

Executive Summary

The purpose of the State Route 16, Tacoma Narrows Bridge to State Route 3, Congestion Study is to identify corridor strategies and solutions to address congestion and traffic operational issues on State Route (SR) 16 between the Tacoma Narrows Bridge (TNB) and SR 3, and along SR 3 between the City of Bremerton and Bremerton Airport, including the SR 16/SR 3 interchange at Gorst. Interchanges on both corridors have high levels of congestion during peak travel times.

SR 16 provides access from Tacoma and the surrounding area to the Olympic Peninsula and the cities of Gig Harbor, Port Orchard, and Bremerton. Commuter traffic originating in the study area uses SR 16 and the TNB to reach employment in the Tacoma area and other south Puget Sound destinations. At the north end of the corridor is the Naval Base Kitsap-Bremerton. The Navy attracts commuter traffic from throughout the study area.

The SR 16 TNB to SR 3 Congestion Study is a Washington State Department of Transportation (WSDOT) Connecting Washington funded project. The project was guided by the WSDOT, an Executive Committee, and Technical Advisory Group representing local jurisdictions and transportation agencies in the corridor. Participants are listed in the preceding pages.

A Gorst Planning Study was initiated in 2015 by the Kitsap Regional Coordinating Council, using the WSDOT Practical Solutions approach to evaluate potential solutions to improve mobility issues in the Gorst vicinity; SR 3/SR 16 between Bremerton and Port Orchard. There is significant local concern about traffic in the Gorst area. Travel through the Gorst vicinity is an important regional connection for Naval Base Kitsap-Bremerton, which is one of the five largest employers in Washington State. In the event of an emergency, there is no good alternate route into Bremerton. A key outcome of the Gorst study was to consider the Gorst needs in the context of an overall corridor study area incorporating SR 16 and SR 3 operations. Prior to its completion, the Gorst Planning Study was integrated with this SR 16 Congestion study.

This report presents the results of a highly technical and robust analysis of the SR 16 and SR 3 study area to identify the most promising and practical solutions to the congestion and operational issues in the SR 16 and SR 3 corridors. The report provides stakeholders the tools to identify and prioritize the improvements needed to realize the corridor vision.

Corridor Vision

To initiate this study, a corridor vision was prepared by the Technical Advisory Group (TAG) and Executive Committee with input from corridor stakeholders. The corridor vision guided the preparation of study goals, performance measures, performance metrics, recommendations, and prioritization of solutions.

The TAG envisions the SR 16 and SR 3 transportation corridors will:

- ✓ Operate efficiently with reliable travel times
- ✓ Serve regional travel and connect local communities
- ✓ Support business and residential growth in the local communities
- ✓ Enhance multimodal access and mobility; improve public and environmental health
- ✓ Strengthen connections between major economic and job centers and accommodate fluctuating workforces

Study Approach

This study employed the Federal Highway Administration (FHWA) and WSDOT Practical Solutions approach to planning. This approach encourages system performance management through cost-effective operational improvements first, by considering demand management opportunities and second, after exhausting other options, by considering capacity expansion. Central to Practical Solutions planning is a process that identifies regional and corridor performance, engages communities to ascertain local contexts and needs, and applies methods to evaluate and implement phased near-term, mid-term, and long-term solutions. The Practical Solutions approach is to engage the community and local stakeholders at the earliest stages of scope definition to ensure their input is included at the right stage of the solution development process. The TAG and Executive Committee developed the corridor vision, provided feedback on performance gaps to ensure the evaluation aligned with the corridor vision, and provided local expertise to the review of study findings. The outcome of Practical Solutions planning is a recommended set of multimodal strategies that are cost-effective and balance the goals and objectives of state and local needs.

