ADAPTIVE SIGNAL CONTROL SYSTEM IN SNOHOMISH COUNTY

RTOC

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Outline

- Why Adaptive Signal Control Technologies (ASCT)
- Corridors Implementing ASCT
- Current Challenges/Opportunities in the Corridors
- ASCT Funding
- ASCT System Selection
- ASCT Implementation Challenges
- Lesson Learned & What Next
- Questions
Why ASCT in Snohomish County

• Concurrency Management
• Improve connection to regional growth centers
• Effective capacity improvement
• Shared transportation improvement
• PSRC 2040/2050 Plan
• Multi-agency system coordination
ADAPTIVE PHASE I

Total Number of Traffic Signals = 47

- WSDOT = 23
- City of Bothell = 9
- City of Everett = 6
- Snohomish Co. = 9
ADAPTIVE PHASE I

• SR 527 from 228th St SE to SR 96;
• SR 96/128th St SW/Airport Rd from Seattle Hill Rd to SR 526 and
• 228th St from 9th Ave W to 19th St SE
ADAPTIVE Phase II

Total Number of Traffic Signals = 44
- Snohomish County = 14
- City of Bothell = 13
- City of Mill Creek = 2
- City of Lynnwood = 8
- City of Mountlake Terrace = 2
- WSDOT = 5
ADAPTIVE PHASE II

SR 522, Bothell Way, Bothell-Everett Highway, Mill Creek Blvd, 164th Street SE/SW, 44th Avenue W.
Current Challenges & Opportunities in the Corridors

- Heavy congestion & mixed travel
- Multi-agency system coordination
- Major freeway bypass
- Boeing peak
- Emergency preemption
- Longer cross walk time
- Fully actuated and interconnect system
- SWIFT BRT system
Adaptive Project Funding

Project Cost $2,000,000
STP funds: $1,730,000 (87.5%)
Local match: $270,000 (13.5%)

Local match divided into PE & CN

➢ Phase I funded in 2015
➢ Phase II funded in 2017
FHWA Process
Systems Engineering Documentation

• Concept of Operations – What the system will do

• System Requirements – How it will do it

• Verification Plan – How to verify the system

• Validation Plan – Confirmation, Does it work?

• Procurement Plan – How to purchase
System Procurement

• Draft Systems Engineering Documents
• Issued Request for Information (RFI)
  • In Sync (Rhythm Engineering)
  • SCATS (Transcore)
  • SCOOT (Siemens)
  • Synchro Green (Trafficware)
  • Centracs (Econolite)
  • ACDS (Transcore)
  • MaxTime/View (Intelight)
System Procurement

• Issues Request for Proposal (RFP)
  • Synchro Green  (Trafficware)
  • Transparity   (McCain Inc.)
  • Peak ATC      (Peak Traffic)
  • MaxAdapt     (Intelight)
System Procurement

- Used Three Tiers selection process
  
  Tier 1 - Verify Mandatory Requirements
  
  Tier 2 – Scoring on Written Proposals
  
  Tier 3 – Live Demonstration - Bench Test and Field Deployments

Trafficware & INTELIGHT

- Used Best Value method

- Selected INTELIGHT
Phase I Implementation & Challenges

• Software maintenance agreement
• Direct Fiber Connection with WSDOT System
• Loop/Video detection separations
• Server Issue
Traffic Busters Network

WSDOT TMC

Primary Server (MAXVIEW 1)

Database Archive (High Res Data)

Backup Server (MAXVIEW 2)

Snohomish County Building

Database Mirroring

MAXVIEW 2 Polls Controllers Directly if MAXVIEW 1 Failed

MAXVIEW used for database management, status, and reporting

Project Servers

WSDOT Signals

SnoCo Signals

Everett Signals

Subnet

Subnet

Subnet

MAXTIME adaptive Field Network (No System Required for Adaptive)
Phase I Implementation & Challenges

• Collecting before and after data
• Transit Priority & Preemption Equipment
• BRT Schedule
• System Parameter Setting
Phase II Implementation & Challenges

• Interlocal Agreements for the project
• Hiring Consultant
• System Engineering??
• Existing Systems under operations
• PE/CN break and funding obligations
Lesson Learned

• Expensive and complex takes resource and time
• Selection of right system
• Fully functional System Operations
• Spend time with vendor
• ASC projects are new
What’s Next....

• Before & after study underway
• Seeing mixed improvements
• TSP Integration
• Expansion or add more Intersections
• Improve process and guidelines
• Looking more regional partnership
Questions?