Smart Corridors & Transit Signal Priority Project Update

Eric Phillips – Development Director
Intercity Transit Authority – March 2, 2022

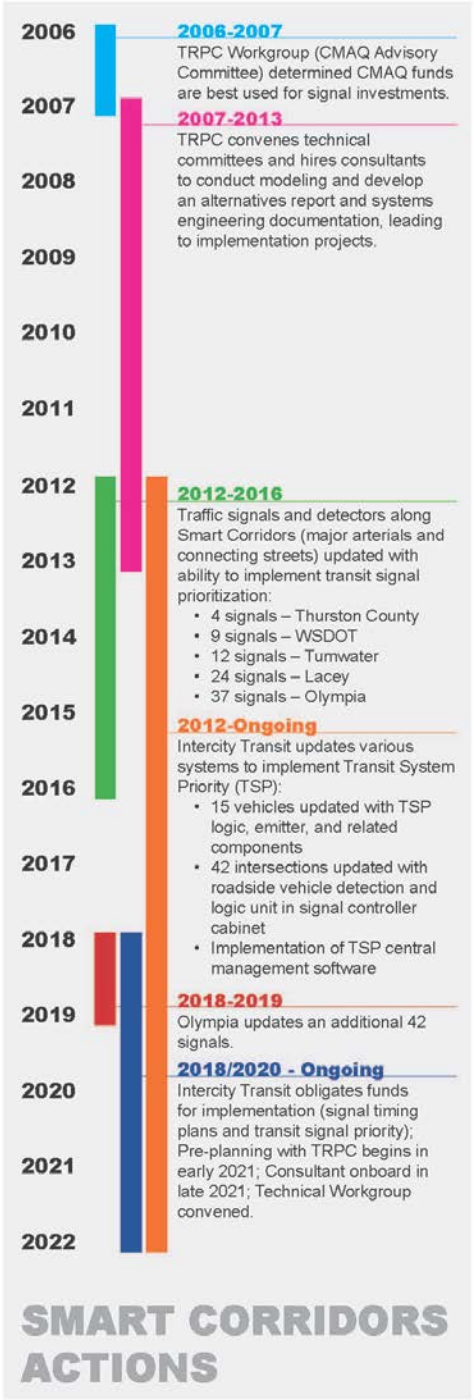
Thurston Smart Corridors

Quick history…..

GOAL:
Technology investments will convert regionally-designated strategy corridors into "Smart Corridors" using specific ITS components

Primary focus were the major arterials that also serve as Urban Corridors; additional corridors may be added as funding allows.

Over $5.1 Million in Federal Funds and $800,000 in local funds invested to date



A tale of two projects……

thurston smartCORRIDORS

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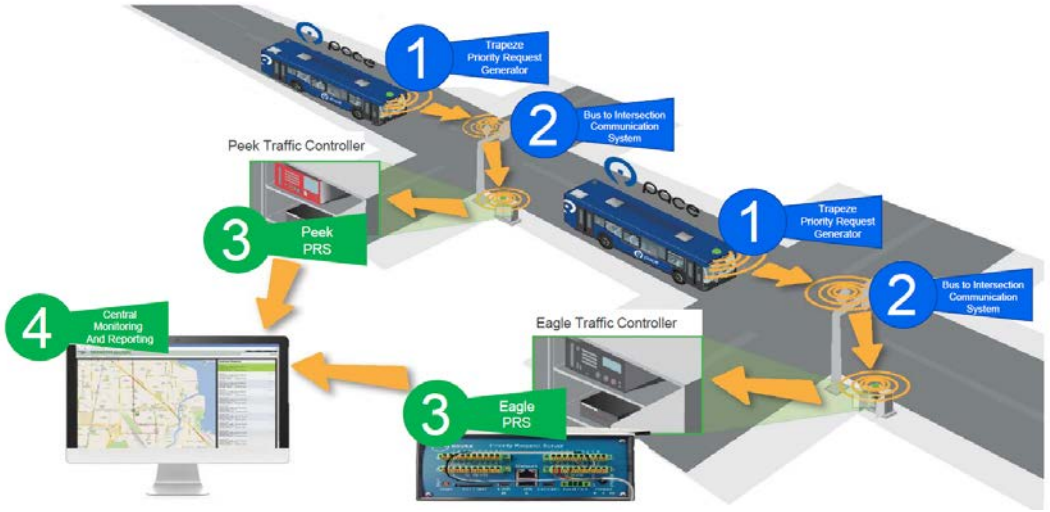
A Smart Corridors is one where a wide range of technology has been deployed allowing active use of strategies that support smart use of the corridors. (includes cars, EMS, pedestrian, bike as well as transit)