WSDOT's Practical Solutions approach is being applied at the direction of the Washington State Legislature and is consistent with the FHWA Performance-Based Practical Design process. With the Practical Solutions approach, collaborative decisions contribute to success in project delivery, and are emphasized through the context-sensitive design approach in WSDOT's practical design policies. Convening a Multiagency, Interdisciplinary and Stakeholder Advisory (MAISA) Team is an accepted approach to meet the intent of these policies. The advisory team in the Practical Solutions approach is a collaborative body that provides recommendations to the WSDOT project manager and engineer of record, specifically in these areas:

- Need identification
- Context identification
- Design control selection
- Alternative Formulation
- Performance Trade-off Decision Preferences (including weighing environmental constraints and regulatory issues)
- Alternative Evaluation

Key to the Practical Solutions approach is a robust technical analysis of corridor conditions for existing conditions and three horizon years. Future year analysis established the baseline conditions to evaluate performance measures that were prepared relative to the study vision and goals. The analysis was then applied to measure the performance gap. Solutions were developed to close the performance gap between baseline performance and desired performance. The solutions were tested in alternative packages of solutions framed by level of investment over time. The results of the alternative packages were used to prepare a set of recommendations consistent with the Practical Solutions methodology. The recommendations include over 150 total solutions, with 76 solutions recommended and the remaining solutions not recommended for programming within the 20-year planning horizon.

Figure ES-1 presents the structure for proposed new investment of the recommended strategies phased by level of investment over time.



SR 16

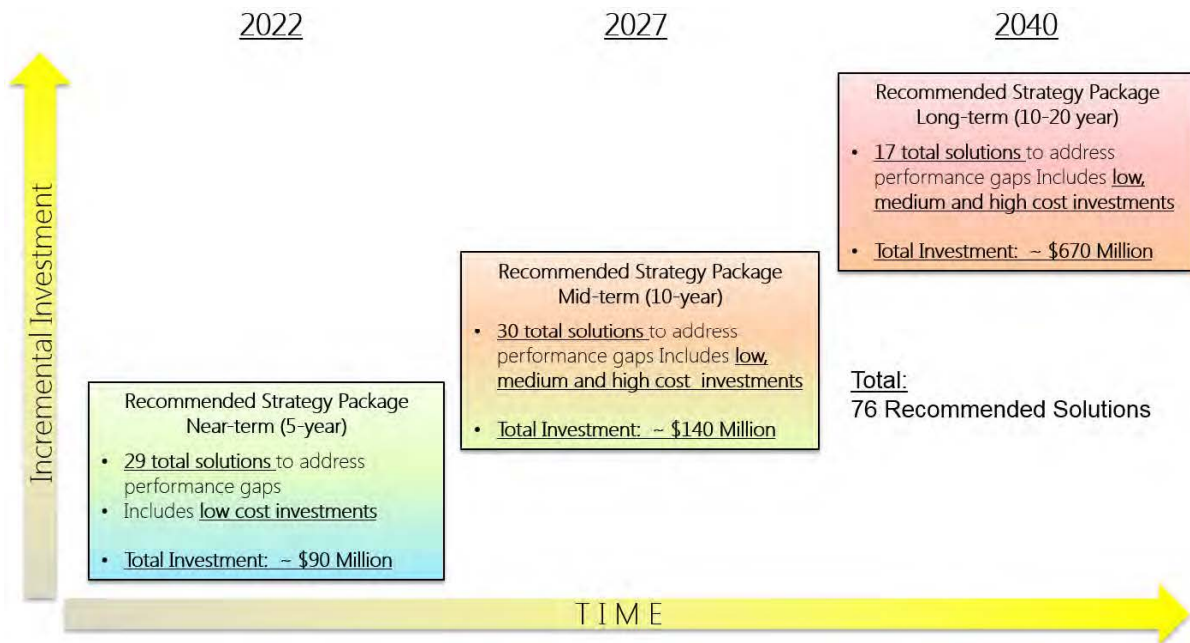


Figure ES-1. Recommended Strategy Packages by Incremental Investment and Timeframe

Recommended solutions by corridor sub-areas are shown in Figures ES-2, ES-3, ES -4, and ES-5.

