Project Title: Bus Bulb Eastbound at NW Market St & 15th Ave NW

Bus Stop Location: NW Market St &15th Avenue NW

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

_		Specifications	
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Dus	DUID	SUCCITICATIONS	

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Project Title: Bus Bulb Eastbound at NW Market St & 14th Ave NW

Bus Stop Location: NW Market St &14th Avenue NW

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

_		Specifications
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at NW Market St & 11th Ave NW

Bus Stop Location: NW Market St &11th Avenue NW

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications	
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at NW Market St & 8th Ave NW

Bus Stop Location: NW Market St & 8th Avenue NW

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications	
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at NW Market St & 6th Ave NW

Bus Stop Location: NW Market St & 6th Avenue NW/5th Ave NW

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at NW Market St & 3rd Ave NW

Bus Stop Location: NW Market St & 3rd Avenue NW

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at NW Market St & Baker Ave NW

Bus Stop Location: NW Market St & Baker Avenue NW

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

D D II	Specifications
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at NW Market St & 1st Ave NW

Bus Stop Location: NW Market St & 1st Avenue NW

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

_		Specifications
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at N 46th St & Phinney Ave N

Bus Stop Location: N 46th St & Phinney Avenue N

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

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Dus	DUID	SUECITICATIONS	

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at N 46th St & Fremont Ave N

Bus Stop Location: N 46th St & Fremont Avenue N

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

	pecifications

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at N 46th St & Whitman Ave N

Bus Stop Location: N 46th St & Whitman Avenue N

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

_		Specifications	
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at N 46th St & Stone Way N

Bus Stop Location: N 45th St & Stone Way N

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at N 46th St & Woodlawn Ave N

Bus Stop Location: N 45th St & Woodlawn Avenue N

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Transit Signal Priority at N 45th St & Wallingford Ave N

TSP Project Description

Intersection: N 45th St & Wallingford Avenue N

 $\textbf{TSP Directions/Movements} \ \ \textbf{Eastbound through, we stbound through}$

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of N 45th St & Wallingford. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on N

45th St.

TSP Timings & Settings

TSP Timing Tier Level:
Proposed Cycle Length [sec]:
Minimum TSP Recovery [cycles]:
Maximum Available Bus Priority [calls/hr]:
Maximum Requested Bus Priority [calls/hr]:

Intersection Settings		
AM	MD	PM
Tier 2	Tier 2	Tier 2
100	100	100
2	2	2
12.0	12.0	12.0
12	10	10

TSP Direction/Movement

EBT (Inbound)

WBT (Outbound)

Minimum Green Extension [sec]: Design Bus Headway [min]:

AM	MD	PM	AM	MD	PM
6	7	6	6	7	6
10	12	12	10	12	12

Infrastructure

Controller Type:	Existing LMD 9200	Planned LMD 9200
Planned Controller Upgrade Date:	2008-2013	2 22
Central System	M30	000
Planned Central System Upgrade Date:	2008-2013	
Communications: Describe existing infrastructure and any planned upgrades.	Copper	

Project Title: Bus Bulb Eastbound at N 45th St & Wallingford Ave N

Bus Stop Location: N 45th St & Wallingford Avenue N

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

D D II	Specifications
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Eastbound at N 45th St & Sunnyside Ave N

Bus Stop Location: N 45th St & Sunnyside Avenue N

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications	
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Transit Signal Priority at NE 45th St & Thackery Pl NE

TSP Project Description

Intersection: NE 45th St & Thackery PI NE

TSP Directions/Movements Eastbound through, westbound through Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of N 45th St & Thackery Pl N. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on N

45th St.

TSP Timings & Settings

TSP Timing Tier Level: Proposed Cycle Length [sec]: Minimum TSP Recovery [cycles]: Maximum Available Bus Priority [calls/hr]: Maximum Requested Bus Priority [calls/hr]:

Intersection Settings		
AM	MD	PM
Tier 1	Tier 2	Tier 1
120	100	150
2	2	2
10.0	12.0	8.0
12	10	10

TSP Direction/Movement

Minimum Green Extension [sec]: Design Bus Headway [min]:

Eastbound (Inbound)		Westk	oound (Outb	oound)	
AM	MD	PM	AM	MD	PM
5	5	5	5	5	5
10	12	12	10	12	12

