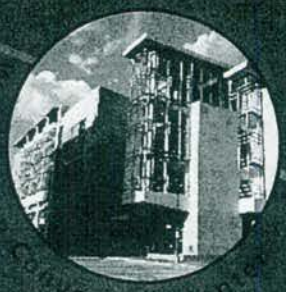
Appendix B

Existing Transit/Metrobus Schedules and Routes

DC CIRCULATOR MAP AND INFORMATION GUIDE

dccirculator



Brought to you by:
Downtown BID
Georgetown BID
Golden Triangle BID
Washington Convention Center
Commuter Direct
goDCgo.com
National Capital Planning Commission

d.
District Department of Transportation

SmarTrip

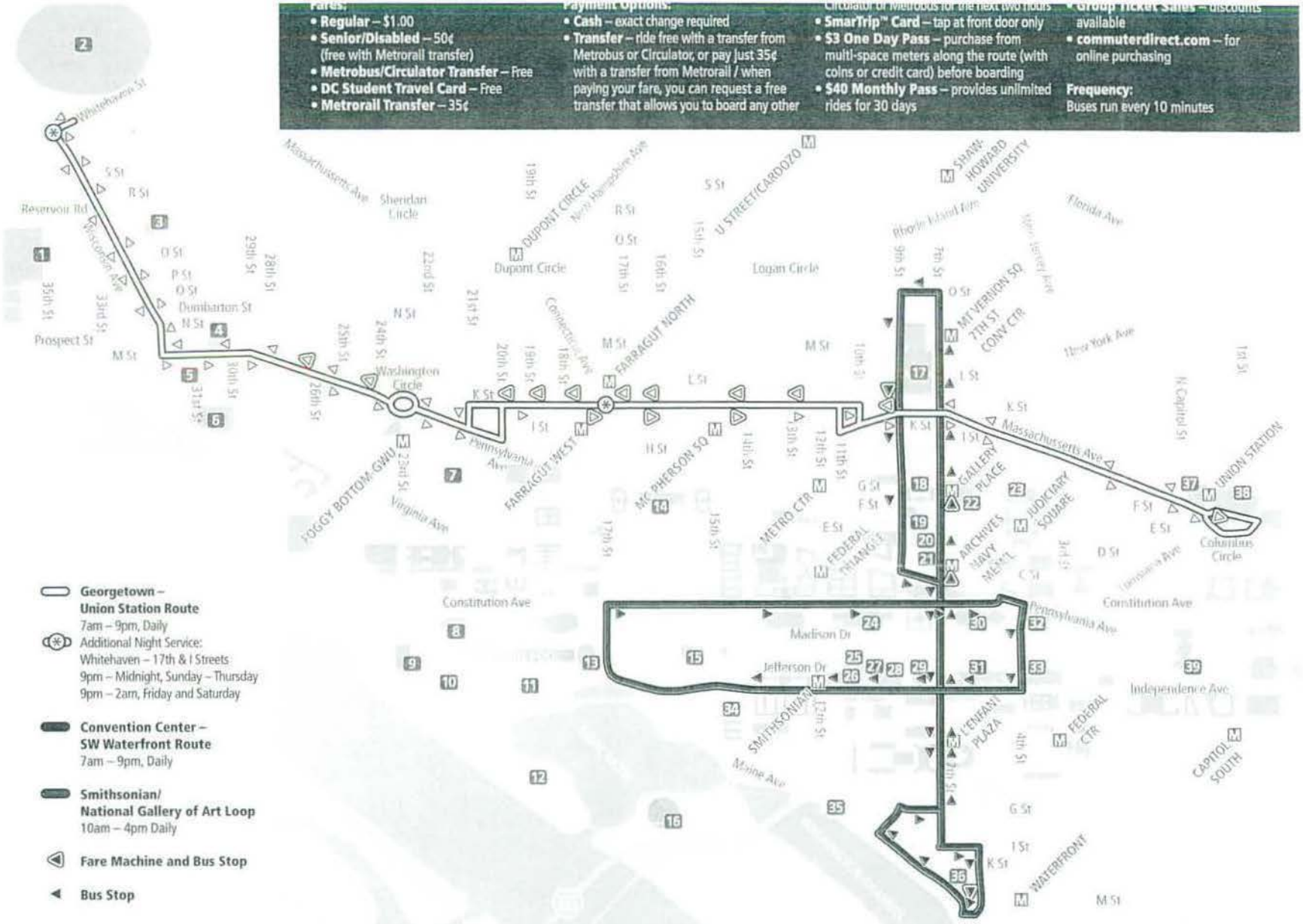
Customer Service
(202) 962-1423 **dccirculator.com**