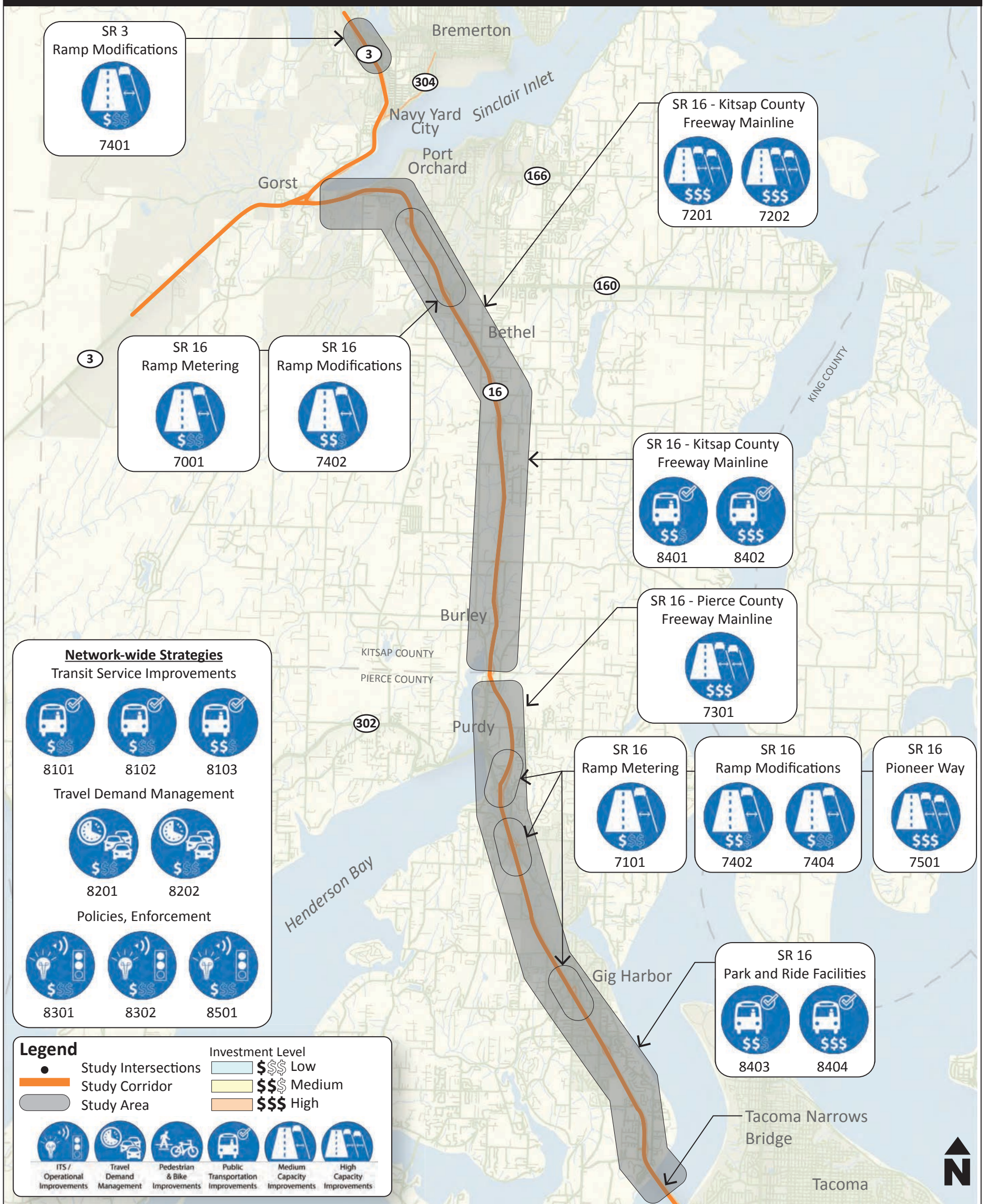
Appendix A includes a complete list of recommended solutions. Highlights of these recommendations includes:

- Operational, channelization, and signal/ITS improvements at key local and state locations
- Capacity improvements at key local and state facilities by widening, roundabout, or signal installations
- Improving pedestrian and bicycle facilities by the extension of the Cushman Trail, new facilities between Bremerton and Port Orchard, and additions or enhancement to bike lanes along corridor
- SR 3 and SR 16 capacity improvements by peak-use shoulder lanes and widening
- SR 304/Naval Base Kitsap-Bremerton area improvements at Farragut Avenue and Charleston Beach Road
- SR 3/SR 16 interchange access control, intersection improvements, and grade separation
- Tremont Street and Sedgwick Road interchange capacity improvements at key intersections
- SR 302 and Borgen Boulevard Interchange capacity, operational, and queue storage improvements
- Olympic Drive, Wollochet Drive, and Hunt Street crossing operational and capacity improvements

Corridor-wide recommendations include:

- Travel Demand Management strategies
- Increased coordination of incident response
- Plans for addressing resiliency and climate change
- Additional park and ride capacity and coordination between agencies