Infrastructure

Controller Type:	Existing LMD 9200	Planned LMD 9200
		LIVID J250
Planned Controller Upgrade Date:	2008-2013	
Central System	M30	000
Planned Central System Upgrade Date:	2008-2013	
Communications: Describe existing infrastructure and any planned upgrades.	Copper	

Project Title: Bus Bulb Eastbound at NE 45th St & Thackery Pl NE

Bus Stop Location: NE 45th St & Thackery PI NE

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

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Dus	Duib	opecineations	

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Transit Signal Priority at NE 45th St & Latona Ave N

TSP Project Description

Intersection: NE 45th St & Latona Avenue NE

TSP Directions/Movements Eastbound through, westbound through

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of N 45th St & Latona Ave NE. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on N

45th St.

TSP Timings & Settings

TSP Timing Tier Level:
Proposed Cycle Length [sec]:
Minimum TSP Recovery [cycles]:
Maximum Available Bus Priority [calls/hr]:
Maximum Requested Bus Priority [calls/hr]:

Intersection Settings		
AM	MD	PM
Tier 2	Tier 2	Tier 2
120	150	120
2	2	2
10.0	8.0	10.0
12	10	12

TSP Direction/Movement

Eastbound (Inbound)

Westbound (Outbound)

Minimum Green Extension [sec]:
Design Bus Headway [min]:

AM	MD	PM	AM	MD	PM
5	5	5	5	5	5
10	12	10	10	12	10

Infrastructure		

Controller Type:	Existing LMD 9200	Planned LMD 9200
Planned Controller Upgrade Date:	2008-2013	
Central System	M3	000
Planned Central System Upgrade Date:	2008-2013	
Communications: Describe existing infrastructure and any planned upgrades.	Copper	

Project Title: Transit Signal Priority at NE 45th St & 5th Ave NE

TSP Project Description

Intersection: NE 45th St & 5th Avenue NE

TSP Directions/Movements Eastbound through, westbound through **Corridor/Route:** Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of N 45th St & 5th Ave NE. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on N

45th St.

TSP Timings & Settings

TSP Timing Tier Level:
Proposed Cycle Length [sec]:
Minimum TSP Recovery [cycles]:
Maximum Available Bus Priority [calls/hr]:
Maximum Requested Bus Priority [calls/hr]:

Intersection Settings				
AM	MD	PM		
Tier 2	Tier 2	Tier 2		
100	100	100		
2	2	2		
12.0	12.0	12.0		
12	10	12		

TSP Direction/Movement

Minimum Green Extension [sec]: Design Bus Headway [min]:

AM	MD	PM	AM	MD	PM
5	5	5	5	5	5
10	12	10	10	12	10

Westbound (Outbound)

Infrastructure

Controller Type:		Existing LMD 9200		Planned LMD 9200	
Planned Controller Upgrade Date:		2008-2013			
Central System			M3000		
Planned Central System Upgrade Date:		2008-2013			
Communications: Describe existing infrastructure and any planned upgrades.	Copper				

Eastbound (Inbound)

Project Title: Parking Removal Eastbound at NE 45th St & 5th Ave NE to Latona Ave NE

Location: NE 45th St & 5th Ave NE to Latona Ave NE

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Installation of signs to restrict parking along NE 45th Street

eastbound approaching the intersections of Latona Ave NE through

5th Ave NE.

Required Documentation:

Project Title: Transit Signal Priority at NE 45th St & 7th Ave NE

TSP Project Description

Intersection: NE 45th St & 7th Avenue NE

TSP Directions/Movements Eastbound through, westbound through **Corridor/Route:** Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of N 45th St & 7th Ave NE. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on N

45th St.

TSP Timings & Settings

TSP Timing Tier Level:
Proposed Cycle Length [sec]:
Minimum TSP Recovery [cycles]:
Maximum Available Bus Priority [calls/hr]:
Maximum Requested Bus Priority [calls/hr]:

Intersection Settings						
AM	AM MD PM					
Tier 1	Tier 2	Tier 1				
100	105	85				
2	2	2				
12.0	11.4	14.1				
12	10	10				

TSP Direction/Movement

Eastbound (Inbound)

Westbound (Outbound)

Minimum Green Extension [sec]: Design Bus Headway [min]:

AM	MD	PM	AM	MD	PM
5	10	5	5	5	5
10	12	12	10	12	12

Infrastructure

	Existing	Planned
Controller Type:	LMD 9200	LMD 9200
Planned Controller Upgrade Date:	2008-2013	
Central System	M3	000
Planned Central System Upgrade Date:	2008-2013	
Communications: Describe existing infrastructure and any planned upgrades.	Copper	

Project Title: Queue Jump Westbound at NE 45th St & 7th Ave NE

Queue Jump Specifications

Intersection: NE 45th St & Roosevelt Ave NE

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Construction of a westbound right turn only pocket/lane - except for buses

and a receiving lane on opposite side of intersection to allow buses to merge

back into traffic.