B-1

Fares:
- **Regular** – $1.00
- **Senior/Disabled** – 50¢ (free with Metrorail transfer)
- **Metrobus/Circulator Transfer** – Free
- **DC Student Travel Card** – Free
- **Metrorail Transfer** – 35¢

Payment Options:
- **Cash** – exact change required
- **Transfer** – ride free with a transfer from Metrobus or Circulator, or pay just 35¢ with a transfer from Metrorail / when paying your fare, you can request a free transfer that allows you to board any other Circulator or Metrobus for the next two hours
- **SmarTrip™ Card** – tap at front door only
- **$3 One Day Pass** – purchase from multi-space meters along the route (with coins or credit card) before boarding
- **$40 Monthly Pass** – provides unlimited rides for 30 days
- **Group Ticket Sales** – discounts available
- **commuterdirect.com** – for online purchasing

Frequency:
Buses run every 10 minutes



- **Georgetown – Union Station Route**
  7am – 9pm, Daily
  Additional Night Service:
  Whitehaven – 17th & I Streets
  9pm – Midnight, Sunday – Thursday
  9pm – 2am, Friday and Saturday
- **Convention Center – SW Waterfront Route**
  7am – 9pm, Daily
- **Smithsonian/ National Gallery of Art Loop**
  10am – 4pm Daily
- **Fare Machine and Bus Stop**
- **Bus Stop**

Points of Interest

Arena Stage -36
Arts and Industries Building -28
C & O Canal - 5
FDR Memorial - 12
Freer Gallery of Art and Arthur M. Sackler Gallery - 26
George Washington University - 7
Georgetown University - 1
Hirshhorn Museum and Sculpture Garden - 29
International Spy Museum - 19
Jefferson Memorial - 16
Korean War Veterans Memorial - 10
Lincoln Memorial - 9
National Air and Space Museum - 31
National Building Museum - 23
National Gallery of Art – West Building - 30
National Gallery of Art – East Building - 32
National Holocaust Memorial Museum - 34
National Museum of African Art - 27
National Museum of the American Indian - 33
National Museum of Natural History - 24
National Postal Museum - 37
National WWII Memorial - 13
Old Stone House - 4
Shakespeare Theatre Company - 20
Smithsonian American Art Museum and National Portrait Gallery - 18
Smithsonian Castle Info Center - 25
SW Waterfront - 35
Tudor Place - 3
Union Station - 38
U.S. Capitol - 39
U.S. Naval Observatory - 2
Verizon Center - 22
Vietnam Memorial - 8
Washington Convention Center - 17
Washington Harbour - 6
Washington Monument - 15
The White House - 14
Woolly Mammoth Theatre Company - 21
WWI Memorial - 11

Fares are only $1 and buses run every 10 minutes

Bienvenido a su Metrobus

Los siguientes son algunos consejos para hacer los viajes más fáciles y rápidos para usted y los demás clientes

