

Add undercrossing of railroad tracks for pedestrians and bicyclists (between 209th and 160th Avenues)

An undercrossing will allow safe access to and from TV Hwy for pedestrians and bicyclists from the south without creating an additional crossing of the railroad tracks.

Multiple technical and community representatives have expressed concern that this would be extremely costly and may not be safe for users. The general consensus among TAC and CAC members was that personal safety may be compromised in creating undercrossings. Additionally, there are different low-cost solutions that meet more project objectives. For these reasons, this is not a recommended solutions concept for the draft solutions package.

TVCP Solutions Development Matrix KEY

OHP 1G/RTP Planning Priorities are based on community values as determined by input from the public, TAC, CAC, and PG

Most Critical	Most critical need to address and the TVCP will commit to meeting this objective as a top investment priority
Critical	Critical regional and community value, and the TVCP will commit to meeting this objective as resources will allow
Important	Important value that may not be fully attainable within the TVCP scope and planning period based on limited resources

Best Meets Criteria	Improvement concept will substantially meet the specified TVCP Project Objective
Partially Meets Criteria	Improvement concept will partially meet the specified TVCP Project Objective
Conflicts with Criteria	Improvement concept does not meet the specified TVCP Project Objective
Not Applicable	Improvement concept does not apply to the specified TVCP Project Objective

5/24/2012 DRAFT TVCP Solutions Development Matrix - Priority 1- Protect Existing System

EVALUATION CRITERIA (OBJECTIVES)		IMPROVEMENT CONCEPTS																
		TRANSPORTATION SYSTEM MANAGEMENT & OPERATIONS (TSMO)									OTHER							
		Apply Alternative Mobility Standard(s) to TV Hwy	Signal Priority for Transit on TV Hwy	Signal Optimization for All Modes (Corridor Wide)	Adaptive Signal Control (Corridor Wide)	Real-time Traveler Info.	Enhance Existing Bus Service within TVCP	Enhance Existing #57 Bus Service	Community Education & Marketing for Rideshare/ Transit	Employer Incentive Programs	Install Street Lighting on TV Hwy	Add Wayfinding Signage for Non-motorists	Add Security Cameras at Transit Stops	Add Red Light Violation Cameras	Install Secure Fencing on South Side of RR Track between Authorized Crossings	Public Rail Safety Education	Access Management (Driveway Consolidation)	Preserve Minimum 1 Mile Train Storage Segment
1	1A. Provide travel time reliability for transit																	
1	1B. Provide travel time reliability for autos and trucks																	
1	1C. Maintain mobility for trucks on TV Hwy																	
1	1D. Maintain rail corridor for freight operations																	
1	1E. Minimize travel times for all autos, trucks, transit, bicyclists, and pedestrians																	
2	2A. Provide a well connected street, pedestrian, and bicycle facilities network																	
2	2B. Complete arterial, collector, and local street system																	
2	2C. Complete pedestrian system																	
2	2D. Complete bicycle system																	
2	2E. Complete regional transit system																	
3	3A. Increase community awareness of safety																	
3	3B. Reduce potential for severe crashes (all modes)																	
3	3C. Enhance conditions for reliable emergency response																	
4	4A. Develop solutions that support economic vitality																	
4	4B. Improve freight and worker access to industrial/employment areas																	
5	5. Incorporate visual amenities within the TV Hwy R/W																	
6	6A. Improve air quality in the corridor																	
6	6B. Minimize impacts to stream corridors, wetlands, and upland habitat																	
6	6C. Improve water quality and provide opportunity for best practices application in the corridor																	
7	7A. Increase pedestrian mode share																	
7	7B. Increase bicycle mode share																	
7	7C. Increase transit mode share																	
7	7D. Reduce travel share by SOVs																	
8	8. Develop cost-effective solutions																	
9	9.Reduce transportation-related GHG emissions in the TVCP Project Area																	
	RELATIVE COST	$	$	$	$$	$	$$	$$	$	$$	$$	$	$	$$	$$	$	$$	$$
	PMT Recommends?	YES	Discuss	YES	YES (Expand SCATS)	YES	Discuss	Discuss	YES	YES	YES	YES	Discuss	Discuss	Discuss	YES	YES (Specific Locations)	Discuss
	TAC Recommends?	YES	YES	Discuss	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO	YES	YES	Discuss
	CAC Recommends?	YES	YES	NO	YES	NO	YES	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES	NO

Priority 1: Protect Existing System

Goals: (1) Improve mobility; (2) Enhance connectivity; (3) Safety; (4) Economic vitality; (5) Improve appearance of TV Hwy; (6) Environmental stewardship; (7) Reduce VMTs; (8) Financial responsibility; (9) Reduce GHG emissions

5/24/2012 DRAFT TVCP Solutions Development Matrix - Priority 2 - Enhance Existing System

EVALUATION CRITERIA (OBJECTIVES)		IMPROVEMENT CONCEPTS																		
		PEDESTRIAN				BICYCLE			TRANSIT			MULTI-MODAL/OTHER								
		Implement Pedestrian Refuges on TV Hwy	Complete Sidewalk Network Along TV Hwy	Complete Sidewalk Network on N/S Arterials & Collectors	Add Landscape Buffer with Trees Between Sidewalks & Streets on TV Hwy	Add Bicycle Parking at Transit Stops	Provide Standard Bicycle Facilities on TV Hwy	Develop Continuous Parallel E-W bike Routes N. & S. of TV Hwy	Enhance Bus Stop Amenities	Combine Bus/Right Lane and Far-side Pull-out at Major Intersections	Add Express Bus Service on TV Hwy with Stops Limited to Major Nodes	Transit and Pedestrian-Oriented Development (Code Amendments)	Enhance Existing North-South Routes for All Modes	Improve Existing E-W Parallel Routes for All Modes	Complete Regional Trails in Corridor	Dedicate ROW for Off-network, Connective Streets w/ Land-use Changes and Redevelopment (via plan/code changes)	Add Raised Median on TV Hwy (and Allow/provide for U-Turns at Signalized Intersections)	Make Improvements at Specific Intersections Along TV Hwy	Provide 'Jug Handle' Left Turns Near Major TV Hwy Intersections	Consolidate Number of At-grade Rail Crossings (Safety/Access Management)
1	1A. Provide travel time reliability for transit																			
1	1B. Provide travel time reliability for autos and trucks																			
1	1C. Maintain mobility for trucks on TV Hwy																			
1	1D. Maintain rail corridor for freight operations																			
1	1E. Minimize travel times for all autos, trucks, transit, bicyclists, and pedestrians																			
2	2A. Provide a well connected street, pedestrian, and bicycle facilities																			
2	2B. Complete arterial, collector, and local street system																			
2	2C. Complete pedestrian system																			
2	2D. Complete bicycle system																			
2	2E. Complete regional transit system																			
3	3A. Increase community awareness of safety																			
3	3B. Reduce potential for severe crashes (all modes)																			
3	3C. Enhance conditions for reliable emergency response																			
4	4A. Develop solutions that support economic vitality																			
4	4B. Improve freight and worker access to industrial/employment areas																			
5	5. Incorporate visual amenities within the TV Hwy R/W																			
6	6A. Improve air quality in the corridor																			
6	6B. Minimize impacts to stream corridors, wetlands, and upland habitat																			
6	6C. Improve water quality and provide opportunity for best practices																			
7	7A. Increase pedestrian mode share																			
7	7B. Increase bicycle mode share																			
7	7C. Increase transit mode share																			
7	7D. Reduce travel share by SOVs																			
8	8. Develop cost-effective solutions																			
9	9.Reduce transportation-related GHG emissions in the TVCP Project Area																			
	RELATIVE COST	$$	$$	$$	$$	$	$$	$	$	$$	$$	$	$$$	$$	$$	$$	$$		$$	$$
	PMT Recommends?	?	YES	YES	?	YES	?	YES	YES	YES	?	YES	YES	?	YES	YES	?	YES	?	?
	TAC Recommends?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	Discuss	Discuss	YES	YES	YES	Discuss	Discuss	YES	NO
	CAC Recommends?	YES	YES	YES	Discuss	YES	YES	YES	YES	YES	YES	Discuss	YES	YES	NO	YES	NO	YES	NO	NO

Priority 2: Enhance Existing System

Goals: (1) Improve mobility; (2) Enhance connectivity; (3) Safety; (4) Economic vitality; (5) Improve appearance of TV Hwy; (6) Environmental stewardship; (7) Reduce VMTs; (8) Financial responsibility; (9) Reduce GHG emissions

5/24/2012 DRAFT TVCP Solutions Development Matrix - Priority 3 - Expand Existing System

EVALUATION CRITERIA (OBJECTIVES)		IMPROVEMENT CONCEPTS														
		TRANSIT				MULTI-MODAL/OTHER										
		Add a Business-Access and Transit (BAT) Lane on TV Hwy Westbound	Add Frequent Bus Service on Parallel Streets N. and S. of TV Hwy (e.g. Alexander, Blanton)	Implement Fixed or Flex Guideway System Such as Light Rail or Bus Rapid Transit on TV Hwy	Use Existing RR Right-of-Way for Commuter Rail	Add a Cycle Track on TV Hwy	Transit and Pedestrian-Oriented Development (Market Incentives)	Add Undercrossing of RR Tracks for Pedestrians and Bicyclists (Between 209th and 160th)	Add a Grade Separated Crossing at TV Hwy and Cornelius Pass Rd.	Add a Grade Separated Crossing at TV Hwy and 185th	Add a Grade Separated Crossing at Hwy and 170th	Add a Grade Separated Crossing at TV Hwy and Murray Blvd.	One-Way Couplet Between Cornelius Pass Rd. & 170th (makes Alexander one-way WB & Blanton one-way EB)	Develop New North/ South Arterial & Collector Links	Add a High-Occupancy Vehicle (HOV) Lane on TV Hwy	Relocate and Cut/Cover RR within TV Hwy Median and use Existing RR ROW for Multi-Modal Use
1	1A. Provide travel time reliability for transit															
1	1B. Provide travel time reliability for autos and trucks															
1	1C. Maintain mobility for trucks on TV Hwy															
1	1D. Maintain rail corridor for freight operations															
1	1E. Minimize travel times for all autos, trucks, transit, bicyclists, and pedestrians															
2	2A. Provide a well connected street, pedestrian, and bicycle facilities network															
2	2B. Complete arterial, collector, and local street system															
2	2C. Complete pedestrian system															
2	2D. Complete bicycle system															
2	2E. Complete regional transit system															
3	3A. Increase community awareness of safety															
3	3B. Reduce potential for severe crashes (all modes)															
3	3C. Enhance conditions for reliable emergency response															
4	4A. Develop solutions that support economic vitality															
4	4B. Improve freight and worker access to industrial/employment areas															
5	5. Incorporate visual amenities within the TV Hwy R/W															
6	6A. Improve air quality in the corridor															
6	6B. Minimize impacts to stream corridors, wetlands, and upland habitat															
6	6C. Improve water quality and provide opportunity for best practices application in the corridor															
7	7A. Increase pedestrian mode share															
7	7B. Increase bicycle mode share															
7	7C. Increase transit mode share															
7	7D. Reduce travel share by SOVs															
8	8. Develop cost-effective solutions															
9	9.Reduce transportation-related GHG emissions in the TVCP Project Area															
	RELATIVE COST	$$$	$$$	$$$	$$$$	$$	$$	$$$	$$$$	$$$$	$$$$	$$$$	$$$	$$$	$$$	$$$$$
	PMT Recommends?	Discuss/ YES	Discuss/ NO	Discuss/ NO	Discuss	Discuss	Discuss (Coord. With A-R)	Discuss/ NO	NO	NO	NO	Discuss (Need Model)	NO	YES (Corn. Pass only)	NO	NO
	TAC Recommends?	Discuss	NO	Discuss	Discuss	Discuss	YES	Discuss	Discuss	Discuss	Discuss	Discuss	NO	YES	NO	NO
	CAC Recommends?	Discuss	NO	NO	NO	NO	Discuss	NO	NO	NO	NO	NO	NO	YES	NO	NO