(Assume all construction will occur within existing right of way).

Operating Description

	Eastbound*	Westbound
Hours of Operation	24 hours	24 hours
Other use when not Bus Lane	N/A	N/A

^{*}already in existing baseline condition

Q-Jump Parameters:

	AM	MD	PM	AM	MD	PM
Advance Green Time [sec]	N/A	N/A	N/A	11.5	8	8
Queue Bypass Distance [ft]	N/A	N/A	N/A	>300	>300	>300
Conflicting Right Turns [veh/hr]	N/A	N/A	N/A	1	95	150

Detection Strategy:

Use wireless detection when both bus and general purpose traffic occupy the lane.

Required Documentation:

These geometrics/channelization changes can be illustrated uisng marked up as builts, paint line sketches, or other baseline drawings or aerials as long as the documentation illustrates key details such as the length of the queue jump, lane width, and the location of any planned detection.

Project Title: Remove Left Turn Lane at NE 45th & Roosevelt Way

Intersection: NE 45th & Roosevelt Way

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Remove left turn lanes at the intersection of NE 45th & Roosevelt Way.

Signal Timing Parameters

	Inbound movement: EBT			Outbound Movement: WBT		
	AM	MD	PM	AM	MD	PM
Existing Timing						
Cycle Length [sec]	N/A	N/A	N/A	100	100	100
Split [sec]	N/A	N/A	N/A	69	74	74
G/C ratio:	N/A	N/A	N/A	0.69	0.74	0.74
Proposed Timing						
Cycle Length [sec]	N/A	N/A	N/A	100	100	70
Split [sec]	N/A	N/A	N/A	51	59	45
G/C ratio:	N/A	N/A	N/A	0.51	0.59	0.64

Required Documentation, to be submitted with Synchro Model on CD:

Synchro Arterial Level of Service Report (baseline) Synchro Arterial Level of Service Report (optimized)

Re-timing Interval Commitment Every 5 Years

Note: Proposals that include signal retiming as a proposed improvement project will be expected to commit to retime their signals on a regular basis for the term of the service partnership agreement; the retiming interval need not be more than once every three years but must not be less than once every five years.

Project Title: Transit Signal Priority at NE 45th St & 15th Ave N

TSP Project Description

Intersection: NE 45th St & 15th Avenue NE

TSP Directions/Movements Northbound Left

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of N 45th St & 15th Ave NE. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on N

45th St.

TSP Timings & Settings

TSP Timing Tier Level:
Proposed Cycle Length [sec]:
Minimum TSP Recovery [cycles]:
Maximum Available Bus Priority [calls/hr]:
Maximum Requested Bus Priority [calls/hr]:

Intersection Settings			
AM	MD	PM	
Tier 2	Tier 2	Tier 2	
101	100	120	
2	2	2	
11.9	12.0	10.0	
12	10	10	

TSP Direction/Movement

Westbound (Outbound)

Eastbound (Inbound)

Minimum Green Extension [sec]: Design Bus Headway [min]:

AM	MD	PM	AM	MD	PM
12	12	12	6	7	6
10	12	12	10	12	12

Infrastructure

Controller Type:

Existing Planned

LMD 9200

LMD 9200

Planned Controller Upgrade Date:

2008-2013

Central System

M3000

Planned Central System Upgrade Date: 2008-2013

Communications: Describe existing infrastructure and any planned upgrades.

Copper

Project Title: Queue Jump at NE 45th St & 15th Ave NE

Queue Jump Specifications

Intersection: NE 45th St & 15th Ave NE

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Construction of left-turn only lane (on right side of roadway) for buses and a

westbound receiving lane on opposite side of intersection to allow buses to

merge back into traffic.

(Assume all construction will occur within existing right of way).