Figure ES.2 Network-Wide



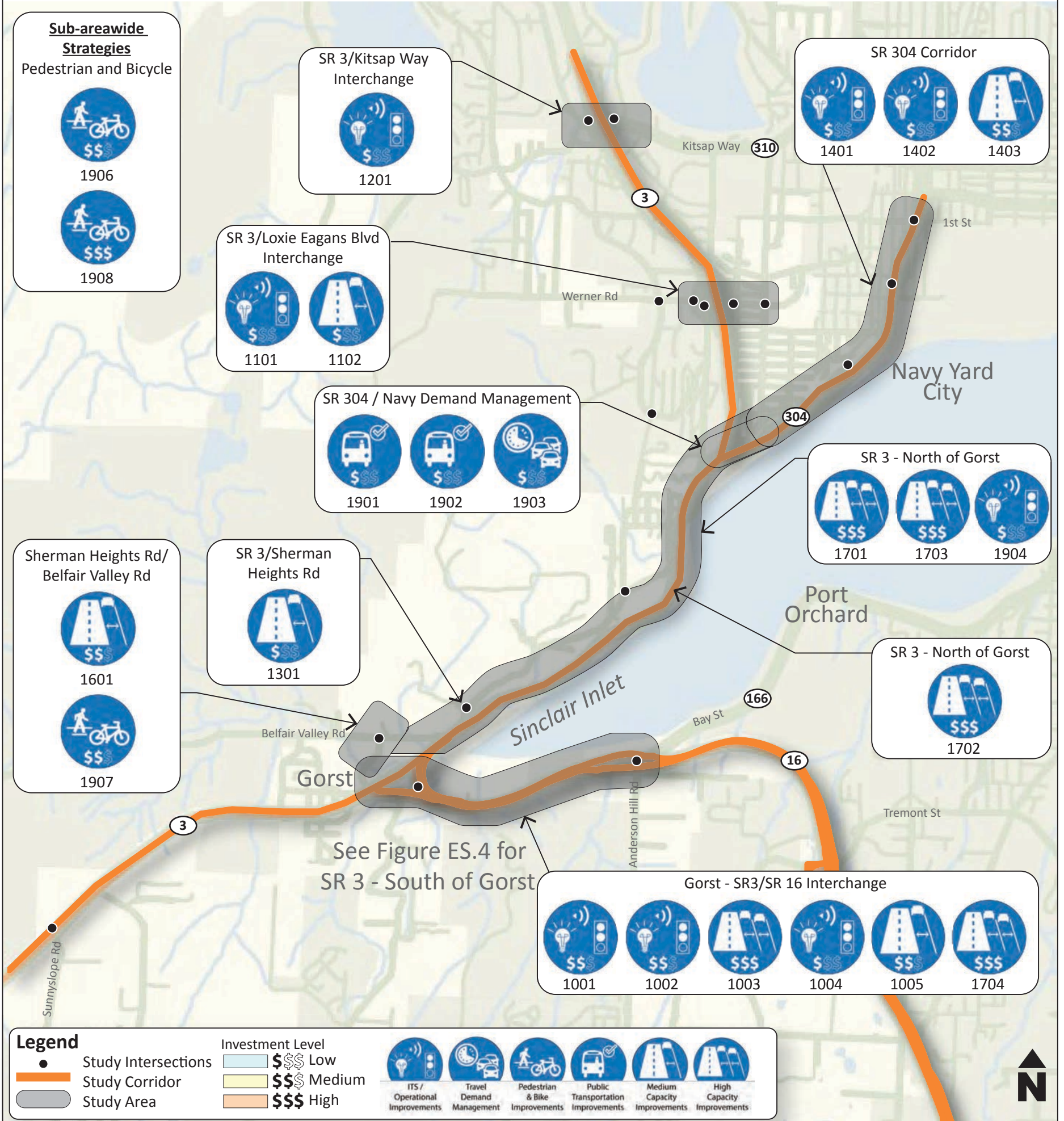
Recommended Solutions

ID	Recommended Solution	Horizon
7001	Ramp metering at Tremont St, Sedgwick Rd interchanges	Mid-term (10 yrs)
7201	Peak-use shoulder lanes, Sedgwick Rd to SR 166	Mid-term (10 yrs)
7202	Widen SR 16 mainline, Mullenix Rd to SR 166	Long-term (20 yrs)
7101	Ramp metering at SR 302, Borgen Blvd, Pioneer Way	Mid-term (10 yrs)
7404	Extend on-ramp lengths, SR 16/Wollochet-Pioneer interchange	Mid-term (10 yrs)
7501	Reconstruct SR16/Wollochet-Pioneer interch. to full Diamond	Long-term (20 yrs)
7301	Peak-use shoulder lanes, SR 302 to Olympic Dr	Long-term (20 yrs)
7401	Extend off-ramps, Loxie Eagans Blvd, Kitsap Way	Mid-term (10 yrs)
7402	Extend off-ramps, Tremont St, SR 302, Burnham, Pioneer	Mid-term (10 yrs)

Network-wide Strategies		
ID	Recommended Solution	Horizon
Transit Service		
8101	Improve access to make transit more attractive for riders	Near-term (5 yrs)
8102	Enhance regional transit agency coordination through Interagency Transit Implementation Plan	Near-term (5 yrs)
8103	Enhance regional transit agency coordination from Bremerton to Tacoma Dome Station	Near-term (5 yrs)

Network-wide Strategies		
ID	Recommended Solution	Horizon
Travel Demand Management		
8201	Implement TDM via carpool, vanpool incentives	Near-term (5 yrs)
8202	Implement TDM via community-wide information	Near-term (5 yrs)
Policy/Enforcement		
8301	Improve cross agency coordination for work on roadways	Near-term (5 yrs)
8302	Additional incident response teams (IRT)	Near-term (5 yrs)
Park and Ride Lots		
8401	Convert existing lot or add capacity to existing park and ride facilities in Kitsap County	Mid-term (10 yrs)
8403	Convert existing lot or add capacity to existing park and ride facilities in Pierce County	Mid-term (10 yrs)
8402	Construct new park and ride facility in Kitsap County	Long-term (20 yrs)
8404	Construct new park and ride facility in Pierce County	Long-term (20 yrs)
Ferries		
8501	Explore modifying Washington State Ferry schedules	Near-term (5 yrs)

