

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

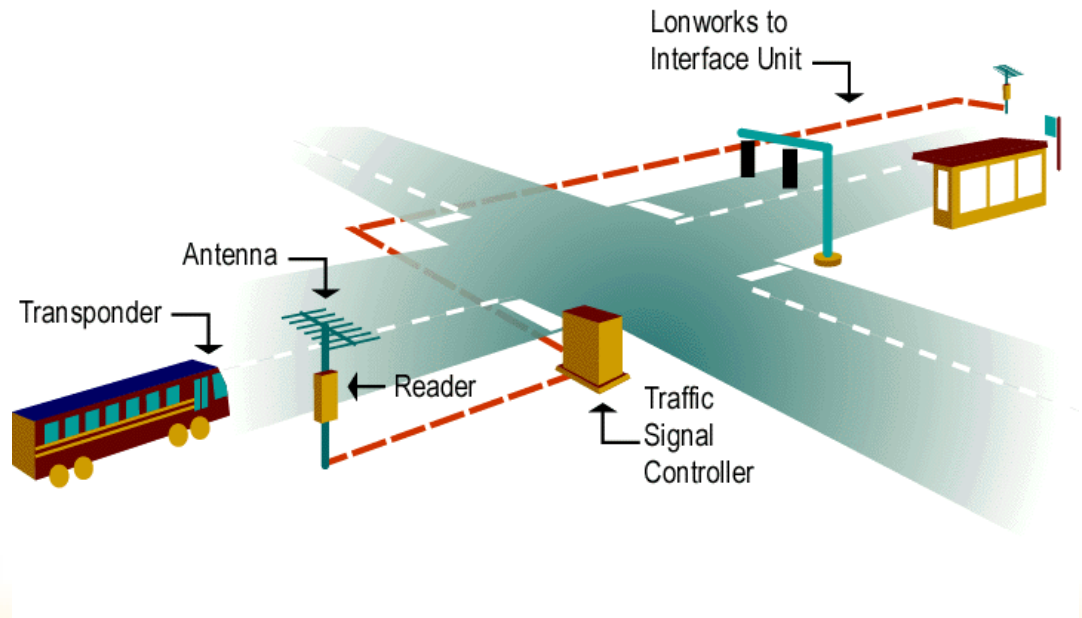
System Requirements

- 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.
- static data*
- dynamic data*
- future use*

TSP Reader



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

TPR Generator

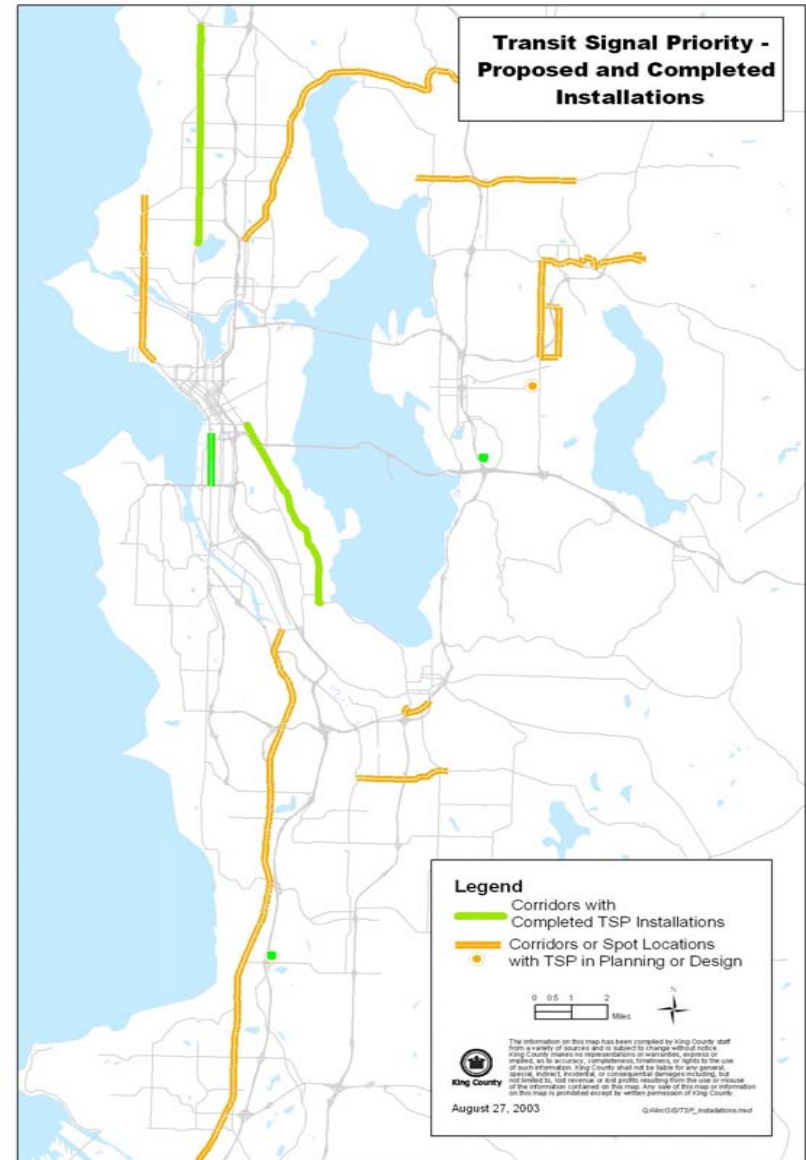


- Interfaces with traffic controller
- Determines if bus is eligible for priority
- Stores logs and priority logic



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