Operating Description

		Westbound
Hours of Operation		
Other use when not Bus Lane	N/A	

Q-Jump Parameters:

	AM	MD	PM
Advance Green Time [sec]	8	8	8
Queue Bypass Distance [ft]		100	100
Conflicting Right Turns [veh/hr]	1	1	1

Detection Strategy:

Use wireless detection when both bus and general purpose traffic occupy the lane.

Required Documentation:

These geometrics/channelization changes can be illustrated uisng marked up as builts, paint line sketches, or other baseline drawings or aerials as long as the documentation illustrates key details such as the length of the queue jump, lane width, and the location of any planned detection.

Project Title: Bus Bulb Southbound at 15th Ave NE & NE 43rd St.

Bus Stop Location: 15th Ave NE & NE 43rd St.

Direction: Inbound (Eastbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications	
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: BAT Lane Westbound from NE 45th St & 15th Ave NE to NE 45th St &

7th Ave NE, Remove LT lane

Roadway: NE 45th St From: 15th Ave NE To: 7th Ave NE

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Construction of a business access and transit lane westbound on NE 45th

Street from 15th Ave NE to 7th Ave NE.

Transit Lane Parameters

Hours of Operation 24-hours
Other use when not Bus Lane N/A

Required Documentation:

- * Cross section diagram including lane widths (existing)
- * Cross section diagram including lane widths (proposed)
- * Channelization sketch showing treatments at intersections.

These geometrics/channelization changes can be illustrated using marked up as-builts, aerials, or typical cross sections as long as the documentation illustrates lane widths and the termini of the bus facility.

Project Title: Bus Bulb Westbound at N 45th St & Sunnyside Ave N

Bus Stop Location: N 45th St & Sunnyside Ave N

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

D D II	Specifications
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Dus Duib	Specifications

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at N 45th St & Wallingford Ave N

Bus Stop Location: N 45th St & Wallingford Ave N

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at N 45th St & Woodlawn Ave N

Bus Stop Location: N 45th St & Wallingford Ave N

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Spe	• • • • •
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at N 45th St & Stone Way N

Bus Stop Location: N 45th St & Stone Way N

Direction: Outbound (Westbound) **Corridor/Route:** Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at N 46th St & Whitman Ave N

Bus Stop Location: N 45th St & Whitman Avenue N

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

D D II	Specifications
Rue Ruin	Specifications
Dus Duib	Specifications

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at N 46th St & Fremont Ave N

Bus Stop Location: N 45th St & Whitman Avenue N

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

IRIIC RIIIN S	Specifications
ibus buib s	DUCCIIICALIUIIS

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at N 46th St & Phinney Ave N

Bus Stop Location: N 45th St & Phinney Avenue N

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

_ :		
IBus Bulk	Specifications	

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: BAT Lane Westbound on N 46th St & Phinney Ave

Roadway: NE 46th St

From: Phinney Avenue N

To: 1st Avenue N

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Construction of a business access and transit lane westbound on N 46th

Street from Fremont Ave to west of Phinney Ave.

Transit Lane Parameters

	Westbound
Hours of Operation	
Other use when not Bus Lane	N/A

Required Documentation:

- * Cross section diagram including lane widths (existing)
- * Cross section diagram including lane widths (proposed)
- * Channelization sketch showing treatments at intersections.

These geometrics/channelization changes can be illustrated using marked up as-builts, aerials, or typical cross sections as long as the documentation illustrates lane widths and the termini of the bus facility.

Project Title: Bus Bulb Westbound at NW Market St & 1st Avenue NW

Bus Stop Location: NW Market St & 1st Ave NW

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

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0115	DUILD	Specifications
	_ ~.~	

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at NW Market St & Baker Avenue NW

Bus Stop Location: NW Market St & Baker Ave NW

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

	Specifications
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Dus Duib	Specifications

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at NW Market St & 3rd Avenue NW

Bus Stop Location: NW Market St & 3rd Ave NW

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

_		Specifications	
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	DIIII	SOFCHICAHOUS	
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at NW Market St & 6th Avenue NW/5th Ave NW

Bus Stop Location: NW Market St & 6th Ave NW/5th Ave NW

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

D	D. H.	Specifications	
IKIIS	RIIIN	Specifications	
Dus	Duib	opecineations	

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at NW Market St & 8th Avenue NW