Priority 3: Expand Existing System

Goals: (1) Improve mobility; (2) Enhance connectivity; (3) Safety; (4) Economic vitality; (5) Improve appearance of TV Hwy; (6) Environmental stewardship; (7) Reduce VMTs; (8) Financial responsibility; (9) Reduce GHG emissions

APPENDIX C: ARTERIAL V. THROUGHWAY ISSUE PAPER AND POLICY GROUP NOTES

TV Highway Corridor Refinement Plan
Arterial v. Throughway Issue Paper

ISSUE
The Project Management Team (PMT) is seeking input from the Policy Group on whether Tualatin Valley Highway ("TV Hwy") should be designated as an arterial or throughway.

BACKGROUND
As part of the 2035 Regional Transportation Plan (RTP), the concept of regional mobility corridors emerged to help guide investments. The regional mobility corridor concept integrates arterial streets, throughways, high capacity transit, frequent bus routes, freight/passenger rail, and bicycle parkways into subareas of the region that work together to provide for regional, statewide and interstate travel.[1] The function of this network of integrated transportation corridors is metropolitan mobility – moving people and goods between different parts of the region and, in some corridors, connecting the region with the rest of the state and beyond. These transportation corridors also have significant influence on the development and function of the land uses they serve. The regional mobility corridor concept calls for consideration of multiple facilities, modes and land use when identifying needs and most effective mix of land use and transportation solutions to improve mobility within a specific corridor area.

In April of 2007, regional partners identified 24 mobility corridors centered on the region's network of interstate and state highways. A mobility corridor was designated connecting Beaverton to Hillsboro and Forest Grove centering on TV Hwy. The Oregon Department of Transportation, City of Hillsboro, and Washington County are developing the Tualatin Valley Corridor Plan (TVCP) for the 8.5 mile section of TV Highway between downtown Beaverton and downtown Hillsboro, and the broader area served by this transportation corridor.

The purpose of the TVCP is to define the regional functional classification for all modes, design classification and typical cross section for TV Hwy and identify a package of transportation solutions to address transportation system deficiencies for all modes and transportation facilities in the project area.

TV Hwy is currently designated as a principal arterial[2] between Murray Boulevard and Brookwood Avenue and as an arterial from Brookwood Avenue west through Hillsboro and from Murray Boulevard east to Highway 217. The County Transportation System Plan (TSP) shows TV Hwy as a principal arterial from Brookwood to roughly Cedar Hills Boulevard.

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[1] See 2.4.2.4 Regional Bicycle System for more information about the bicycle parkway concept.
[2] Under the RTP, throughways are classified as "principal arterials" (RTP at p. G-23).

Consistent with these initiatives, the PMT is seeking an early determination from the Policy Group on whether TV Hwy should be classified as an Arterial or Throughway Principal or Major Arterial throughout the entire corridor.

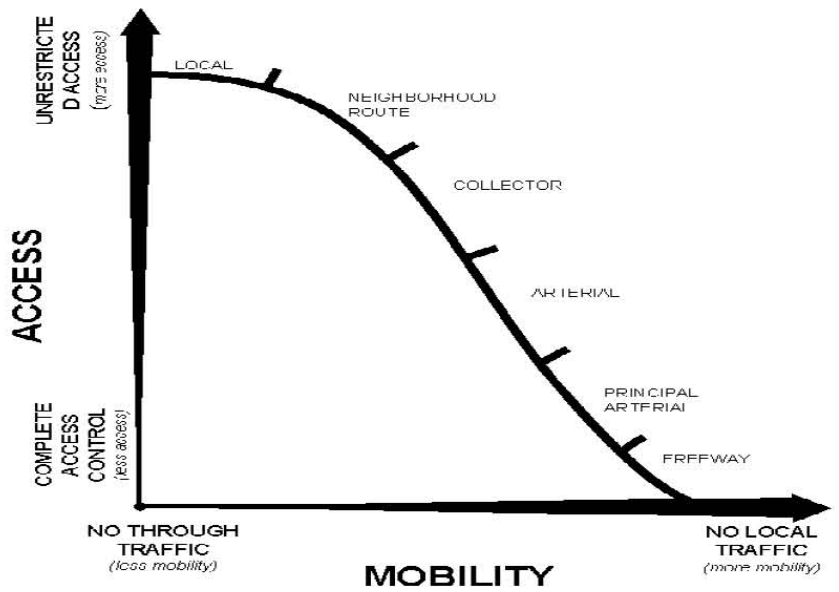
CONSIDERATIONS

1. **Should TV Hwy Primarily Serve Longer Distance Travel Through or Local Travel Within the Corridor?**

In answering the question of whether TV Hwy should be an arterial or throughway, it is helpful to look at the functions of each of these roadways in comparison to how TV Hwy currently is used and to how it is envisioned to be used in the future. Table 1 compares features of throughways to arterials and how TV Hwy functions today.

Figure 1 illustrates the relationship between arterials and throughways, the throughways being more restrictive to local traffic and having more access control than arterials.

Figure 1 – Relationship Between Functional Classification, Mobility and Access



Source: Washington County Transportation System Plan (3.23.2003)

Table 1: Arterial v. Throughway Decision Matrix

THROUGHWAY	ARTERIAL	TV HIGHWAY PERFORMANCE TODAY
Serves longer distance travel within the region and state	For travel within the region to major destination areas and to throughways	Over half of the trips begin and end in corridor.[3]
Carries between 50,000 and 100,000 vehicles per day	Carries between 10,000 and 40,000 vehicles per day	Current traffic volumes are between 30,000 and 40,000 vehicles per day.[4]
Access to adjacent properties is highly limited	Access to adjacent properties is moderately limited	Frequent access points on north side of highway; limited access on south side due to railroad (*see* maps).
• 6 travel lanes • High speeds • Mix of at-grade and grade separated intersections/interchanges	• 4 travel lanes with turn lanes • Moderate speeds • At-grade intersections	• 4 travel lanes with turn lanes. • Speeds vary between 35 and 45 mph. • Existing intersections at grade.
Design emphasis for travel by car and freight truck and is not appropriate with granting access to transit, bicycles and pedestrians	Compatible with bicycle, pedestrian, truck and transit travel	• Sidewalks on north side but incomplete on south side. • Bike lanes along highway through most of project area. • TriMet 57 frequent bus 8th most used in system. • Current heavy congestion during peak periods.
Land use implications: • The above factors place emphasis on moving through, versus within the region. • Access to adjacent land uses is restricted. • Creates more conflicts with land uses and transportation and between modes of transportation. • "*Highway designs do not reflect adjacent land use*."[5] • Limits ability to create complete communities.	*Land use implications*: • Accommodates movement within and through region. • Less restricted land use access. • Land uses can encourage alternative modes of transportation for local trips.[6] • Emphasis on finding balanced multi-modal function.[7] • Appropriate for more intensely developed activity centers.[8] • Overall, greater opportunity to integrate land uses and transportation.	*Existing Land Use Implications:* • Area characterized by residential to the north and south of the highway as the predominant use in the project area; commercial uses – predominantly retail – align the north side of the highway with a mix of industrial and commercial uses in areas along the south side. • Approximately 30 schools in corridor project area • High transit ridership • 92,000 persons and more than 33,700 dwelling units in corridor[9] *Future Land Use Implications*: • Aloha-Reedville Livability Study includes project goal to "*develop strategies for economic improvements, housing, redevelopment, corridors and town centers, and transportation improvements that promote livability and sustainability.*" • Inclusion of 1063 acres ("South Hillsboro") in UGB to accommodate 10,766 dwelling units. • Beaverton's Civic Plan and its concept for a more pedestrian friendly environment in its downtown core, including Canyon Road.
Examples in the region: I-5, I-405, I-205, I-84, Highway 30, Highway 26, Highway 99, Highway 217; Highway 224 (McLoughlin to I-205)	*Examples in the region*: TV Highway from Brookwood Avenue west to Forest Grove and from Murray Boulevard east to Highway 217; Canyon Road from Highway 217 to I-5, Cornelius Pass Road between TV Highway and Highway 26; Cornell Road, SE Powell Blvd and NW/NE Broadway.	

Source: *Metro 2035 Regional Transportation Plan* (unless otherwise noted)

[3] Metro Model
[4] West of Highway 217, traffic volumes of Highway 8 (TV Highway) are close to 50,000 vehicles per day. That section is designated in the RTP as an arterial.
[5] *Creating Livable Streets, Street Design Guidelines* (Metro, 2002)(because of the emphasis on through traffic, the *Guidelines* do not address throughways).
[6] *Id.* at p.44.
[7] *Id. at p.58* (while the *Guidelines* address Regional boulevards, "regional boulevards serve a function similar to the major arterial classification.")
[8] *Id.*
[9] 2010 U.S. Census for Census Block Groups that overlap the TVCP project Area.

Additional factors to consider regarding how TV Hwy may function in the future:

- The TVCP is to come up with solutions for all modes of transportation – including walking, transit and cycling, as well as automobiles, truck freight and rail.
- ***Impacts to the Built Environment and Businesses****:* Adding capacity would require acquiring right of way on the north side, as the south side is encumbered by the railroad. There would be significant impacts at intersections if grade separation were required. Designation as a throughway may also result in more restricted access management, further impacting existing businesses on the north side of TV Hwy.
- ***Cost:*** ODOT preliminary design developed a planning level cost estimate – *not including the right of way costs* – for the widening of TV Highway to 6 lanes, with 3 grade-separated intersections (one at Cedar Hills Boulevard, 185th Avenue and Murray Boulevard) from Murray Boulevard to Brookwood Avenue. The road widening is about $70-$90 million and *each* interchange at $55-$70 million.
- From stakeholder interviews of the Policy Group and Senior Staff:
    - ***Adding Capacity:*** Simply adding lanes was not a favored solution. Similarly, several people indicated that grade-separation is not favored. Both added lanes and grade-separated intersections were seen as further reducing the quality of the pedestrian environment and safety, as well as dividing communities. However, with regard to grade-separation, one senior staff member did encourage looking into designs of modern (arterial?) grade-separated intersections.
    - ***Mobility*****:** It is expected that trips in the corridor will shorten. Several people stressed the need to find the balance between creating a better environment along the highway and moving people and freight.
    - ***Future Development in the Corridor*****:** Looking to the future, it is envisioned that nodes of complete communities (consistent with Metro 2040) will develop along the corridor. This increased development is likely to result in TV Hwy being used for more local, as opposed to through traffic, resulting in shorter trips.