Transit Signal Priority (TSP)



Transit Signal Priority is one of many operating strategies that can be used on a Smart Corridor

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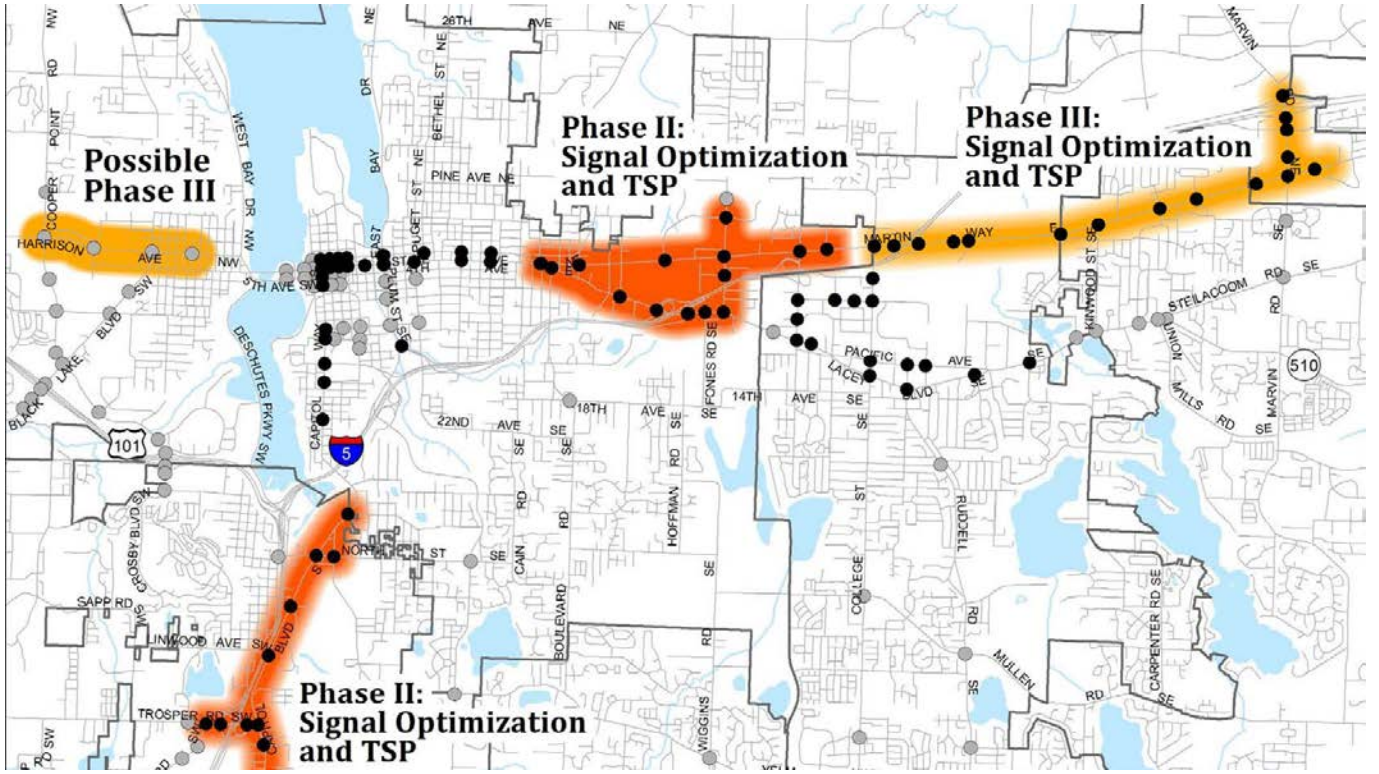
Smart Corridors & TSP Implementation Project

- Intercity Transit has combined three separate federal project awards for the combined project into a single Scope of Work for efficiency.
  - 2012 - Award to update vehicles with TSP technology; update intersections with roadside vehicle detection; implement TSP software.
  - 2018 and 2020 – Regional funds awarded (in two phases) to develop regional Smart Corridor implementation – built around signal work necessary to deploy TSP.