Bus Stop Location: NW Market St & 8th Ave NW

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

D	D. H.	Specifications	
IKIIS	RIIIN	Specifications	
Dus	Duib	opecineations	

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at NW Market St & 11th Avenue NW

Bus Stop Location: NW Market St & 11th Ave NW

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

_		Specifications	
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	DIIII	SOFCHICAHOUS	
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at NW Market St & 14th Avenue NW

Bus Stop Location: NW Market St & 14th Ave NW

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications	
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at NW Market St & 15th Avenue NW

Bus Stop Location: NW Market St & 15th Ave NW

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

_		Specifications
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Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Bus Bulb Westbound at NE 45th St & Latona Avenue NE

Bus Stop Location: NE 45th St & Latona Ave NE

Direction: Outbound (Westbound)

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: A concrete bulb will be installed at this bus stop which will convert it

into an in-lane stop and will eliminate pull-out delay to buses leaving

the bus stop.

Bus Bulb Specifications

Length: 50 feet

Median Treatment: None

Required Documentation:

Provide a typical bus bulb detail along with a map showing the location at each intersection where the bus bulb will be constructed.

Note:

Project Title: Remove Left Turn Lake at NE 45th St & 11th Ave NE

Intersection: NE 45th St & 11th Ave NE

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Remove left turn lanes at the intersection of NE 45th & 11th Ave NE.

Signal Timing Parameters

_						
	Inbound movement: EBT			Outbound Movement: WBT		
	AM	MD	PM	AM	MD	PM
Existing Timing						
Cycle Length [sec]	100	100	100	100	100	100
Split [sec]	65	52	52	65	52	52
G/C ratio:	0.65	0.52	0.52	0.65	0.52	0.52
Proposed Timing						
Cycle Length [sec]	100	100	70	100	100	70
Split [sec]	61	64	35	61	64	35
G/C ratio:	0.61	0.64	0.50	0.61	0.64	0.50

Required Documentation, to be submitted with Synchro Model on CD:

Synchro Arterial Level of Service Report (baseline) Synchro Arterial Level of Service Report (optimized) See project BUD 24.

Re-timing Interval Commitment Every 5 Years

Project Title: Remove Left Turn Lane at NE 45th St & 12th Ave NE

Intersection: NE 45th St & 12th Ave NE

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Remove left turn lanes at the intersection of NE 45th & 12th Ave NE.

Signal Timing Parameters

_						
	Inbound movement: EBT			Outbound Movement: WBT		
	AM	MD	PM	AM	MD	PM
Existing Timing						
Cycle Length [sec]	100	100	100	100	100	100
Split [sec]	53	61	61	53	54	54
G/C ratio:	0.53	0.61	0.61	0.53	0.54	0.54
Proposed Timing						
Cycle Length [sec]	100	100	70	100	100	70
Split [sec]	67	71	45	67	71	45
G/C ratio:	0.67	0.71	0.64	0.67	0.71	0.64

Required Documentation, to be submitted with Synchro Model on CD:

Synchro Arterial Level of Service Report (baseline)
Synchro Arterial Level of Service Report (optimized)
See project BUD 24.

Re-timing Interval Commitment Every 5 Years

Project Title: Remove Left Turn Lane at NE 45th St & Brooklyn Ave NE

Intersection: NE 45th St & Brooklyn Ave NE

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Remove left turn lanes at the intersection of NE 45th St & Brooklyn Ave NE.

Signal Timing Parameters

	Inbound movement: EBT			Outbound Movement: WBT		
	AM	MD	PM	AM	MD	PM
Existing Timing						
Cycle Length [sec]	100	100	100	100	100	100
Split [sec]	47	42	42	52	45	45
G/C ratio:	0.47	0.42	0.42	0.52	0.45	0.45
Proposed Timing						
Cycle Length [sec]	100	100	70	100	100	70
Split [sec]	53	60	31	53	60	31
G/C ratio:	0.53	0.60	0.44	0.53	0.60	0.44

Required Documentation, to be submitted with Synchro Model on CD:

Synchro Arterial Level of Service Report (baseline) Synchro Arterial Level of Service Report (optimized) See project BUD 24.

Re-timing Interval Commitment Every 5 Years

Project Title: Remove Left Turn Lane at NE 45th St & University Way NE

Intersection: NE 45th St & University Way NE

Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction: City of Seattle

Project Objective: Remove left turn lanes at the intersection of NE 45th St & University Way

NE.