2. Transportation Solution Priorities

Under both the Oregon Highway Plan (OHP) and the Regional Transportation Plan, adding capacity is the last option.

Oregon Highway Plan Transportation System Solution Priorities:

1. *Protect existing transportation system*
    - Safety – reduce crashes and injuries
    - Technology – upgrade traffic signals to improve reliability for driving cars and trucks
    - Transit – enhance the quality, safety and reliability of transit and make it easier and safer to get to transit stops
    - Bicycle system – enhance the quality, safety and convenience for bicycling
    - Pedestrian system – enhance the quality, safety and convenience for walking or using a mobility device
2. *Improve efficiency and capacity of existing system*
    - Complete the street network – improve street connectivity and make all streets

accessible for all modes
- Intersection operations – solutions that add left or right turn lanes for vehicles at intersections

3. *Add capacity*
    - Add vehicle lanes on TV Highway – add capacity for motor vehicles

Regional Transportation Plan – Policies for the Arterial and Throughway Network Vision[10]

The Arterial and Throughway concept

> *. . . contains policy and strategy provisions to develop a complete and well-connected roadway system that provides adequate capacity and supports all modes of travel. Rather than relying principally on levels of congestion to direct how and where to address motor vehicle capacity needs, the concept calls for implementing a well-connected network design that is tailored to fit local geography, respect existing communities and future development and protect the natural environment*

The RTP sets forth the following three policies as the foundation for the arterial and throughway vision:

1. Build a well-connected network of "complete" streets that prioritize safe and convenient pedestrian and bicycle access.
2. Improve local and collector street connectivity.
3. Maximize system operations by implementing management strategies *prior to building new motor vehicle capacity,* where appropriate (emphasis added).

3. Intelligent Transportation Systems

Technology, known as Intelligent Transportation Systems, will likely play a large role in any solutions package. As stated in Metro's report – *Mobility the Smart Way: The State of ITS in the Portland Metropolitan Region* – "***more than half of all congestion is caused by incidents and other sources that can be addressed using system management and operational strategies***" (p. 4). Accordingly, one of Oregon Transportation Plan's key initiatives is to "***optimize system capacity and safety through information technology and other methods***."

OPTIONS AVAILABLE

There are two options at this point:

- Give policy direction for designation of the entire lengthy of TV Hwy in the corridor as an arterial. This will allow the study of solutions that maintain existing capacity for through traffic at four lanes (with additional turn lanes, as needed).
- Defer decision until the solution package is developed and include the possibility as adding capacity as a solution.

[10] RTP Section 2.5.2.

IMPLICATIONS AND SUGGESTIONS

Making a determination of whether TV Hwy should be an arterial or throughway more clearly defines the target for the long-term design and, correspondingly, the range of tools/options to prioritize investment in the corridor. It also will provide more clarity to the public and stakeholders to help us get to a solutions package and set expectations.

DRAFT

APPENDIX D: NEEDS, OPPORTUNITIES, AND CONSTRAINTS REPORT

TV HIGHWAY CORRIDOR PLAN

TVHIGHWAY.ORG

Needs, Opportunities, and Constraints Report

A holistic assessment of the Tualatin-Valley Highway (TV Hwy) Corridor Plan Project Area for existing and future transportation issues and potential improvement concepts

May 1, 2012

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by the federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), local government, and the State of Oregon Funds.

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Introduction

This document presents key findings from an examination of the multi-modal and composite deficiencies and needs within the Tualatin-Valley Corridor Plan (TVCP) project area, and identifies potential improvement measures to address the deficiencies and needs. To do this, new analysis is integrated with the research and technical information gathered in the TVCP Existing Transportation Conditions Report (December 2011), Metro's 2035 travel demand model, plus stakeholder and public input.

The findings and initial improvement concepts identified in this document will guide the development of solutions intended to meet the nine TVCP goals adopted by the Policy Group as consistent with the Regional Transportation Plan (RTP). The goals are:

1. Improve mobility for multimodal travel through and within the TVCP Project Area
2. Enhance connectivity and accessibility to key destinations within the TVCP
3. Enhance safety for all users and modes along and across Tualatin-Valley Highway (TV Hwy)
4. Strengthen and support economic vitality and well-being
5. Improve the visual appearance of TV Hwy
6. Promote environmental stewardship
7. Reduce vehicle miles traveled (VMT) in the TVCP Project Area
8. Demonstrate fiscal and financial responsibility
9. Be consistent with state and regional comprehensive strategies to reduce greenhouse gas (GHG) emissions

Table 1 presents the TVCP Goals and Objectives that are considered along with established needs for identifying and assessing improvement concepts.[1]

Table 1. TVCP Goals and Objectives

TVCP Implementation Goals	Objectives	Applicable RTP Goal(s)
1. Improve mobility for multimodal travel through and within the TVCP Project Area	1A. Provide travel time reliability for transit 1B. Provide travel time reliability for autos and trucks 1C. Maintain mobility for trucks and over-dimensional vehicles on TV Hwy 1D. Maintain rail corridor for freight operations 1E. Minimize travel times for autos, trucks, transit, bicyclists, and pedestrians	*Goal 2: Sustain Economic Competitiveness and Prosperity* *Goal 3: Expand Transportation Choices* *Goal 4: Emphasize Effective and Efficient Management of the Transportation System*

[1] *The TVCP Policy Group adopted the Goals and acknowledged that the objectives may be refined through the TVCP process. Applicable 2035 RTP Goal(s) are also identified in relation to each of the proposed TVCP Goals and Objectives.*

TVCP Implementation Goals	Objectives	Applicable RTP Goal(s)
2. Enhance connectivity and accessibility to key destinations within the TVCP Project Area for pedestrians, bicyclists, transit, automobile, and freight users	2A. Provide a well-connected network of streets, pedestrian, and bicycle facilities to safely and comfortably accommodate all users (see RTFP 3.08.110-140 for guidance) 2B. Complete the arterial, collector, and local street system (see RTFP 3.08.110 for guidance) 2B. Complete the pedestrian system (sidewalks, crossings, and pathways) (see Regional Transportation Functional Plan [RTFP] 3.08.130 for guidance) 2D. Complete the bicycle system (on-street and off-street bikeways and crossings) (see RTFP 3.08.140 for guidance) 2E. Complete the regional transit system (see RTFP 3.08.120 for guidance)	*Goal 2: Sustain Economic Competitiveness and Prosperity* *Goal 3: Expand Transportation Choices* *Goal 5: Enhance Safety and Security*
3. Enhance safety for all users and modes along and across TV Hwy	3A. Increase community awareness of safety issues and safe travel behavior in the TVCP Project Area 3B. Reduce potential for severe crashes for all modes 3C. Enhance conditions for reliable emergency service responsiveness	*Goal 2: Sustain Economic Competitiveness and Prosperity* *Goal 3: Expand Transportation Choices* *Goal 5: Enhance Safety and Security* *Goal 9: Ensure Fiscal Stewardship*
4. Strengthen and support economic vitality and well-being	4A. Improve freight and worker access to industrial and employment areas 4B. Develop solutions that support economic vitality	*Goal 2: Sustain Economic Competitiveness and Prosperity* *Goal 9: Ensure Fiscal Stewardship*
5. Improve the visual appearance of TV Hwy	5. Incorporate visual amenities (i.e., streetscaping and vegetation/landscaping) within the TV Hwy right-of-way	*Goal 1: Foster Vibrant Communities and Efficient Urban Form* *Goal 6: Promote Environmental Stewardship*
6. Promote environmental stewardship	6A. Improve the air and water quality in the corridor 6B. Minimize impacts to stream corridors, wetlands, and upland habitat 6C. Improve water quality and provide opportunity for best practices application in the corridor	*Goal 6: Promote Environmental Stewardship*
7. Reduce per person and/or overall VMT in the TVCP Project Area	7A. Triple pedestrian mode share compared to 2010 7B. Triple bicycle mode share compared to 2010 7C Triple transit mode share compared to 2010 7D. Reduce travel share by single-occupant vehicles (SOVs)	*Goal 3: Expand Transportation Choices*
8. Demonstrate fiscal and financial responsibility	8. Develop cost-effective solutions (comprehensive and long-term, considering	*Goal 9: Ensure Fiscal Stewardship*

TVCP Implementation Goals	Objectives	Applicable RTP Goal(s)
	capital, operations, maintenance, and other applicable Least Cost Planning factors)	
9. Be consistent with state and regional comprehensive strategies to reduce greenhouse gas (GHG) emissions	9. Reduce transportation-related GHG emissions in the TVCP Project Area	*Goal 6: Promote Environmental Stewardship* *Goal 7: Enhance Human Health*

To provide a succinct and functional assessment of the project area multi-modal transportation needs, opportunities, and constraints, this report is organized into four sections:

1. Deficiencies and Needs: Provides an overview assessment of the project area deficiencies followed by the resulting identified needs by mode.
2. Improvement Concepts: Provides a matrix of the main improvement concepts for each travel mode and according to land use principles, and categorizes improvements to develop a selection strategy by feasibility.
3. Financial Environment for Improvements: Reviews the opportunities and constraints to developing a financial strategy for transportation system solutions in the project area.
4. Solutions Development Process: Presents evaluation criteria to consider when advancing and developing improvement concepts into possible system solutions.

At the Policy Group's meeting in January 2012, the group's members reached a unanimous decision to designate the entire length of TV Hwy as an Arterial. This decision was based on input from community members, the Community Advisory Committee, and the Technical Advisory Committee. As such, TV Hwy will function to accommodate movement within and throughout the region while allowing for the greatest opportunity to integrate land uses and transportation.

Although adding lanes to TV Hwy for the full length (which would be consistent with a Throughway functional designation) would increase carrying capacity and could subsequently improve truck freight service reliability, it would create a wider area for pedestrians and bicyclists to cross in order to access transit. In general, it would create an environment that is less supportive to pedestrians, bicyclists, and transit. Constraints to implementing the widening itself consist of the impediment of the rail line to the south creating the need for additional right-of-way and right-of-way impacts to the north. The concept of adding through lanes to TV Hwy is discussed in more detail in Appendix B: Arterial v. Throughway Issue Paper.

Project Description

TV Hwy anchors the Metro 2035 Regional Transportation Plan (RTP) Mobility Corridor #24, and provides a primary connection between the Beaverton and Hillsboro Regional Centers and to Oregon State Highway 217 (OR 217). The 2035 RTP identifies TV Hwy as needing a Corridor Refinement Plan (TVCP) to determine the appropriate functional classifications for all modes and street design classification for TV Hwy, and to address system deficiencies relative to the travel needs of current and future users in the corridor. The TVCP, to be completed in the summer of 2012, will propose a package of transportation system solutions and performance standards to address transportation system deficiencies for all modes in the TVCP Project Area (Figure 1).