Total Federal Funds (all project elements) $ 1,461,320

TSP = $805,820 Smart Corridors = $655,500

Project funding and budget highlights

- **Smart Corridor Funds**
  - $387,500 of 2018 CMAQ
  - $268,000 of 2020 CMAQ
  - $102,500 Smart Corridors local match

  Total = $758,000

- **Smart Corridor Expenditures**
  - $140,780 TO 1 Iteris
  - $40,000 TRPC support
  - $20,000 future TRPC support
  - $240,000 Future Iteris TO
  - $337,110 Implementation

  Total = $758,000

- **Transit Signal Priority Funds**
  - $805,820 of 2013 CMAQ funds TSP
  - $110,000 local match
  - $350,000 additional local

  Total = $1,265,820

- **Transit Signal Priority Costs**
  - $200,000 Intersection TSP equipment
  - $430,000 TSP Onboard IVU's
  - $400,000 prior equipment and support
  - $235,820 TSP Implementation Support

  Total = $1,265,820

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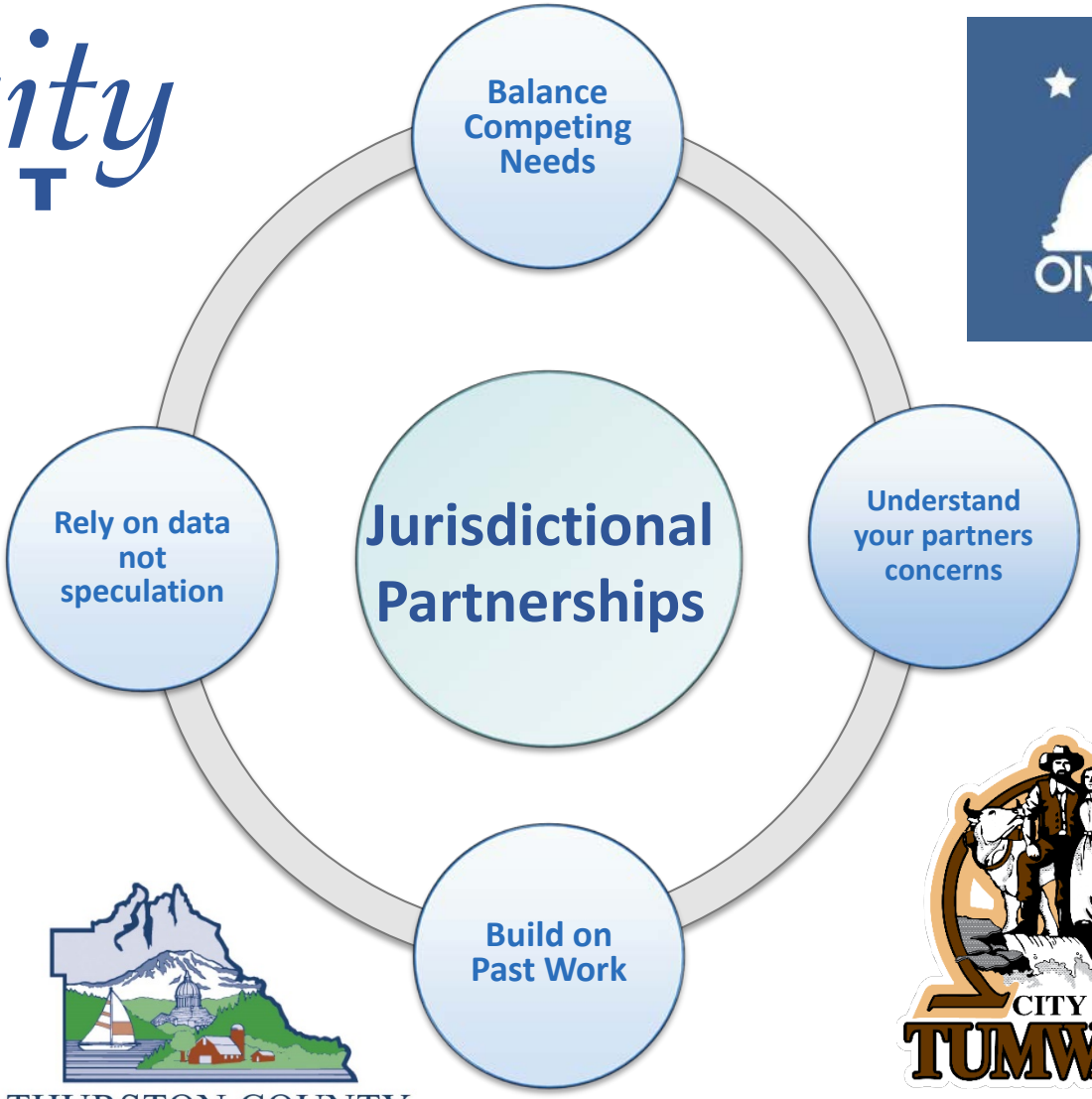