Figure ES.3 Bremerton/Gorst Sub-Area



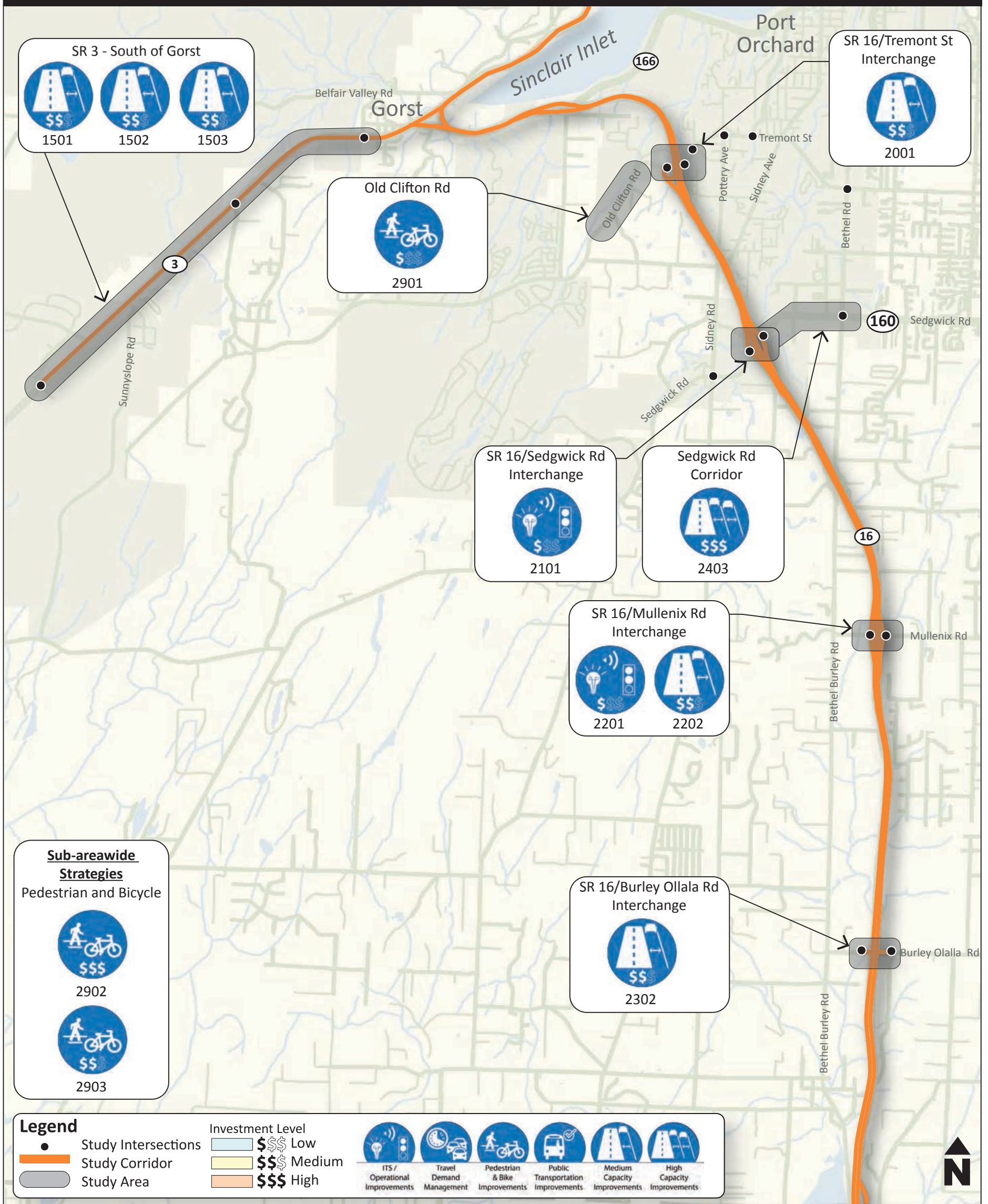
Recommended Solutions

ID	Recommended Solution	Horizon
1002	Implement access management strategies through Gorst	Near-term (5 yrs)
1004	Traffic signal operations improvements, SR 3 at Sam Christopherson Ave	Near-term (5 yrs)
1001	Restriping/rechannelization to maintain SR 16 lane continuity through Gorst	Mid-term (10 yrs)
1005	Construct roundabout, SR 3 at Sam Christopherson Ave	Mid-term (10 yrs)
1003	Reconstruct SR 16/SR 3 interchange	Long-term (20 yrs)
1101	Intersection capacity and traffic signal improvements, Loxie Eagans Blvd at National Ave	Near-term (5 yrs)
1102	Install traffic signal or roundabout, SR 3 SB off-ramp to Loxie Eagans Blvd	Mid-term (10 yrs)
1201	Traffic signal operations improvements, SR 3 SB off-ramp to Kitsap Way	Near-term (5 yrs)
1301	Install traffic signal or roundabout, SR 3 SB off-ramp to Sherman Heights Rd	Mid-term (10 yrs)
1401	Traffic signal operations improvements, SR 304 at Charleston Beach Rd	Near-term (5 yrs)
1402	Traffic signal operations improvements, SR 304 at Cambrian Ave/Farragut Ave	Mid-term (10 yrs)
1401	Traffic signal operations improvements, SR 304 at Charleston Beach Rd	Long-term (20 yrs)
1403	Intersection capacity and traffic signal improvements, SR 304 at Cambrian Ave/Farragut Ave	Long-term (20 yrs)