TV Hwy carries 30,000 to 40,000 vehicles per day, posted speeds of 35 to 45 miles per hour (mph) and access to businesses, especially along its north side in the project area. High transit use and bicycle and pedestrian activity occur along TV Hwy and connecting streets. The highway experiences stop-and-go levels of congestion, with many intersections operating at or near capacity during peak periods. Future traffic forecasts indicate that the performance of TV Hwy will continue to deteriorate with increasing vehicle trip demand in the corridor and demand for some roadway sections exceeding the capacity of the roadway. TV Hwy also experiences conflicts between modes, such as at-grade rail crossings and pedestrian/bicycle highway crossings.

The 2035 RTP identifies the TV Hwy Corridor with the following classifications:

- Regional Street,
- Principal Arterial,
- Frequent Bus,
- Branch Railroad,
- Freight Road Connector,
- Regional Bikeway, and
- Mixed Use Pedestrian Corridor.

The Oregon Highway Plan (OHP) designates TV Hwy as a Statewide National Highway System (NHS) highway. TV Hwy is on the National Network and, as such, is a truck route subject to maintaining its current truck freight carrying capacity for its entire roadway. No reduction to truck freight capacity is allowed without the Oregon Transportation Commission's (OTC's) approval. Because of the proximity of the active Portland & Western Railroad (PNWR) line, located parallel to TV Hwy on the south side, this corridor faces particular challenges accommodating the development of transportation solutions.

Project Area

As shown in Figure 1, the TVCP Project Area is defined by SE 10th Avenue/Maple Street (Hillsboro Regional Center) on the west, Baseline Road/Jenkins Road on the north, Cedar Hills Boulevard (Beaverton Regional Center) on the east, and Farmington Road, Oak Street, Davis Street, and Allen Boulevard on the south. The Existing Transportation Conditions Report (DEA, 2011) provides a more detailed description of the TVCP Project Area.

Development of the TVCP has received state, regional, and local stakeholder agency support, including support from the Washington County Coordinating Committee (WCCC), because TV Hwy plays an important role in the quality of life and economic success for people who live and work in Washington County.

Thousands of people use TV Hwy each day to access destinations both inside the project area and the surrounding region. With continued development planned within and surrounding the corridor, the travel demand on TV Hwy and the surrounding transportation will grow. Therefore, how the highway and the corridor function influences livability and economic prosperity for the people living, working and doing business in Washington County. The corridor is an important part of the regional freight network and hence, the regional economy; moving freight by truck and rail effectively through the corridor is an important part of the regional commerce.

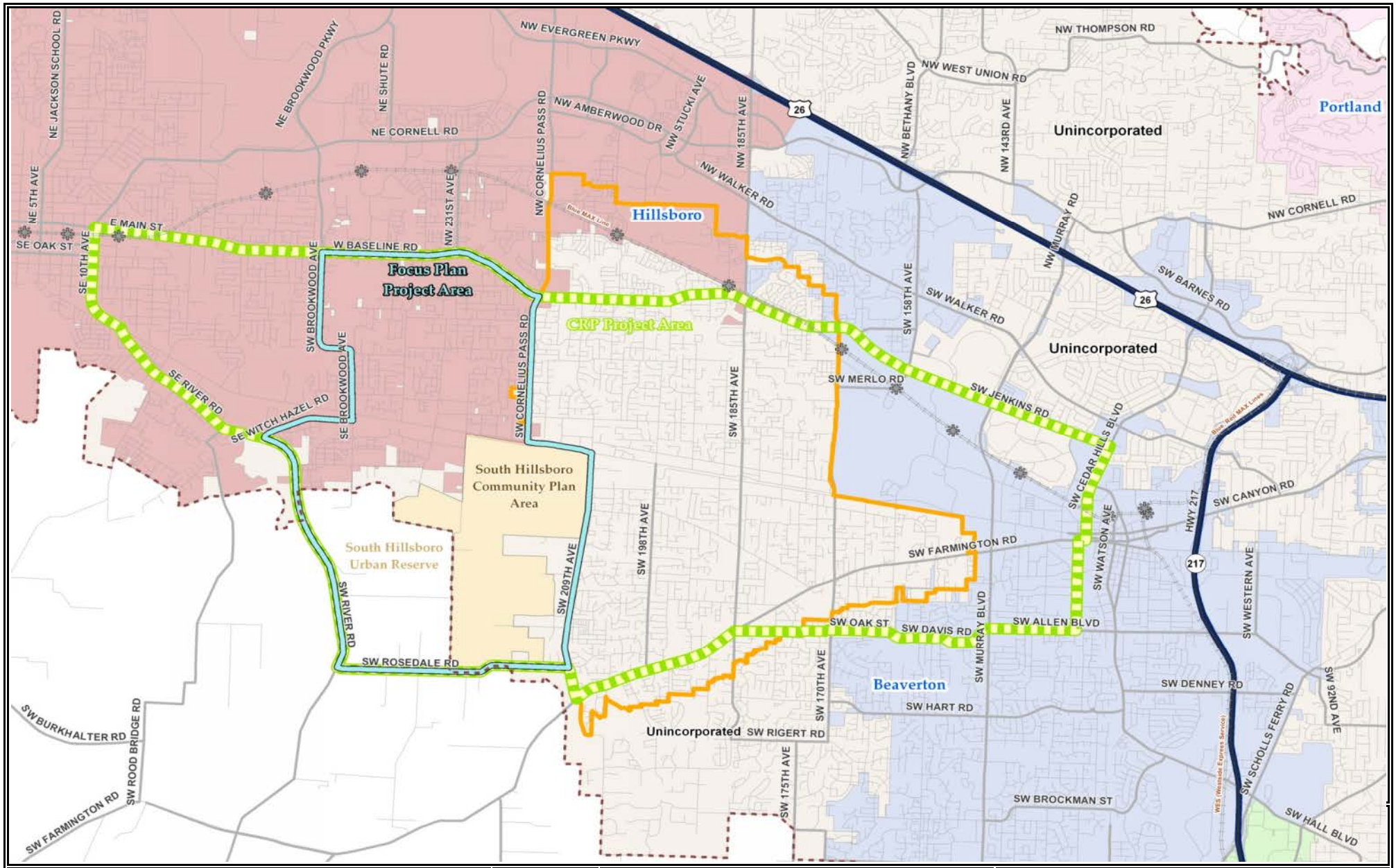
Needs

Appendix A, Issues Map, provides an overview of transportation issues in the TVCP Project Area. For the purpose of this report, needs are defined as multimodal transportation system gaps and/or deficiencies. Gaps are missing links or barriers in the planned system for any mode that functionally prohibits travel by a given mode (e.g., missing sidewalks). Deficiencies include facilities or services that fail to meet applicable standards (e.g., mobility or street design standards). Environmental justice populations, youth, seniors, and people with disabilities were considered when identifying the project needs. It is important to note that the TVCP will balance a demand-based need for accommodating vehicles with fiscal constraints and the interest of the broader communities in improving livability and transportation choices.

The RTP identifies regional needs for Mobility Corridor 24 – Beaverton to Forest Grove, which was part of the impetus for the TVCP (Appendix C). The Mobility Corridor 24 includes a larger area than the project area. All of the needs from the RTP applicable to the project are represented in the needs for the project that are provided below.

In addition, Title 2 of the Metro Regional Functional Plan, section 3.08.210 Transportation Needs, specifies that a determination of transportation needs must be consistent with goals for non-single occupancy vehicle (SOV) trips. Table 3.08-1 Regional Non-SOV Modal Targets (Share of average daily weekday trips for the year 2035) provides the following goals for the 2040 design types in the project area:

- Corridor (TV Highway) - 45%-55%
- Regional Center (Hillsboro and Beaverton) - 45%-55%
- Town Center (Aloha) - 45%-55%
- Neighborhoods (areas north and south of TV Highway between Beaverton, Aloha, and Hillsboro) 40%-45%



TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

North

TV Highway Corridor Plan (TVCP)

- CRP Project Area
- Focus Plan Project Area
- South Hillsboro Community Plan Area
- Beaverton
- Hillsboro
- Portland
- Tigard
- Metro Urban Growth Boundary
- Aloha-Reedville Study Area
- Unincorporated Areas within UGB
- Light Rail Stops
- Light Rail

Data Sources:
Metro RLIS, 2011
Oregon Department of Transportation, 2011
Washington County, Oregon, 2011

Figure 1

Study Area

TV Highway Corridor Plan - Traffic Analysis

TV HIGHWAY CORRIDOR PLAN

OREGON DEPARTMENT OF TRANSPORTATION

WASHINGTON COUNTY OREGON

CITY OF HILLSBORO

DAVID EVANS AND ASSOCIATES INC.

North

Legend

- TV Highway Corridor Plan (TVCP) Boundary
- City Limits
- Railroad
- Improve Intersection Safety
- Improve Intersection Capacity
- Improve Roadway Connectivity
- Improve Mobility and Reliability[1]

1. Roadways over capacity in 2035 Hillsboro Travel Demand Model with 2012 UGB Land Use

Figure 2

Existing and Future Motor Vehicle Needs

TV Highway Corridor Plan

A summary of deficiencies and needs was compiled from information in the Existing Transportation Conditions Report (DEA, 2011), preliminary data from the Metro 2035 State RTP travel demand model, and public input (input from stakeholder interviews and public meetings held on November 2, 2011, and November 8, 2011). It is assumed that if no improvements are made, the deficiencies that have been identified from existing conditions would remain as deficiencies and the condition could potentially worsen.

Safety

Based on data gathered, observations, and input from community stakeholders, safety is a critical issue for the TVCP to address. The ODOT Crash Analysis and Reporting Unit database includes records for 1,899 crashes along TV Hwy in the TVCP Project Area between January 1, 2005, and December 31, 2009. For more detailed information about safety, please refer to the Existing Transportation Conditions Report. The data in that report highlights the corridor as having a high incidence of traffic crashes, as well as serious injuries and fatalities, with numerous locations showing a higher than average (compared to similar facilities) crash frequency. There are approximately 14 study intersections along the corridor that have on average experienced more than 10 crashes per year, for a period of 5 years. Furthermore, as shown in Figure 2, there are six study intersections that have a crash rate of greater than 1.0 (per million entering vehicles), which is a measure that adjusts for volume of traffic .

Therefore, there is a need to improve the safety of public transportation facilities for all modes of travel through the corridor.

Bicycles

Active transportation - transportation powered by human energy - and the regional active transportation network is the system of on- and off-street bicycle and pedestrian facilities that is well connected to the public transportation system that affords mobility to people without access to a car. Metro is developing an Active Transportation Plan (ATP) that will identify a primary regional network, plus policies that encourage active transportation. The TVCP will inform the ATP with recommended and prioritized actions to promote active transportation.