Signal Timing Parameters

_						
	Inbound movement: EBT			Outbound Movement: WBT		
	AM	MD	PM	AM	MD	PM
Existing Timing						
Cycle Length [sec]	100	100	100	100	100	100
Split [sec]	63	59	59	63	59	59
G/C ratio:	0.63	0.59	0.59	0.63	0.59	0.59
Proposed Timing						
Cycle Length [sec]	100	100	70	100	100	70
Split [sec]	67	62	42	67	62	42
G/C ratio:	0.67	0.62	0.60	0.67	0.62	0.60

Required Documentation, to be submitted with Synchro Model on CD:

Synchro Arterial Level of Service Report (baseline) Synchro Arterial Level of Service Report (optimized) See project BUD 24.

Re-timing Interval Commitment Every 5 Years

Project Title: Transit Signal Priority at 15th Ave NE & NE 43rd St

TSP Project Description

Intersection: 15th Ave NE & NE 43rd St

TSP Directions/Movements Northbound through, southbound through Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of 15th Ave NE & NE 43rd St. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on

15th Ave NE.

TSP Timings & Settings

TSP Timing Tier Level: Proposed Cycle Length [sec]: Minimum TSP Recovery [cycles]: Maximum Available Bus Priority [calls/hr]: Maximum Requested Bus Priority [calls/hr]:

Intersection Settings					
AM	AM MD PM				
Tier 1	Tier 2	Tier 2			
100	80	120			
2	2	2			
12.0	15.0	10.0			
12	10	10			

TSP Direction/Movement

Minimum Green Extension [sec]: Design Bus Headway [min]:

Westbound (Outbound)			East	bound (Inbo	ound)
AM	MD	PM	AM	MD	PM
6	6	6	10	10	10
10	12	12	10	12	12

Infrastructure

Controller Type:	Existing LMD 9200	Planned LMD 9200
Planned Controller Upgrade Date:	2008-2013]
Central System	M3	3000
Planned Central System Upgrade Date:	2008-2013]
Communications: Describe existing infrastructure and any planned upgrades.	Copper	

Project Title: Transit Signal Priority at 15th Ave NE & NE 42nd St

TSP Project Description

Intersection: 15th Ave NE & NE 42nd St

TSP Directions/Movements Northbound through, southbound through **Corridor/Route:** Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of 15th Ave NE & NE 42nd St. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on

15th Ave NE.

TSP Timings & Settings

TSP Timing Tier Level:
Proposed Cycle Length [sec]:
Minimum TSP Recovery [cycles]:
Maximum Available Bus Priority [calls/hr]:
Maximum Requested Bus Priority [calls/hr]:

Intersection Settings					
AM MD PM					
Tier 1	Tier 1	Tier 1			
100	80	120			
2	2	2			
12.0	15.0	10.0			
12	10	10			

TSP Direction/Movement

Minimum Green Extension [sec]: Design Bus Headway [min]:

AM	MD	PM	AM	MD	PM
6	6	6	7	7	7
10	12	12	10	12	12

Eastbound (Inbound)

Infrastructure

		Planned LMD 9200
		LIVID J250
2008-7		
	M3	000
2008-2	2013	
Copper		
	2008-2	Existing

Project Title: Transit Signal Priority at 15th Ave NE & NE 41st St

TSP Project Description

Intersection: 15th Ave NE & NE 41st St

TSP Directions/Movements Northbound through, southbound through Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of 15th Ave NE & NE 41st St. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on

15th Ave NE.

TSP Timings & Settings

TSP Timing Tier Level: Proposed Cycle Length [sec]: Minimum TSP Recovery [cycles]: Maximum Available Bus Priority [calls/hr]: Maximum Requested Bus Priority [calls/hr]:

Intersection Settings					
AM	MD	PM			
Tier 1	Tier 1	Tier 2			
100	80	120			
2	2	2			
12.0	15.0	10.0			
12	10	10			

TSP Direction/Movement

Minimum Green Extension [sec]: Design Bus Headway [min]:

Westbound (Outbound)			East	bound (Inbo	ound)
AM MD PM		AM MD PM			
3	3	3	9	9	9
10	12	12	10	12	12

Infrastructure

Controller Type:	Existing LMD 9200	Planned LMD 9200
Planned Controller Upgrade Date:	2008-2013	
Central System	M3	000
Planned Central System Upgrade Date:	2008-2013	
Communications: Describe existing infrastructure and any planned upgrades.	Copper	

Project Title: Transit Signal Priority at 15th Ave NE & NE 40th St

TSP Project Description

Intersection: 15th Ave NE & NE 40th St

TSP Directions/Movements Northbound through, southbound through **Corridor/Route:** Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of 15th Ave NE & NE 40th St. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on

15th Ave NE.