ID	Recommended Solution	Horizon
1601	Install traffic signal or roundabout, Sherman Heights Rd at Belfair Valley Rd	Mid-term (10 yrs)
1701	Implement peak-use shoulder lanes along SR 3 between Gorst and SR 304	Near-term (5 yrs)
1702	Implement peak-use shoulder lanes along SR 3 between railroad trestle and SR 304	Mid-term (10 yrs)
1703	Add capacity on SR 3 between Gorst and SR 304	Long-term (20 yrs)
1704	Elevated roadway through Gorst	Long-term (20 yrs)

Sub-Areawide Strategies		
ID	Recommended Solution	Horizon
Travel Demand Management and Policy		
1901	Increase or improve HOV enforcement on SR 304 HOV lane	Near-term (5 yrs)
1903	Explore opportunities to enhance high-performing TDM strategies at the Naval Base	Near-term (5 yrs)
1904	Increase redundancy/resiliency between Naval Base and Gorst	Near-term (5 yrs)
1902	Increase vanpool occupancy requirements	Mid-term (10 yrs)
Pedestrian and Bicycle		
1907	Add/enhance pedestrian and bicycle facilities along Sam Christopherson Ave to Otto Jarstad Park	Mid-term (10 yrs)
1906	Add/enhance pedestrian and bicycle facilities along Sherman Heights Rd between Bremerton and Gorst	Near-term (5 yrs)
1908	Add/enhance pedestrian and bicycle facilities between Bremerton and Port Orchard	Mid-term (10 yrs)