TV Hwy is currently identified as a Regional Bikeway on the 2035 RTP (Figure 2.22 of the RTP). The following excerpt from the RTP describes the purpose of Regional Bikeways: "….provide for travel to and within the Central City, Regional Centers, and Town Centers. Arterial streets provide direct routes that connect to 2040 Target Areas. Cyclists tend to travel on arterial streets when they want to minimize travel time or access destinations along them."

Connectivity Gaps: TV Hwy and Baseline Rd are major continuous east-west bicycle routes, with bicycle lanes through most of the TVCP Project Area[2]. These bike facilities, however, are not suitable for a wide range of comfort levels in that the lanes may be poorly marked or too close to fast-moving vehicles. There are significant areas north and south of TV Hwy that do not have complete parallel east-west bicycle routes to connect downtown Beaverton to downtown Hillsboro (Figure 3). In addition, SW Murray Boulevard provides the only continuous north-south bicycle lanes through the TVCP Project Area. Other major north-south streets in the area—SW 185th and SW 170th—offer bicycle lanes on one side of TV Hwy or the other, but not on both sides. West of SW 185th Avenue, there are only short

[2] *With the exception of an area in downtown Beaverton, TV Hwy is a labeled as a continuous route per Metro, Beaverton, and Hillsboro guidelines.*

segments of streets with bicycle lanes. The railroad on the south side of TV Hwy limits much of the north-south connectivity within the TVCP Project Area.

Therefore, there is a need to fill gaps in the bicycle network for both east-west and north-south routes.

Safety: Limited bicycle facilities in the TVCP Project Area result in bicyclists and pedestrians competing for roadway shoulders and sidewalks, which increases potential conflicts between users. Approximately one-third of all fatal and serious injury crashes occurring between January 1, 2005, and December 31, 2009, along TV Hwy involved a bicycle or pedestrian. Numerous residents in the area have provided input that indicates that they do not feel safe riding a bicycle on TV Hwy or on some of the other connecting streets with relatively high traffic volumes and narrow paved areas for bicyclists (e.g., 170th and 209th Avenues). Bicyclists have been observed riding on sidewalks, areas adjacent to the railroad track, or in the wrong direction in bicycle lanes.

Therefore, there is a need to improve existing bicycle facilities and identify viable alternative bicycle routes to high traffic roadways, including trails and other off-street facilities, within the TVCP Project Area.

Pedestrians

The 2035 RTP currently designates TV Hwy as a Mixed Use Pedestrian Corridor—an area where creating a pedestrian-friendly environment with strong transit connections is a priority. The RTP provides the following design summary for pedestrian improvements:

> These corridors should be designed to promote pedestrian travel with such features as wide sidewalks with buffering from adjacent motor vehicle traffic, street crossings at a minimum of 530 feet—though an ideal spacing is 200 to 400 feet where possible (unless there are no intersections, bus stops or other pedestrian attractions), special crossing amenities at some locations, special lighting, benches, bus shelters, awnings and street trees. This designation includes multi-modal bridges.

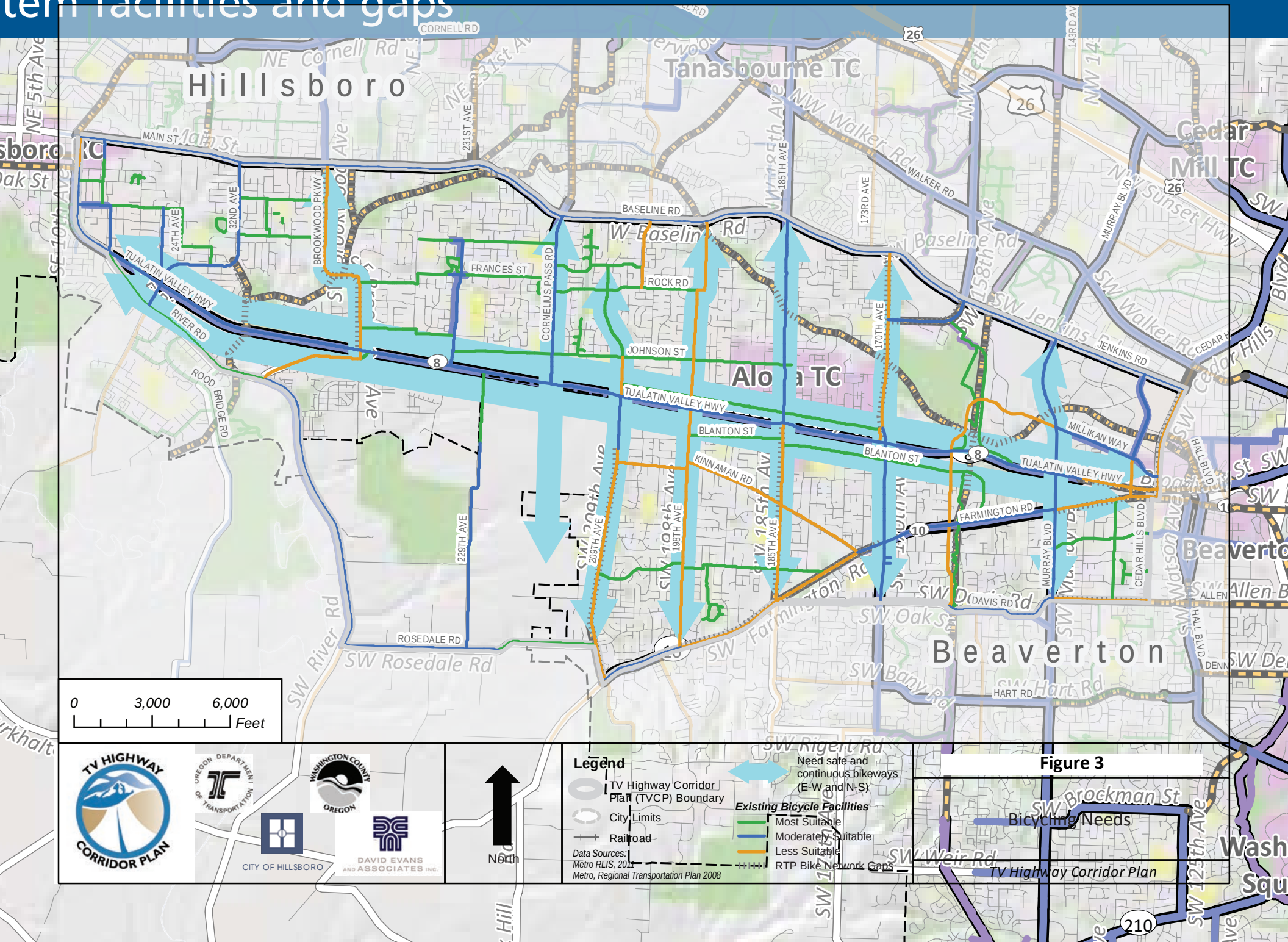
Gaps in Network: Within the TVCP Project Area, the availability and quality of sidewalks varies considerably, with some areas having established sidewalks on both sides of the street (such as Baseline Road between 10th Avenue and Brookwood Avenue, and Farmington Road between 198th and 209th Avenues), while the majority of streets within the TVCP do not. Sidewalks are entirely missing on one or both sides of TV Hwy and other arterials and collectors within TVCP Project Area, such as SW 198th, SW 185th, and SW 170th Avenues and the majority of Farmington Road, resulting in critical gaps in the pedestrian network. Similarly, of the sidewalks that do exist, many are substandard or are too narrow for comfortable use.

Therefore, there is a need for a more complete sidewalk network consistent with state, regional, and local designations and standards.

Pedestrian Access to Transit: Pedestrian crossings of high traffic facilities, including TV Hwy and other arterials in the TVCP Project Area, are sometimes far apart, making it difficult to access transit stops. Additionally, the lack of sidewalk facilities makes it difficult for pedestrians to safely access transit services.

Therefore, there is a need for additional safe pedestrian access to transit within the TVCP Project Area and/or a re-examination of transit stop locations.

tem facilities and gaps



Crossing TV Hwy: In general, the spacing between signalized intersections along TV Hwy is convenient for pedestrians at the west and east ends (in Hillsboro and Beaverton), but is inconvenient in the middle of the corridor. For example, the distance between signalized crossings in some areas exceeds one-quarter mile, a distance that is inconvenient for most pedestrians who desire to travel the shortest distance to transit stops or other destinations.

Therefore, in an area with high pedestrian demand, there is a need for more frequent and safe crossings of TV Hwy.

Pedestrian Access to Neighborhoods and Local Destinations: The railroad is a barrier to safe pedestrian access between TV Hwy and neighborhoods situated south of the highway. Many informal foot paths (and observations of pedestrians using them) occur along the railroad track, particularly near bus stops.

Therefore, there is a need for additional safe and accessible crossings of the railroad tracks and a potential evaluation of bus stop locations.

Facilities and Amenities: Pedestrian facilities within the TVCP Project Area lack adequate lighting, wayfinding signage, benches, and other amenities. Without proper lighting, it can feel unsafe to walk at night, which deters people from walking or using transit.

Therefore, there is a need for improved pedestrian facilities and amenities in the TVCP Project Area.

Pedestrian Safety: Between 2005 and 2009, there were 57 pedestrian-related crashes along the highway in the TVCP Project Area. In particular, there are three segments along the corridor that have a pronounced frequency of bicycle and pedestrian crashes (five or greater from January 1, 2005, through December 31, 2009)). These segments are:

- Between 170th Avenue and 185th Avenue,
- Between 185th Avenue and 198th Avenue,
- Between Brookwood Avenue and Cypress Street.

Therefore, there is a need for improved pedestrian facilities and street design to safely accommodate all modes of travel within the TVCP Project Area.

Transit

The 2035 RTP identifies the corridor as a Frequent Bus corridor. Frequent service is defined as:

> Frequent service transit has service running every 15 minutes or better from the early morning to late in the evening, seven days a week. Its elements include additional service, reliability improvements, distinctive branding, improved passenger facilities at bus stops, enhanced pedestrian access and modern low-floor buses. Frequency is especially important for attracting riders who take short, local trips, because the time riders spend waiting for a bus to take a short trip is a proportionately larger component of the total travel time than it is for longer trips.

Additionally, frequent service corridor areas are identified as needing transit facility and amenity improvements and treatments such as “transit signal priority, covered bus shelters, curb extensions, special lighting, enhanced sidewalks, protected crosswalks and bikeways.”

TV Hwy has been designated by Metro as a Next Phase Regional Priority Corridor for High Capacity Transit (HCT). A Next Phase Regional Priority corridor is defined as a corridor "where future HCT investment may be viable if recommended planning and policy actions are implemented." HCT vehicles stop less frequently, travel faster, have more frequent service, and carry more passengers than local service transit such as typical bus lines. HCT can be any form of public transit such as light rail, bus rapid transit, and commuter rail that has exclusive right-of-way and/or non-exclusive right-of-way.

Service Frequency: In the TVCP Project Area, the #57 bus provides frequent bus transit. However, due to budget shortfalls, effective September 2, 2012, bus service on lines 47 and 48, which provide east-west service and connections north of the project area, are being combined to reduce overlap along NW 185th Avenue. Line 67, which provides north-south service north of the project area, would end at the Merlo Road/SW 158th Avenue MAX Station instead of running to Beaverton Transit Center.