Olympia

CITY OF LACEY

WSDOT

THURSTON REGIONAL PLANNING COUNCIL

THURSTON COUNTY
WASHINGTON
SINCE 1852

CITY OF TUMWATER

Between 2016 and 2021 Intercity Transit executed Interlocal Agreements with each agency to move forward with Smart Corridors and Transit Signal Priority.

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Project Structure

- **Smart Corridors** is a regional implementation project.
- **Intercity Transit is the Project Lead**, grant recipient, and sole funding partner for Smart Corridor Implementation.
- **TRPC** is contracted by IT to **provide coordination support** for the project.
- **A Technical Workgroup** (TWG) including all the jurisdictional partners **is in place** for the project.
- **IT has ILA's with each agency** to support TSP and Smart Corridor coordination and implementation work.
- **IT responsible** for hiring and managing the Traffic **Engineering Consultant** and coordinating work.

Technical Workgroup (TWG)

- Coordinated by TRPC, IT, and Consulting Team
- Consists of staff from Intercity Transit, Lacey, Olympia, Tumwater, Thurston County, and Washington State Department of Transportation
- Workgroup may be expanded to include other stakeholders (such as emergency services) for specific meetings
- Role is to:
  - Work through technical issues relating to the project
  - Be liaison to their organization; help collect data provide introductions to other staff as necessary
  - Provide input to project team

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Consultant Team

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iteris®

- Iteris – Extensive experience with similar project deployments. Testing capacity and familiarity with technology and agency operation

Parametrix

- Local project Manager experienced, and trusted traffic engineer has worked with many of the partner jurisdictions before.

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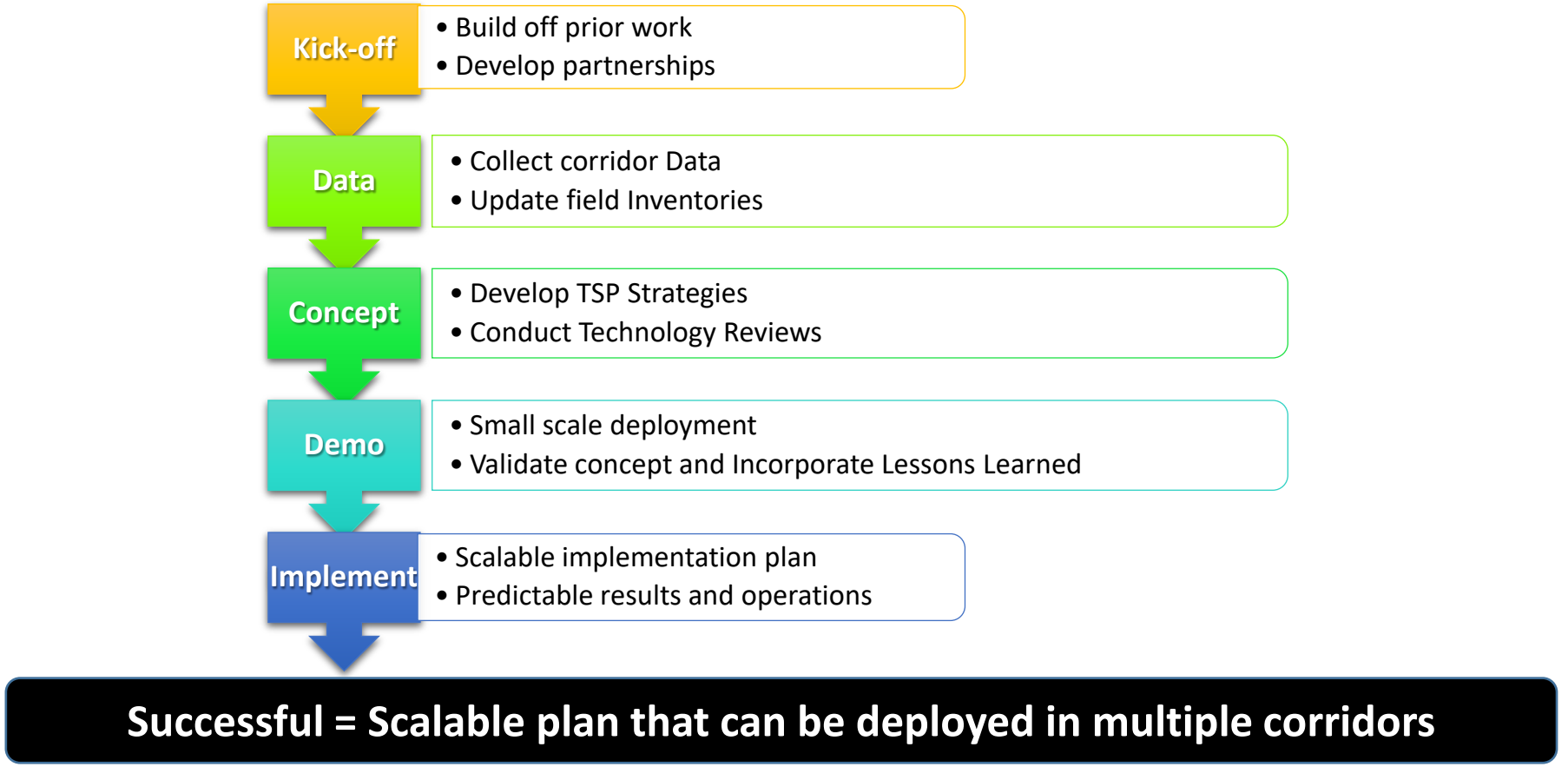
Iteris Implementation Approach



