

Memorandum



CITY OF DALLAS

DATE October 10, 2008

TO Council Transportation and Environment Committee:
Linda Koop, Chair; Sheffie Kadane, Vice Chair; Jerry R. Allen,
Carolyn R. Davis, Vonciel Jones Hill, Angela Hunt, Pauline Medrano,
Ron Natinsky

SUBJECT Transit Signal Priority at Traffic Signals in the Downtown Transitway Mall Briefing
October 13, 2008

Attached is the "Transit Signal Priority at Traffic Signals in the Downtown Transitway Mall" briefing that will be presented to you on Monday, October 13, 2008 at the Transportation and Environment Committee Meeting.

Please contact me if you need additional information.

A handwritten signature in black ink, appearing to read "Ramón F. Míguez".

Ramón F. Míguez, P.E.
Assistant City Manager

Attachment

RFM/EAR/cjs

c: The Honorable Mayor and Members of the City Council
Mary K. Suhm, City Manager
Thomas P. Perkins, Jr., City Attorney
Deborah Watkins, City Secretary
Craig Kinton, City Auditor
Judge C. Victor Lander, Judiciary
Ryan S. Evans, First Assistant City Manager
Ramón F. Míguez, P.E., Assistant City Manager
Jill A. Jordan, P.E., Assistant City Manager
A.C. Gonzalez, Assistant City Manager
David O. Brown, Interim Assistant City Manager
David Cook, Chief Financial Officer
Jeanne Chipperfield, Director, Budget and Management Services
Edward Scott, Director, Controller's Office
Helena Stevens-Thompson, Assistant to the City Manager – Council Office
Rick Galcerán, P.E., Director, Public Works and Transportation

Transit Signal Priority at Traffic Signals in the Downtown Transitway Mall

Presented to the
Transportation and Environment Committee
October 13, 2008



Presenter:
Elizabeth Ramirez, P.E.
Assistant Director
Public Works & Transportation



Purpose of Briefing

- ❑ Present information about the Transit Signal Priority (TSP) operation that will be implemented at traffic signals in the downtown Transitway Mall
- ❑ Upcoming council action on October 22, 2008

Overview

- ❑ **Background - DART train system needs**
- ❑ **Actions to date - Requirements for train and traffic signal operations**
- ❑ **Implementation**
 - City and DART responsibilities
 - Schedule

Background

- ❑ Existing master ILA between City and DART
 - Defines roles & responsibilities for O&M of DART system and related city equipment
 - DART operates and maintains light rail system
 - City operates and maintains traffic signal equipment
 - DART is responsible for all costs associated with rail system construction or changes to traffic signals to accommodate rail operations
 - Mitigation required if rail operation causes the vehicle LOS (level of service) to degrade

Background

□ What is Transit Signal Priority (TSP)?

- **Partial Priority**

- Early or extended green time to allow for non-stop train travel between CBD stations
- Signal coordination maintained
- Cross-street green time for vehicles is slightly reduced

- **Full Priority**

- Traffic signal changes immediately for trains
- Signal coordination with surrounding signals is temporarily lost due to the train interruptions

Background

□ Why do we need TSP?

- New rail lines open in Sept 2009
 - Number of trains will increase from 24 to 48 during peak hrs
 - Trains will arrive every 2-1/2 minutes per direction
 - ILA requires second rail line if additional demand required
- Provides flexible greens for trains
 - Trains delayed by long station boardings will receive extended green time to keep trains advancing to next station
- Prevents train bunching
 - Back-to-back trains cannot enter stations
 - Some trains physically longer than the street blocks

Background

❑ Limitations of present Transitway Mall

- No equipment to detect train arrivals
- Green times are fixed
- Green time is provided for trains every cycle regardless of demand
- System does not fluctuate for passenger boarding delays and sometimes trains stop between stations
- No performance monitoring

Actions to Date

❑ **DART requested full priority for trains**

- Minimize train travel time through downtown
- Prevent stops between stations
- Reduce person-delay rather than vehicle-delay

❑ **City concerns with train priority**

- Train priority would disrupt signal progression on north-south streets
- Skipping cross street green time for train priority may cause vehicle congestion and grid-lock
- Skipping cross street green time for train priority would not allow pedestrians to cross every cycle

Actions to Date

□ 2004 Transportation Study

- City hired consultant to study impacts of train priority
- Used computer simulation to determine best solution
- Recommendations:
 - Use combination of signal priority
 - Full priority at signals entering downtown to first station
 - Partial priority at signals internal to downtown
 - Implement low-floor trains to reduce passenger loading times
 - Implement count down timers for train operators to regulate boarding times

Implementation Responsibilities

❑ TSP System Elements - City will provide:

- Traffic controller hardware and software upgrades
- Updates to signal timings in entire downtown area
- Implementation of signal timings to allow non-stop train travel between stations
- Installation of countdown timers at rail stations for train operators

❑ All costs are responsibility of DART

Implementation Responsibilities

□ TSP Elements- DART will provide:

- Installation/maintenance of train detection system
- East/west rail junction operations
- Uniform station dwell times
- Retrofit trains
 - Convert to low floors to allow ADA passengers to roll onto train at ground level
 - Longer trains

□ All costs are responsibility of DART

Schedule

☐ **November 2008 – September 2009**

- Construct train detection system
- Upgrade signal controllers and software
- Six months testing period

☐ **September 2009**

- Begin operation of new rail lines

☐ **Sept 2009 – Sept 2010**

- Implement enhanced system software features for remote performance monitoring
- Complete low floor train retrofits

Next Steps

❑ **October 22, 2008**

- City council action requested to accept DART funds to pay for City-provided elements of TSP project

❑ **December 10, 2008**

- City council action requested to establish an engineering services contract to provide design, testing, specifications, and cost analysis for City elements of TSP (DART funding)