A common theme expressed by transit riders and identified in the 2035 RTP is that Tri-Met bus service along TV Hwy should be more frequent. Stakeholder input also identified a need for stronger north-south transit service and connections. Additionally, considering the expected growth in the TVCP Project Area and the expanded Urban Growth Boundary (UGB), ridership in the TVCP Project Area is anticipated to increase.

Therefore, there is a need for increased transit service and connectivity in the TVCP Project Area.

Access to Transit: Transit stops line both sides of the highway, creating a need to cross the highway. The Pedestrian Safety Plan - Tualatin Valley Highway (OR 8) Murray Boulevard to Brookwood Avenue (August 2007), prepared by David Evans and Associates, Inc., provides that transit stops located at intersections benefit from crosswalks and shelters. Mid-block stops located on the north side of the highway have better pedestrian access and waiting areas because of the sidewalk, and better lighting associated with adjacent development. However, stops located on the south side of the roadway tend to have unimproved access, tend to be difficult to see at night, and waiting areas are small, if they exist at all. In some locations, small patches of sidewalk are provided; in other locations, pedestrians wait in the bike lane or sit on the guard rail. There are pedestrian-actuated signals near stops in several locations, including between SE 44th and 45th Avenues and at SW 178th Avenue.

Therefore, there is a need for improved and safer access for pedestrians and bicyclists to transit stops.

Facilities and Amenities: Many transit stops in the TVCP Project Area lack covered bus stops, lighting, and bicycle storage. Additionally, due to a lack of sidewalks and the proximity to the railroad tracks, many of the transit stops lack even the most basic pedestrian facilities. Stops without proper coverage or lighting create an unsafe feeling for transit riders, which may dissuade them from using transit.

Therefore, there is a need for improved transit facilities and amenities in the TVCP Project Area.

Motor Vehicles

Existing traffic conditions, including existing traffic volumes, traffic operations analysis, and a review of historical crash patterns and other pertinent safety data and preliminary future year data from the Metro 2035 State RTP travel demand model were used to identify the vehicle needs in the TVCP Project Area.

Traffic Volumes and Congestion: The Motor Vehicle Travel map (Figure 2) highlights traffic volumes and/or congestion on the main highway and some of the parallel arterial streets in the AM and PM peak travel periods (7AM to 9AM and 4PM to 6PM, respectively). TV Hwy carries heavy volumes of traffic and experiences spots of heavy congestion in the westbound direction between OR 217 and 209th Avenue. The parallel arterials carry lower volumes of traffic compared to TV Hwy and experience more moderate congestion in the westbound direction. Currently, the most significant congestion within the TVCP Project Area occurs along TV Hwy in three areas: (1) downtown Hillsboro near Baseline Road, (2) between Cornelius Pass and 170th Avenue, and (3) at Murray Boulevard. In the future, the traffic demand for these congested sections will likely exceed the capacity of the roadway, resulting in increased queuing and congestion regardless of intersection operations or access density.

Therefore, there is a need to manage capacity within the parameters of an urban arterial through targeted operations improvements or an alternative mobility standard.

Access: The majority of the land use along TV Hwy, especially on the north side, has been developed with driveway access directly off of TV Hwy. Many access points along TV Hwy, particularly driveway approaches, are close together, resulting in more conflict points, and they do not conform to ODOT access spacing standards.

Therefore, there is a need to bring accesses closer to conformance with current ODOT spacing standards, especially at high crash locations, and to implement an access management plan for the corridor.

Connectivity Gaps: The 2035 RTP identifies gaps in the arterial network in the Mobility Corridor (24), specifically gaps south of TV Hwy between SW 209th Avenue and SW River Road for both north-south and east-west connections. Compared to the street system design standards3 found in the RTP, which prescribe spacing of major arterials at one mile and minor arterial and collectors at 0.5 mile, there are east-to-west arterial connectivity gaps both north and south of TV Hwy and north-to-south arterial gaps, particularly in the midsection of the project area between SW 170th Avenue and SW River Road.

Therefore, there is a need to improve connectivity and complete the street network.

Intersection Operations: As shown in Figure 2, six of the existing signalized study intersections along TV Hwy perform worse than operational standards for the overall intersection during the PM peak hour, and two do not meet operational standards for the overall intersection during the existing AM peak hour. These intersections are concentrated between SW Murray Boulevard and Cornelius Pass Road. The existing conditions report contains additional detail on intersection operations.

In the street network immediately surrounding TV Hwy, intersection functions are acceptable under existing conditions. However, north of TV Hwy, during the PM peak hour, six of the thirteen intersections do not meet operational standards, with volume-to-capacity (v/c) ratios at 1.0 and a Level of Service (LOS) of LOS F. All of the failing intersections intersect Baseline Road or SW Jenkins Road.

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[3] *TITLE 1: TRANSPORTATION SYSTEM DESIGN, 3.08.110 Street System Design C. "To improve connectivity of the region's arterial system and support walking, bicycling and access to transit, each city and county shall incorporate into its TSP, to the extent practicable, a network of major arterial streets at one-mile spacing and minor arterial streets or collector streets at half-mile spacing…"*

During the PM peak hour, the intersections of Farmington Road at SW 185th Avenue and SW Murray Boulevard perform worse than operational standards. Both signalized intersections have a v/c ratio greater than or equal to 1.0 and LOS F.

The future year analysis for the TV Hwy Corridor has not yet been completed. However, preliminary data from the Metro 2035 regional model shows an increase of approximately 10 to 30 percent in traffic volume on TV Hwy from 2010 to 2035, with more growth occurring at the west end of the project area. With that level of anticipated growth in traffic volume, it is projected that future year 2035 roadway operations will be near or at capacity from 209th Avenue to OR 217 and from Baseline Road in Downtown Hillsboro to Brookwood Avenue.

Additional future year 2035 congestion is also anticipated on the surrounding street network as drivers look for alternative routes to TV Hwy. The regional model indicates that Brookwood Avenue, River Road, and Farmington Road would see notable increases in congestion.

Therefore, there is a need to improve capacity at intersections in the TVCP Project Area both on TV Hwy and at the adjacent street network intersections, to meet operational standards as part of a system-wide solutions package.

Highway Freight

Freight Movement: Freight is a critical transportation and economic component of the TV Hwy Corridor. TV Hwy (OR 8) is designated as an ORS 366.2154 route from OR 217 to OR 47. This means that truck freight and oversized loads that can get through the TV Hwy Corridor today need to be able to get through tomorrow. The "Guidelines for Implementation of ORS 366.215 No Reduction in Vehicle-Carrying Capacity" outlines a process for working with freight stakeholders. The TVCP will engage freight stakeholders throughout the plan process to ensure consistency with ORS 366.215

With the roadway network functioning below operational standards, it takes more time to transport products, which subsequently increases operating costs. From a regional economic perspective, the value of time for freight is orders of magnitude higher than for personal vehicle travel.

Therefore, there is a need to maintain overall corridor operations and acceptable geometric conditions for freight vehicles to ensure that TV Hwy is consistent with local and regional freight goals, and to ensure consistency with ORS 366.215.

Freight Routes: In the TVCP Project Area, heavy vehicle percentages range from 7 to 9 percent. There are multiple "through truck routes" designated in Washington County, most notably Cornelius Pass Road from TV Hwy to the Washington/Multnomah county line, 209th Avenue from TV Hwy to Farmington Road, and 185th Avenue from Farmington Road to US 26. Additionally, a number of roadways in the TVCP Project Area do not permit large trucks traveling through them.

Therefore, there is a need to maintain the operations of the "through truck routes" within the TVCP Project Area.

[4] *See Oregon Revised Statutes (ORS) 336.215.*

Railroad Freight

Railroad Freight Movement: Directly south of and parallel to TV Hwy, the PNWR operates no more than one freight train per day along a section of its 520-mile short line railroad, which interchanges with the Albany & Eastern Railroad, BNSF Railway, Central Oregon & Pacific Railroad, Coos Bay Rail Link, Hampton Railway, Port of Tillamook Bay Railroad, and Union Pacific Railroad. In 2011, PNWR was awarded a *Connect Oregon III* Grant to complete the "Banks Rail Connection," which will increase the number of trains using this section to a total of six per day.

Therefore, there is a need to maintain rail corridor operations to accommodate for future growth in railroad freight.

Safety: The rail corridor is a barrier between TV Hwy and the communities to the south. Without safe at-grade or grade-separated crossings, the rail corridor poses a safety threat to people moving within the corridor.

Therefore, there is a need to educate people about rail safety and improve the railroad crossings for vehicles, pedestrians, and bicyclists.

Land Use

The RTP recommends supporting transit by laying a regulatory framework for transit-supportive development and a well connected street system to allow convenient bicycle and pedestrian access. The RTP also identifies Mixed-Use Pedestrian Corridors as:

> Located along good-quality transit lines and will be redeveloped at densities that are somewhat higher than today. These corridors will generate substantial pedestrian traffic near neighborhood-oriented retail development, schools, parks and bus stops.

The Metro 2040 Growth Concept also designates:

- Aloha as a Town Center: Town centers are intended to be areas with a strong sense of community that are well-served by transit and provide localized services to people within a two- to three-mile radius.
- Beaverton and Hillsboro as Regional Centers: As centers of commerce and local government services serving a market area of hundreds of thousands of people, regional centers become the focus of transit and highway improvements. They are characterized by two- to four- story compact employment and housing development served by high-quality transit.
- The remaining areas consist of "neighborhoods" and several "parks and open space" designations, the largest of the latter being the Tualatin Hills Nature Park located north of TV Hwy and east of 170th Avenue.

The land use composition of the TVCP Project Area is primarily residential development, with numerous cul-de-sacs behind the commercial uses along TV Hwy. Existing land uses in the TVCP Project Are[a] are a mix of residential, commercial, and industrial uses, and public parks and open space areas, public and private schools, and undeveloped rural lands. Residential uses situated north and south of TV Hwy comprise the majority of the TVCP Project Area, with predominantly single-family lot subdivision neighborhoods and clusters of multi-family dwellings, parks, and schools dispersed among them. Commercial land uses—predominantly retail centers—line the north side of TV Hwy, and a mix of industrial and commercial uses are in areas adjoining the south side of TV Hwy.

Infrastructure: Current land use patterns in the TVCP Project Area are auto-dependent and largely segregated by use (for example, commercial, residential, and industrial). The land use composition of the TVCP Project Area is primarily residential development, with numerous cul-de-sacs behind the commercial uses along TV Hwy. Cul-de-sacs limit the number of through streets in the area, thus limiting the possibility for pedestrian and bicycle connectivity. The railroad tracks also create a barrier between the numerous residential communities to the south of TV Hwy and the services located along TV Hwy.

Therefore, there is a need to improve the street network and address connectivity barriers to provide more succinct travel routes for those driving, walking, cycling and using transit.