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Iteris - Task Order 1 Scope

- Data Collection
- Technology Review
- Coordination with Jurisdictional Partners
- Project Roadmap*
- Testing and Field Verification

* The Project Roadmap deliverable will address the implementation Phase of and remaining work under Smart Corridors

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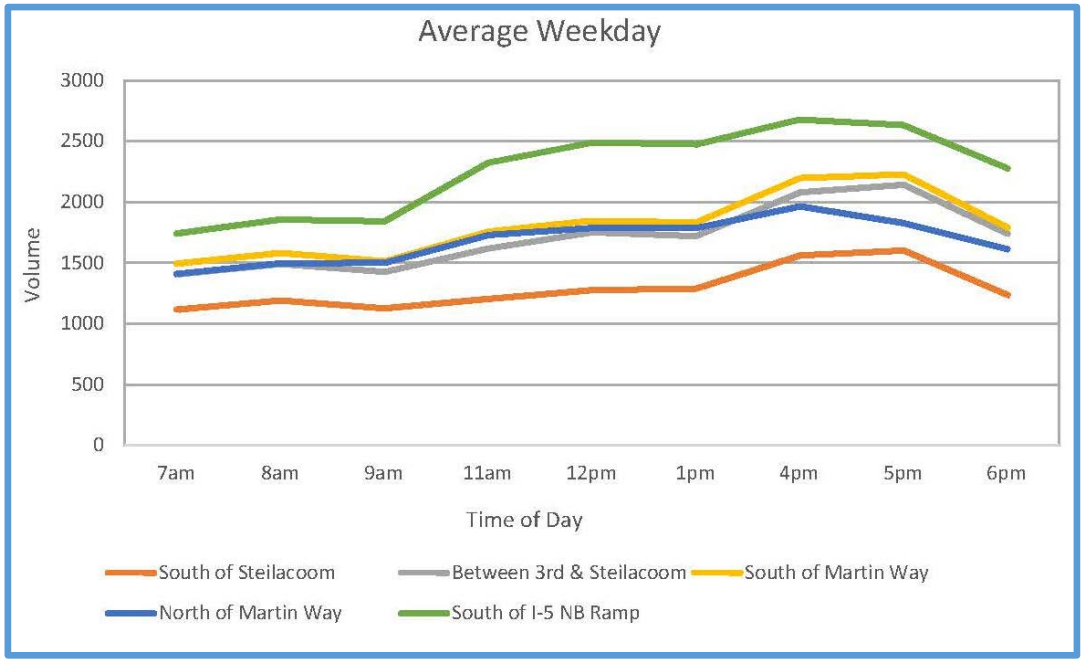
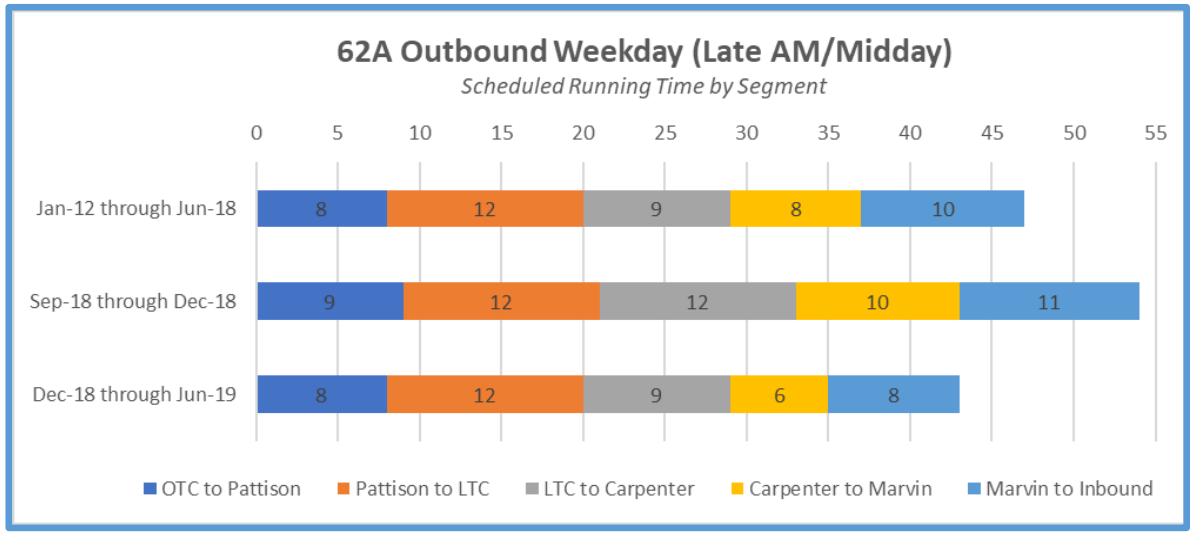
Data Collection