Figure ES.4 Port Orchard Sub-Area

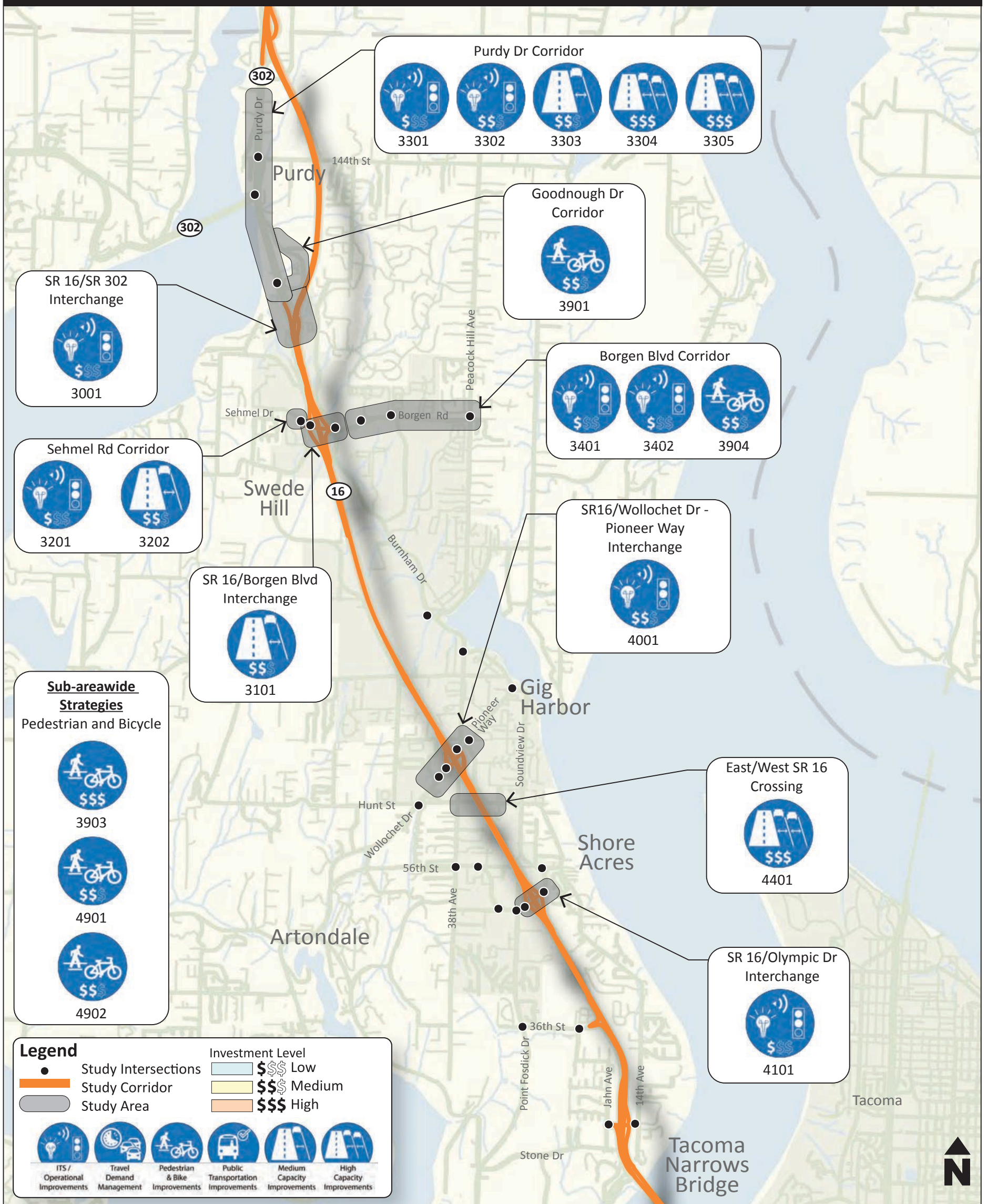


Recommended Solutions

ID	Recommended Solution	Horizon
1501	Install traffic signal or roundabout, SR 3 at Division Ave	Mid-term (10 yrs)
1502	Install traffic signal or roundabout, SR 3 at Sunnyslope Rd	Mid-term (10 yrs)
1503	Install roundabout, SR 3 at Imperial Way	Long-term (20 yrs)
2001	Install traffic signal or roundabout, SR 16 EB ramp to Old Clifton Rd, SR 16 WB ramp to Tremont St	Mid-term (10 yrs)
2101	Intersection capacity improvements, SR 16 WB ramp and Sedgwick Rd	Near-term (5 yrs)
2201	Intersection capacity improvements, SR 16 EB ramp and Mullenix Rd	Near-term (5 yrs)
2202	Install traffic signal or roundabout, SR 16 EB at Mullenix Rd	Mid-term (10 yrs)
2202	Install traffic signal or roundabout, SR 16 WB at Mullenix	Long-term (20 yrs)
2302	Install traffic signal or roundabout, SR 16 EB and SR 16 WB at Burley Olalla Rd	Long-term (20 yrs)
2403	Implement arterial widening improvements, traffic signal timing improvements	Long-term (20 yrs)

Sub-Areawide Strategies		
ID	Recommended Solution	Horizon
Pedestrian and Bicycle		
2901	Add/enhance pedestrian and bicycle facilities along Old Clifton Rd west of SR 16 to city limits	Mid-term (10 yrs)
2902	Extend the Cushman Trail to Port Orchard, improve/add regional trails	Long-term (20 yrs)
2903	Add/enhance pedestrian and bicycle facilities along Bethel Rd and along Sidney Rd	Mid-term (10 yrs)

Figure ES.5 Purdy / N. Gig Harbor Sub-Area



Recommended Solutions

ID	Recommended Solution	Horizon
3001	Implement WSDOT "Zipper Merge" signage at SR 16 WB off-ramp to SR 302	Near-term (5 yrs)
3101	Intersection capacity improvements, SR 16 WB ramp and Borgen Blvd	Long-term (20 yrs)