Land Use Plans and Zoning: TV Hwy passes through several communities and jurisdictional boundaries with different applicable plans and zoning code requirements. Currently, the corridor is auto-focused, with many parking lots fronting TV Hwy. In sections of the corridor, zoning is generally by single-use (see Appendix C Land Use, Transit and Pedestrian Map), often commercial uses adjacent to TV Hwy and residential behind it. This zoning strategy does not promote a mixed-use, transit- and pedestrian-supportive environment. In areas where zoning allows for more mixed-use development, such as areas zoned Community Business, which allows up to 25 dwelling units per acre, the existing development market and current economic environment in general may be stalling such development. Infrastructure investment (e.g., investment in sidewalks, bicycle lanes and paths, pedestrian/bicycle bridges, pedestrian signals, and medians and pedestrian "refuges,") can support a transit- and pedestrian-supportive environment, thus providing stimulation for mixed-use development.

Therefore, there is a need for plan, zoning, and development code amendments and design guidelines in support of an integrated facility across communities, and infrastructure investment that supports transit- and pedestrian-supportive development.

Improvement Concepts

There are many ways to address the needs, or deficiencies, identified in the previous section. Table 2 presents, for each travel mode and land use, the improvement concepts that could be used along TV Hwy to address the deficiencies, as well as additional concepts that could help reduce auto reliance and promote alternative modes of travel. The key to successfully evaluating improvement concepts is to explore the trade-offs associated with implementing various refinements and alternatives. For each of the potential improvements shown below, a set of pros and cons is provided to indicate the benefits and limitations of its implementation. It is not expected that all of the improvement concepts listed in this table would be implemented along the corridor; rather, the list provides a range of concepts that can be considered for implementation based on the applicability and appropriateness of the concept to address location-specific needs. Additionally, it is assumed that because TV Hwy is a multimodal corridor with needs for all modes, there will be improvements for each mode in support of a balanced multimodal corridor and to address the evaluation criteria established for the TVCP.

Table 2. Improvement Concepts

Improvement Focus	Improvement Concepts	Pros	Cons
Bicycle	**Provide bicycle user amenities** *Includes such improvements as wayfinding signage and bicycle-actuated signalized crossings*	• Enhances bicycle environment • Increases safety for bicyclists • Increase desirability for all levels and abilities of cyclists	• May require additional right-of-way to install secure bicycle parking, additional signage, etc.
	Enhance bicycle facilities on TV Hwy	• Better connectivity to key destinations within the TVCP may shift mode choice toward bicycling • Safer bicycle environment • Enhanced facilities serve as a traffic calming measure	• High motor vehicle volumes and fast speeds on TV Hwy create an uninviting bicycle environment • Some additional right-of-way may be necessary to complete bicycle network • Bicycle lanes along TV Hwy might conflict with right-turning vehicles
	Develop a viable parallel route to TV Hwy	• Better connectivity to shift mode choice toward bicycling • Increases connectivity throughout the TVCP Project Area (Goal #2)	• Additional right-of-way may be required to develop this bicycle route
	Develop north-south bicycle networks	• Better connectivity may shift mode choice toward bicycling • Increases connectivity throughout the TVCP Project Area (Goal #2)	• May require additional right-of-way to implement greater bicycle networks • May require new at-grade or grade-separated rail crossings for bicyclists
	Separated grade crossings	• Better operations for rail and motor vehicles • Safer bicyclist environment by removing potential pedestrian/ auto/rail conflicts	• Longer crossing times for bicyclists • Significant cost to implement • May require additional right-of-way • Loss of access to businesses on north-south streets
Pedestrian	**Upgraded pedestrian facilities** *Includes lighting, wayfinding signage, benches, etc.*	• More comfortable pedestrian environment to shift mode choice • Safer pedestrian environment (Goal #3) • Consistent with Goal #5 to improve the visual appearance of TV Hwy	• High motor vehicle volumes and fast speeds on TV Hwy create an uninviting pedestrian environment • Some additional right-of-way may be necessary to complete pedestrian network
	Complete sidewalk network along TV Hwy and other east-west, north-south arterials and collectors	• Better connectivity to potentially shift mode choice to walking • Better connectivity from TV Hwy to connecting land uses promotes access to local businesses and communities • Safer pedestrian environment • Increases access to transit and to local businesses and housing	• Enhanced sidewalks may require additional right-of-way • Railroad on south side of TV Hwy limits sidewalk implementation opportunities in some areas

Improvement Focus	Improvement Concepts	Pros	Cons
	Additional or safer crossings of TV Hwy	• Safer pedestrian environment • Provides more frequent crossing opportunities along TV Hwy • Decreases travel time for bicyclists and pedestrians	• Implementation cost may be high, especially for grade-separated crossings • Additional crossings may negatively impact transit and vehicular traffic operations
	Implement pedestrian refuges on TV Hwy *Enables 'two-stage' roadway crossing opportunities*	• Provides additional crossing opportunities along TV Hwy • Better connectivity and safety for pedestrians	• May require additional right-of-way to implement a center median for a pedestrian refuge
	Widen sidewalks within TVCP Project Area	• More comfortable pedestrian environment to shift mode choice • More comfortable for users • Safer pedestrian environment (Goal #3)	• May require additional right-of-way to implement
	Implement landscape buffer between sidewalks and streets	• More comfortable pedestrian environment to shift mode choice • Consistent with Goal #5 to improve the visual appearance of TV Hwy	• May require additional right-of-way to implement
	Separated grade crossings	• Better operations for rail and motor vehicles • Safer pedestrian environment by removing potential pedestrian /auto/rail conflicts	• Longer crossing times for pedestrians • Significant cost to implement • May require additional right-of-way • Americans with Disabilities Act issues • Difficult to ensure that pedestrians use the elevated crossing
Transit *Existing System Enhancements*	**Improve bus stop amenities** *Includes bus shelters, lighting, wayfinding signage, real-time bus arrival info, CCTV cameras, etc.*	• More attractive pedestrian environment to shift mode choice • Consistent with Goal #5 to improve the visual appearance of TV Hwy • Safer bus stops meets Goal #4 to enhance safety for all users and modes along and across TV Hwy	• May require additional right-of-way to implement
	Implement signal priority at key intersections	• Faster, more efficient and reliable transit travel times • Consistent with Goal #1 to improve mobility for multimodal travel through and within the TVCP Project Area	• Limited effectiveness if roadway congestion restricts transit vehicle movement
	Enhance existing bus service *(north-south; line #57 on TV Hwy)*	• Faster, more efficient, and reliable transit travel times • Consistent with Goal #1 to improve connectivity to key destinations within and through the TVCP Project Area	• Costly to operate and maintain

Improvement Focus	Improvement Concepts	Pros	Cons
	Add a special bus-only traffic lane along TV Hwy	• Faster, more efficient, and reliable transit travel times • Consistent with Goal #1 to improve mobility for multimodal travel through and within the TVCP Project Area	• Installation costs may be high • Would likely require significant additions to right-of-way to implement
	Add bus pullouts	• Buses can quickly exit traffic stream • More of a buffer between bus riders and high speed traffic during boarding and alighting and waiting for buses	• Would likely require additions to right-of-way to implement • Buses have difficulty re-entering traffic
Transit *High Capacity Transit (HCT) along TV Hwy*	**Implement fixed or flex guideway system** *Includes light rail transit, streetcar, or bus rapid transit*	• Increases connectivity throughout the TVCP Project Area and beyond (Goal #2) • Reliable and predictable travel times • Encourages transit-oriented development to enhance livability	• Developed land uses and limited right-of-way leave little room for dedicated alignment for HCT system • Expensive to implement, operate, and maintain • May negatively impact property access points • HCT may require consolidation of transit stop locations, thereby reducing transit access, however HCT (e.g. express or "rapid" bus service) overlaid onto a local route may require consolidation of stop locations" • Switching a lane to bus-only traffic may worsen vehicular operations throughout the corridor
Motor Vehicle	**Incorporate Intelligent Transportation Systems** *Includes signal priority, traveler information signs, etc.*	• Potential to improve corridor operations • Improves distribution of information to travelers	
	Access management through driveway consolidation	• Reduces pedestrian and motor vehicle conflict points • Reduces turning opportunities, which thereby reduces vehicular delay • Improved safety by eliminating conflict points	• Left-turn access may be modified or eliminated • Coordination between businesses and property owners can be difficult

Improvement Focus	Improvement Concepts	Pros	Cons
	Widen TV Hwy at specific intersections[5]	• Improves operations at key intersections • Reduces delay for all modes • Improves travel time reliability • Improved emergency vehicle response times • Reduces shift of arterial traffic onto local roadway network • Consistent with Goal #1 to improve the mobility for multimodal travel through and within the TVCP Project Area	• Not in line with the arterial classification as chosen by the Policy Group • Cost of implementation may be high • May negatively impact property access points • May negatively impact pedestrian/bike crossings • Railroad on south side of TV Hwy creates a barrier to expansion
	Add capacity for north-south and parallel roads	• Added capacity will improve corridor operations, especially with projected population growth • Will minimize amount of traffic using TV Hwy for north-south trip (jumping on and off), thereby improving operations on TV Hwy itself • May reduce vehicular travel times	• Significant costs to implementation, including high right-of-way costs • Railroad on south side of TV Hwy creates a barrier to expansion • Additional lanes are not consistent with "arterial" designation • May negatively impact property access points
Rail Freight	**Public rail safety education**	• Consistent with Goal #3 to improve the safety for all users and modes within the TVCP Project Area • Encourages facility users to be more cautious around tracks	
	Consolidated and separated grade crossings of tracks	• Better operations for rail • Safer pedestrian environment by removing potential conflicts between rail and other modes	• Longer crossing times for pedestrians • Significant cost to implement • May require additional right-of-way • Could increase the number of informal rail crossings
Land Use Principles	**Transit-oriented development**	• Establishes pedestrian linkages to connect transit facilities to surrounding facilities • Consistent with Goal #5 to improve the visual appearance of TV Hwy • Consistent with Goal #7 to strengthen and support economic vitality and well-being	• Requires a substantial investment • May require additional right-of-way • May require special development standards

[5] *Due to the arterial classification of TV Hwy, the option to add through lanes on TV Hwy will not be considered as part of the solutions package.*

Improvement Focus	Improvement Concepts	Pros	Cons
	Pedestrian-oriented development	• Consistent with Goal #5 to improve the visual appearance of TV Hwy • Establishes pedestrian linkages to create a more desirable walking environment • Dense development promotes walking and may shift mode choice • Consistent with Goal #7 to strengthen and support economic vitality and well-being	• Requires a substantial investment • May require additional right-of-way • May require special development standards
All Modes	**Transportation Demand Management** *Numerous options to reduce peak-period auto demand, including:* • *Parking pricing* • *Telecommuting* • *Subsidies for alternative mode usage* • *Employer incentive programs* • *Alternative work schedules* • *High-Occupancy Vehicle (HOV) Lane*	• Leads to increased average vehicle occupancy, and mode shift from auto to transit. • Reduces auto reliance and number of vehicles demanding road capacity • Improves air quality and lowers greenhouse gas (GHG) emissions • Consistent with Goal #7 to reduce overall and per capita vehicle miles traveled (VMT) in the TVCP Project Area • Opportunity to be consistent with state and regional comprehensive strategies to reduce GHG emissions (Goal #9)	• Requires people to change their travel patterns and behaviors • Difficult to coordinate and implement • Requires funding for subsidies and incentive programs

Opportunities and Constraints

Opportunities and constraints are associated with advancing each of the potential improvement concepts within the corridor. Opportunities arise from the ability to implement the improvement with very little negative impact to other transportation modes, land use in the corridor, or the community. Constraints or limitations occur when the existing environment is not conducive to implementing improvements and/or the impacts of implementation conflict with the goals of the project. Appendix A shows the existing opportunities and constraints in the project area.