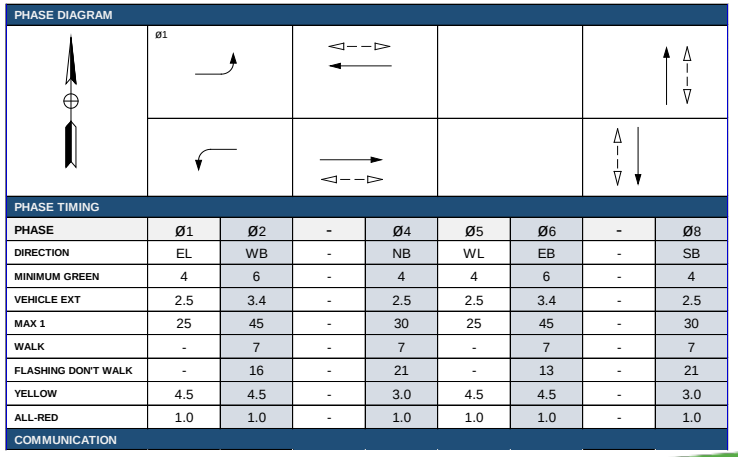
Traffic Volumes



Transit Data



Signal Timing



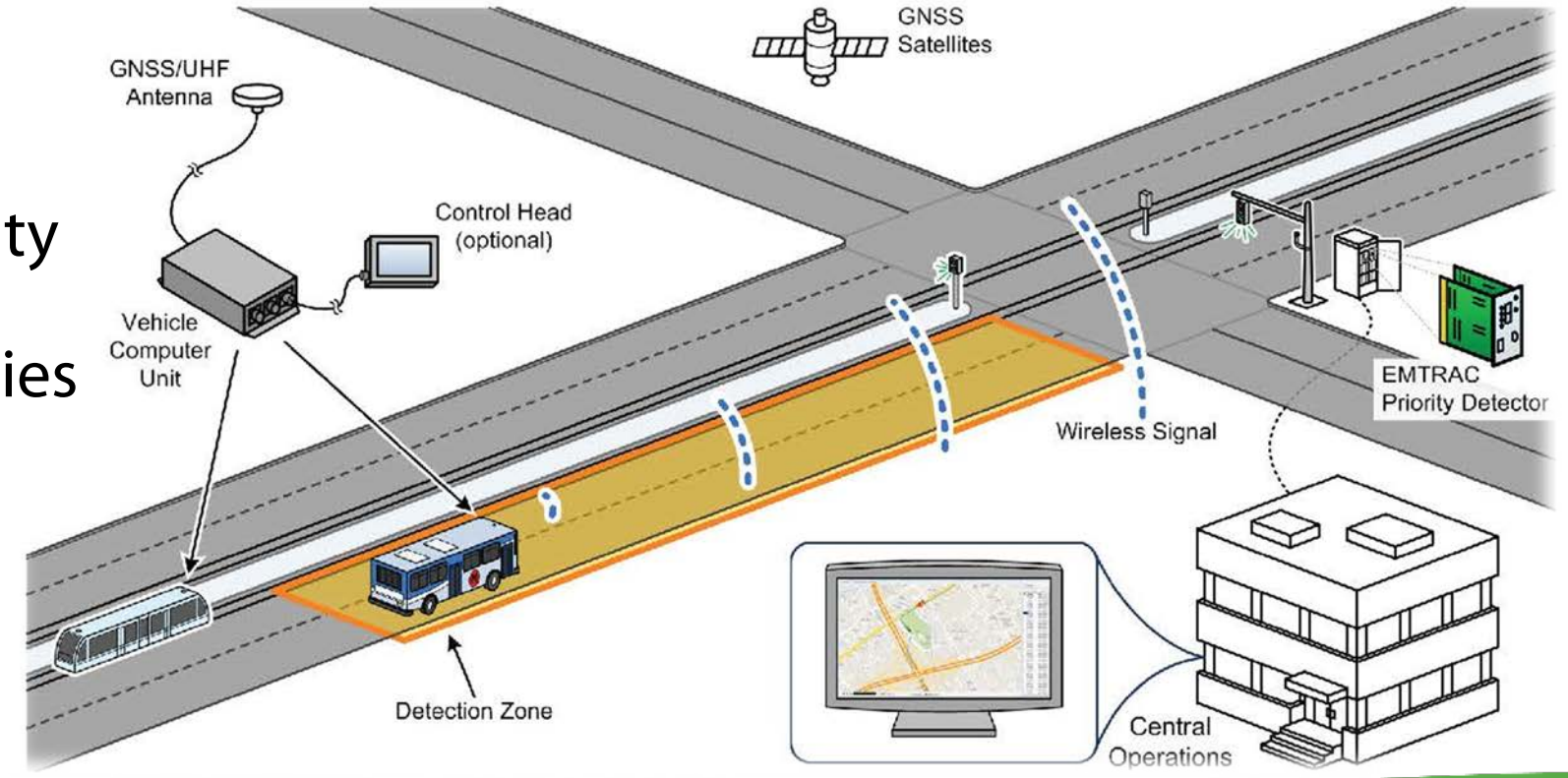
PHASE DIAGRAM

PHASE TIMING

PHASE	Ø1	Ø2	-	Ø4	Ø5	Ø6	-	Ø8
DIRECTION	EL	WB	-	NB	WL	EB	-	SB
MINIMUM GREEN	4	6	-	4	4	6	-	4
VEHICLE EXT	2.5	3.4	-	2.5	2.5	3.4	-	2.5
MAX 1	25	45	-	30	25	45	-	30
WALK	-	7	-	7	-	7	-	7
FLASHING DON'T WALK	-	16	-	21	-	13	-	21
YELLOW	4.5	4.5	-	3.0	4.5	4.5	-	3.0
ALL-RED	1.0	1.0	-	1.0	1.0	1.0	-	1.0
COMMUNICATION								

Concept Development

- Fit existing conditions and constraints
- Evaluate existing conditions
- Test controller TSP functionality and software
- Develop signal timing strategies
  - Side streets
  - Left turns
  - EV
  - Coordination
  - Cycle length
  - TSP strategies



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Testing – Pilot Project

- Select test intersections
- Test priority system
- Test controller TSP response and functionality
- Validate performance and benefits
- Identify impacts
- Adjust concept and strategies as needed