TSP Timings & Settings

TSP Timing Tier Level:
Proposed Cycle Length [sec]:
Minimum TSP Recovery [cycles]:
Maximum Available Bus Priority [calls/hr]:
Maximum Requested Bus Priority [calls/hr]:

Intersection Settings					
AM	MD	PM			
Tier 2	Tier 2	Tier 2			
100	80	120			
2	2	2			
12.0	15.0	10.0			
12	10	10			

TSP Direction/Movement

Minimum Green Extension [sec]: Design Bus Headway [min]:

 Westbound (Outbound)			East	bound (Inbo	ound)
AM	MD	PM	AM	MD	PM
9	9	9	3	3	3
10	12	12	10	12	12

Infrastructure

Controller Type:	Existing LMD 9200	Planned LMD 9200
Planned Controller Upgrade Date:	2008-2013	
Central System	M3	000
Planned Central System Upgrade Date:	2008-2013	
Communications: Describe existing infrastructure and any planned upgrades.	Copper	

Project Title: Transit Signal Priority at 15th Ave NE & NE Pacific St

TSP Project Description

Intersection: 15th Ave NE & NE Pacific St

TSP Directions/Movements Northbound through, southbound through Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle

Traffic Signal Operator: City of Seattle

Project Objective: Intersection of 15th Ave NE & NE Pacific St. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling

southbound on 15th Ave NE and westbound on NE Pacific St.

TSP Timings & Settings

TSP Timing Tier Level: Proposed Cycle Length [sec]: Minimum TSP Recovery [cycles]: Maximum Available Bus Priority [calls/hr]: Maximum Requested Bus Priority [calls/hr]:

Intersection Settings			
AM	MD	PM	
Tier 2	Tier 2	Tier 2	
100	100	100	
2	2	2	
12.0	12.0	12.0	
12	10	10	

TSP Direction/Movement

Minimum Green Extension [sec]: Design Bus Headway [min]:

West	bound (Outh	oound)	East	bound (Inbo	ound)
AM	MD	PM	AM	MD	PM
9	9	9	5	5	5
10	12	12	10	12	12

Infrastructure

Controller Type:	Existing LMD 9200	Planned LMD 9200
••		LIVID 9200
Planned Controller Upgrade Date:	2008-2013	
Central System	M3	000
Planned Central System Upgrade Date:	2008-2013	
Communications: Describe existing infrastructure and any planned upgrades.	Copper	

Project Title: Transit Signal Priority at Market St & 15th Ave NW

TSP Project Description

Intersection: Market St & 15th Ave NW

TSP Directions/Movements Northbound through, southbound through Corridor/Route: Market to 45th UVTN Corridor/Route 44

Jurisdiction Owner: City of Seattle Traffic Signal Operator: City of Seattle

Project Objective: Intersection of Market St & 15th Ave NW. Installation of a signal controller

cabinet and bus detection. Controller provides priority to buses travelling on

Market St.

TSP Timings & Settings

TSP Timing Tier Level: Proposed Cycle Length [sec]: Minimum TSP Recovery [cycles]: Maximum Available Bus Priority [calls/hr]: Maximum Requested Bus Priority [calls/hr]:

Intersection Settings			
AM	MD	PM	
Tier 1	Tier 1	Tier 1	
110	100	110	
2	2	2	
10.9	12.0	10.9	
12	10	10	

TSP Direction/Movement

Minimum Green Extension [sec]: Design Bus Headway [min]:

West	bound (Outh	oound)	East	bound (Inbo	ound)
AM	MD	PM	AM	MD	PM
10	10	10	10	10	10
10	12	12	10	12	12

Infrastructure

Controller Type:	Existing LMD 8000	Planned EPAC M52
	2008-2013	21,710 11102
Planned Controller Upgrade Date:		
Central System	ACT	ΓRA
Planned Central System Upgrade Date:	2008-2013	
Communications: Describe existing infrastructure and any planned upgrades.	Fiberoptic	