Strategy for Improvement Concepts

With so many different potential improvements available, it is important to develop a strategy to evaluate, prioritize, and rank the ease of implementation for those improvements. The potential improvements can be divided into three categories for evaluation:

Easily Implemented Improvements (Easy) are those types of improvements/strategies that are relatively easy to implement for a number of reasons, such as low cost, minimal impact to right-of-way, and minimal impact to modes of travel or land uses. The strategy is to first implement these easy types of improvements and then continue making improvements as opportunities allow and enough political backing exists.

Moderately Difficult Improvements (Medium) are those types of improvements/strategies that require some additional effort to implement because of challenges such as a right-of-way taking, the need for additional funding, and the time frame of the project. These types of improvements are typically larger projects and, although they can be time-dependent, can be accomplished within a relatively short

period of time. Moderately difficult improvements may have lower costs and may have funding opportunities that are readily available within the improvement plan timeline.

Challenging to Implement Improvements (Hard) represent types of improvements/strategies that take a significant effort to implement because of challenges related to funding requirements, significant impacts to adjacent properties, right-of-way, and the potential for multi-jurisdictional involvement. Typically these types of projects do not have complete local funding available. They also may be regional projects, require environmental assessments or impact statements, or require a significant public involvement process over an extended period of time.

Classification of Potential Improvements

The following table (Table 2) takes the improvement concepts listed in Table 1 and classifies them according to the categories discussed above.

Table 3. Improvement Concepts Classification

	Improvement Concepts	Easy	Medium	Hard
Bicycle	Enhance bicycle facilities on TV Hwy	X		
	Develop a viable parallel route to TV Hwy		X	
	Develop north-south bicycle networks		X	
	Separated grade crossings			X
Pedestrian	Upgrade pedestrian facilities	X		
	Complete sidewalk network along TV Hwy		X	
	Add safer crossings of TV Hwy		X	
	Implement pedestrian refuges on TV Hwy		X	
	Widen sidewalks within TVCP Project Area		X	
	Implement landscape buffer between sidewalks and streets		X	
	Separated grade crossings			X
Transit	Improve bus stop amenities	X		
	Implement signal priority at key intersections	X		
	Enhance existing bus service	X		
	Add bus pull-outs		X	
	Add a bus-only traffic lane along TV Hwy			X
	Implement fixed or flex guideway system such as light rail transit, streetcar, or bus rapid transit			X
Motor Vehicle	Incorporate Intelligent Transportation Systems	X		
	Access management through driveway consolidation		X	
	Widen roadway at specific intersections		X	
	Add capacity for north-south and parallel roads		X	
	Widen TV Hwy with additional through lanes[6]			X
Rail	Public rail safety education	X		
	Consolidated and separated grade crossings			X
Land Use Principles	Transit-oriented development (code amendments)		X	
	Transit-oriented development (market response)			X
	Pedestrian-oriented development (code amendments)		X	
	Pedestrian-oriented development (market response)			X
All Modes	Transportation Demand Management	X		

[6] *Because of the classification of TV Hwy as an Arterial, this option will not be considered as part of the solutions package.*

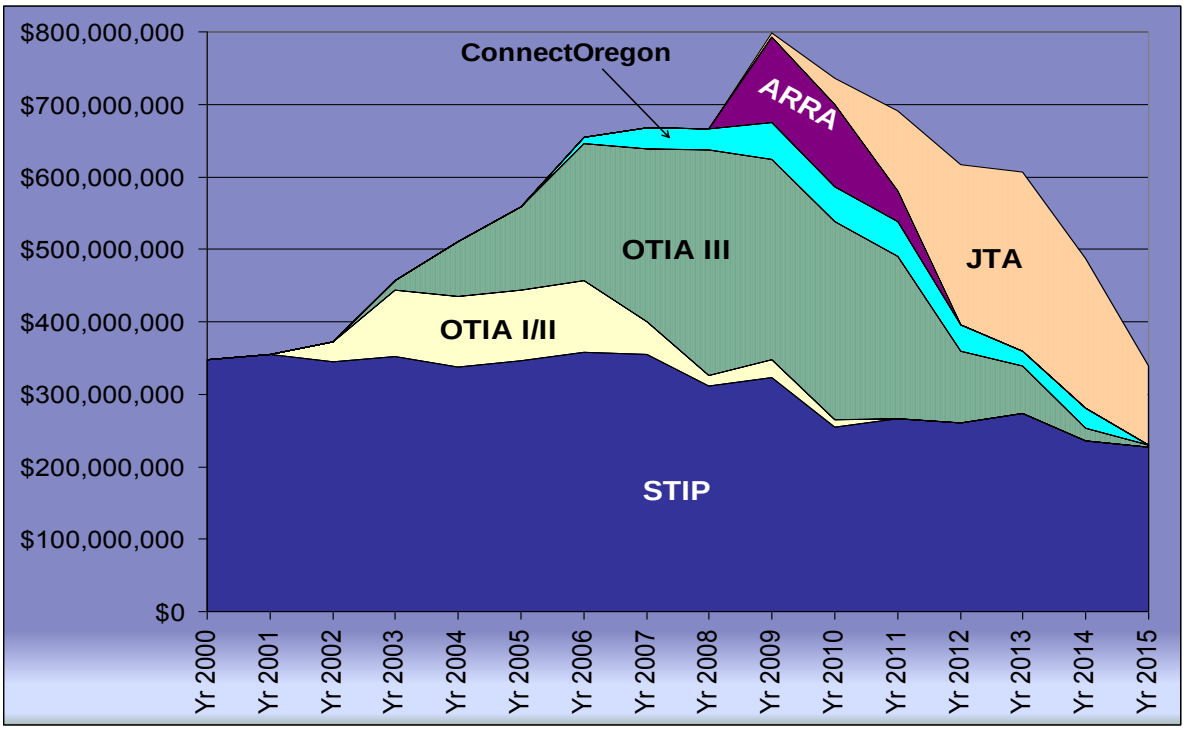
Financial Environment for Improvements

This section is a summary of information from ODOT, Washington County, and TriMet. The current and projected financial environment sets the stage for developing solutions with a priority focus on most affordable and easiest to implement solutions.

Established transportation funding programs that state and local governments administer predominantly comprise the current and foreseeable financial context for addressing transportation system improvement needs within and beyond the TVCP Project Area. While these financing and funding programs are severely constrained at all levels, this constrained financial environment is also a catalyst for opportunities to plan more realistically, and to strategically leverage funding through local and regional partnerships, and from nontraditional sources. For example, potential revenue from new development (e.g. South Hillsboro) and redevelopment through a special area transportation impact overlay fee may be available or promulgated for transportation improvement programs and projects in the TV Hwy Corridor.

The prolonged stagnant national, state, and local economic conditions and political stalemate on long-overdue national transportation funding legislation underpin the constrained financial environment for transportation infrastructure.

As a facility on the State Highway System, TV Hwy is eligible for maintenance and improvements programmed and funded through ODOT. As illustrated in the following graphic, ODOT faces substantial funding challenges that are projected to be exacerbated through the year 2015. ODOT's construction program budget is declining and is forecast to be half of current levels by 2015. Beyond 2015, ODOT's financial outlook is not clear.



Source: ODOT - "Six trends spell trouble for transportation funding" (11/08/2011) http://www.oregon.gov/ODOT/GOVREL/news/110811a.shtml.
Source Note: STIP -State Improvement Plan, OTIA - Oregon Transportation Investment Act (I,II, and III refer to funding phases of the Act, ARRA - American Recovery and Reinvestment Act, JTA - Jobs and Transportation Act

Multiple factors contribute to ODOT's long-term funding challenges, including:

- Failing State Highway Fund revenue
- Debt service obligations from the Oregon Transportation Investment Act (OTIA) and Jobs and Transportation Act (JTA) bond programs
- Unreliable federal funding
- Construction cost increases
- Increasing market share of fuel-efficient vehicles
- Lack of adequate, dedicated, and sustained funding for non-highway transportation modes

To address these funding constraints, ODOT is focused on its primary mission of maintaining and preserving the highway system, and strategically investing scarce resources to maximize return on investment and minimize system deterioration. ODOT is also finalizing "Least Cost Planning" implementation policy and guidance that focus on maximizing the return on investment of scarce resources, and holistically measuring costs from a broad and long-term perspective.

Washington County, the cities of Hillsboro and Beaverton, and TriMet receive limited federal and state monies that are competitively allocated through Metro. The Joint Policy Advisory Committee on Transportation (JPACT) makes decisions on actions to be funded and programmed in the RTP. The Metro RTP Financially Constrained Projects for the TVCP Project Area are included in Appendix D: RTP Financially Constrained Projects.

Unlike TV Hwy, which is part of the State Highway System, other streets and roads in the TVCP Project Area are part of the Washington County transportation system. These urban and rural arterials, collectors, and local facilities are eligible for maintenance or capital improvements through three county-generated transportation funding mechanisms:

- County fuel taxes and Urban Road Maintenance District (URMD) for preventative road maintenance on roads within the district, excluding arterials and collectors, and for safety improvements on all roads within the district
- In coordination with cities within Washington County, local property taxes dedicated to Washington County's Major Streets Transportation Improvement Program (MSTIP) for projects that address safety and congestion on arterials and collectors
- Transportation Development Tax (TDT) to keep up with growth and corresponding future transportation system needs

Washington County estimates that only 40 percent of funding for projects identified in the transportation plans of the county and its cities will be available.

TriMet relies on employer payroll tax for more than half of its continuing operating revenues, plus passenger revenues, other state and local programmed proceeds, and federal grants for operations and capital expenditures. TriMet is facing a budget crisis—including an estimated $17 million shortfall in its fiscal year 2013 budget—and proposes a number of cost and service reductions to meet their operating needs and financial obligations. TriMet projects that over the next five years, based on anticipated slow economic recovery and uncertain availability of federal and state funding, the agency will need to continue to reduce spending and increase revenues to maintain fiscal stability.

Solutions Development Process (Next Steps)

This report presents an examination of the TVCP Project Area's multimodal needs, the potential improvement/enhancement concepts to fulfill those needs, and the basic opportunities and constraints for the multimodal improvements. The next step in developing a solutions package that identifies strategic transportation investments is to evaluate potential improvements based on how well they meet the overall project goals.