EMTRAC Vehicle Computer Unit

EMTRAC Priority Detector

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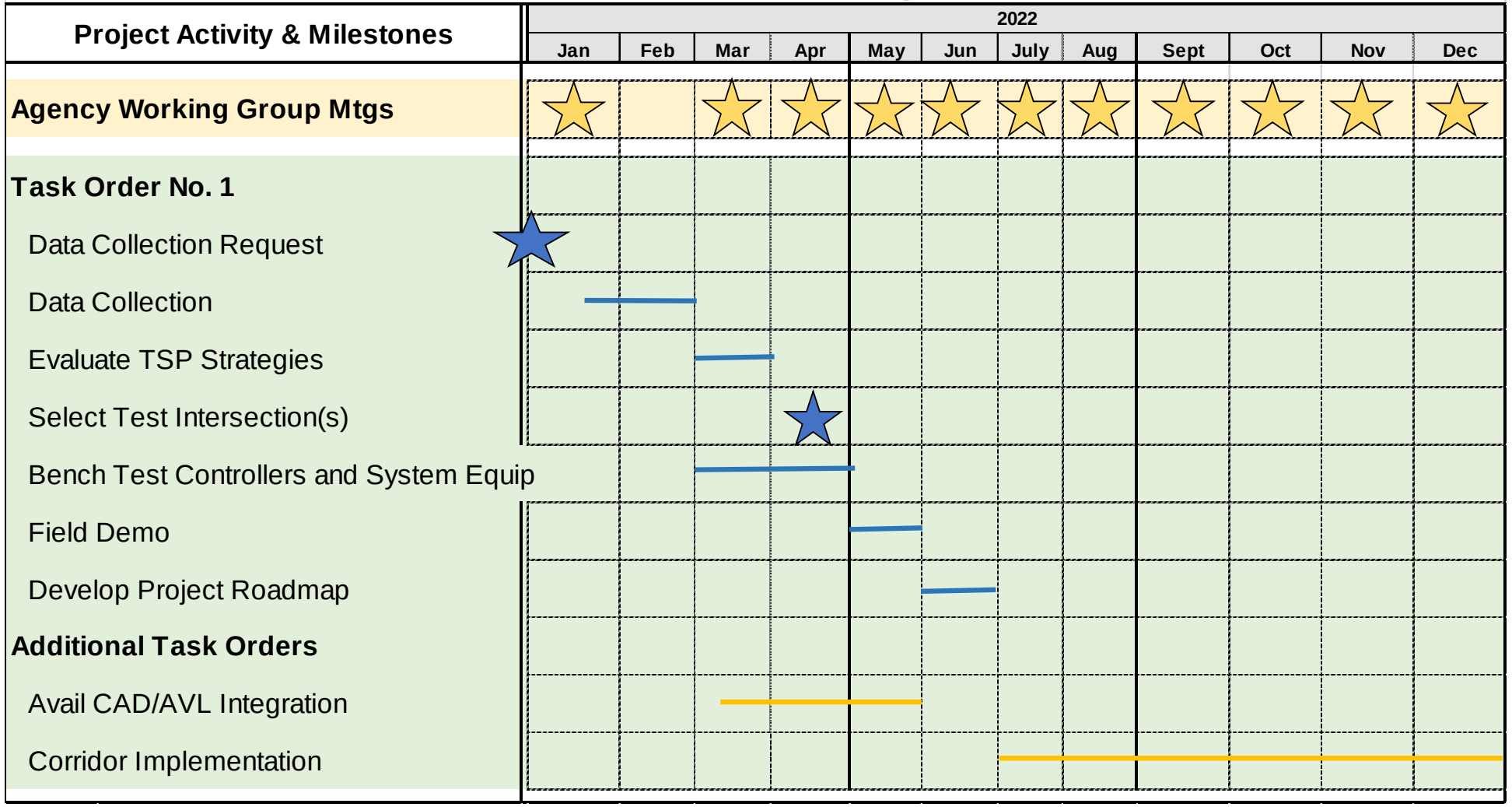
Thurston Smart Corridors and TSP Implementation Schedule



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Project Challenges

- Changed Conditions due to COVID
  - Traffic volumes and travel patterns
  - Transit Ridership
  - Working in the field and in the shop environment
- Data Collection
  - Traditional methods provide limited static data set for design
  - New technologies provide more diverse and rich real time data
- Forward Looking
  - Management of the TSP system
  - Foundation to build future smart corridor improvements

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Questions?