Overview of King County
Transit Signal Priority Program

T3 Webinar
January 22, 2008
Transit Signal Priority Program Timeline

- 1991 – Rainier Ave HOV study recommends demonstration of Transit Signal Priority
- 1993 – Regional Oversight Committee formed
- 1994-1996 – RFI, RFP, Contract Award
- 1997 – System design approved
- 1999 – Rainier Ave installation
- 2000 – Aurora Ave installation
- 2002 – Final acceptance & Aurora Ave evaluation
System Requirements

- Conditional priority
  - *Data message*
- Decentralized operation
- Work with multiple signal controller types
- Minimal disruption to general Traffic
  - *Limited call frequency*
  - *Must serve all phases*
- No driver interaction
King County TSP System

- Detection
  - RF Tag Reader
  - 500 - 1,000 feet

- Request
  - TPRG in signal cabinet
  - Conditional priority
TSP Transponder “Tag”

- 128 bit packet:
  - system
  - agency
  - vehicle ID
  - driver ID
  - route
  - run
  - trip
  - class
  - lateness
  - ridership

- No input by driver required.
TSP Reader

- RF antenna mounted above roadway
- Reader detects tag, reads data packet and passes information to TPR Generator
TPR Generator

- Interfaces with traffic controller
- Determines if bus is eligible for priority
- Stores logs and priority logic
Current TSP Projects

- Rainier Avenue
- SR 99 North
- SR 99 South
- Bellevue 8th St.
- 272nd / I-5
- Redmond (RITS)
- NE 124th St.
- Renton TSP
- Lake City Way
- 1st Avenue South
- Jackson St/12th Ave.
- E-3 Busway to CBD
TSP Evaluation Findings

- Average reduction in bus travel peak period: 5.5%
- Average reduction in bus delay at signalized intersections: 25%
- Reduction in buses with travel time >30 min: 40%
TSP Lessons Learned

- TSP impacts on reliability are as important as speed
- Communication quality is critical
- RFID is effective, but complex and a large share of installation and maintenance cost
- No one cares more about Transit Signal Priority than Transit