3201	Intersection capacity improvements, Burnham Dr at Sehmel Dr	Near-term (5 yrs)
3202	Install roundabout, Burnham Dr at Sehmel Dr	Mid-term (10 yrs)
3301	Traffic signal operations improvements along Purdy Dr at SR 302 Spur and at 144th St	Long-term (20 yrs)
3302	Intersection capacity and traffic signal improvements, SR 302 at Purdy Dr	Near-term (5 yrs)
3303	Install signal or roundabout, Purdy Dr at Goodnough Dr	Mid-term (10 yrs)
3304	Implement arterial widening improvements, SR 302/Purdy Dr between SR 16 interchange ramps	Long-term (20 yrs)
3305	Complete the SR 302 EIS as a part of SR 302, Elgin Clifton Rd to SR 16, Congestion Study	Long-term (20 yrs)
3401	Int. capacity improvements, Borgen Blvd. at Harbor Hill	Mid-term (10 yrs)
3402	Int. capacity improvements, Brogen Blvd at Peacock Hill	Near-term (5 yrs)

ID	Recommended Solution	Horizon
3901	Add/enhance pedestrian and bicycle facilities between Burnham Dr and PHS	Long-term (20 yrs)
4001	Intersection capacity, traffic signal improvements at SR 16 EB and SR 16 WB ramp terminals	Near-term (5 yrs)
4101	Traffic signal operations improvements, SR 16 EB and SR 16 WB at Olympic Dr	Near-term (5 yrs)
4401	Add grade separated crossing at SR 16/Hunt St	Long-term (20 yrs)
Sub-Areawide Strategies		
ID	Recommended Solution	Horizon
Pedestrian and Bicycle		
3903	Extend the Cushman Trail to Kitsap County, improve/add regional trails	Mid-term (10 yrs)
3904	Add/enhance pedestrian and bicycle facilities along Peacock Hill Ave, Harbor Hill Dr, Canterwood Blvd	Mid-term (10 yrs)
4901	Complete gaps in Cushman Trail and Scott Pierson Trail	Mid-term (10 yrs)
4902	Add/enhance bicycle facilities along Harborview Dr, Soundview Dr	Mid-term (10 yrs)