- Cada cliente debe pagar por un boleto, y hasta dos niños menores de cinco años pueden viajar gratis con un cliente que haya pagado por un boleto.
- Por favor tenga a la mano el costo exacto del boleto cuando pague en efectivo, o tenga listo un pase semanal válido, un boleto de transbordo válido o una tarjeta SmarTrip® al momento de abordar.
- Si necesita hacer transbordo a otro autobús, pida un boleto de transbordo al conductor del autobús, el cual le permitirá viajar gratis en un período de dos horas (según lo indicado en su boleto de transbordo) después de su primer viaje en autobús. Si utiliza una tarjeta SmarTrip® para pagar su tarifa y si el transbordo será a Metrobus o a DC Circulator, no necesitará un boleto de transbordo en papel porque su tarjeta SmarTrip "sabe" que usted hará el transbordo y no deducirá el valor del viaje en el segundo autobús.
- Los sistemas de autobuses regionales - Metrobus, ART, TheBus, Connect-A-Ride, CUE, DASH, DC Circulator, Fairfax Connector, George, PRTC OmniRide/OmniLink y Ride On – aceptan los boletos de transbordo entre sí. Sin embargo, debe obtener un boleto de transbordo en papel y pagar la diferencia en la tarifa si el transbordo es de una ruta de menor costo a una ruta de mayor costo.
- Si viaja parado, por su seguridad por favor permanezca detrás de la línea amarilla marcada en el piso, y sujete firmemente un pasamano.
- Por favor tome nota de que los asientos prioritarios situados cerca de la puerta están reservados para los clientes con impedimentos y para las personas de edad avanzada.
- Para alertar al conductor del autobús de que usted desea salir del autobús en la siguiente parada, tire del cable instalado a lo largo de las ventanas superiores, o presione el botón del pasamano que le guía hacia la puerta posterior.
- Para asegurar un viaje placentero para todos, por favor sepa que no puede:
  - Comer o beber
  - Fumar
  - Escupir o arrojar basura
  - Utilizar equipos de audio o video, a menos que tenga audífonos
  - Traiga animales (excepto animales de servicio) cuando viaje en el Metrobus

Servicio del Metrobus durante los días de fiesta

Horario regular:
Día de Martin Luther King Jr.
Día de los Presidentes
Día de la Raza
Día de los Veteranos

Horario de sábado:
4 de julio

Horario de domingo:
Año Nuevo
Día de la Recordación
Día del Trabajo
Día de Acción de Gracias
Navidad

Para obtener información acerca de su sistema Metro, utilizar

Welcome to your Metrobus

Here are some tips to make riding easy and quick for you and your fellow customers

- Each customer must pay a fare. Up to two children under age five may ride free with a fare-paying customer.
- Please have exact fare when paying with cash, a valid weekly bus pass, a valid transfer or a SmarTrip® card ready when boarding.
- If you will be transferring to another bus, ask the bus operator for a transfer. It allows you to ride free within a two-hour time period (as shown on your transfer) following your first bus trip. If you use a SmarTrip® card to pay your fare and are transferring to Metrobus or DC Circulator, you do not need a paper transfer because your SmarTrip card "knows" that you are transferring and will not deduct value on the second bus.
- The regional bus systems - Metrobus, ART, TheBus, Connect-A-Ride, CUE, DASH, DC Circulator, Fairfax Connector, George, PRTC OmniRide/OmniLink and Ride On - honor each other's transfers. However, you must get a paper transfer and pay the difference in fare if you transfer from a lower priced route to a higher priced route.
- If standing, for your safety please stay behind the yellow line on the floor and hold a handrail securely.
- Please note that priority seats by the door are reserved for customers with disabilities and senior citizens.
- To alert the bus operator that you want to get off at the next stop, pull the cord that runs along the top of the windows or press the button on the handrail leading out the back door.
- To ensure a pleasant ride for everyone, please do not:
  - Eat or drink
  - Smoke
  - Spit or litter
  - Play audio or video equipment without earphones
  - Bring animals (except service animals) onto Metrobus

Metrobus holiday service

Regular schedule:
Martin Luther King Jr. Day
Presidents Day
Columbus Day
Veterans Day

Saturday schedule:
July 4th

Sunday schedule:
New Year's Day
Memorial Day
Labor Day
Thanksgiving Day
Christmas Day

To get information about your Metro system, use Next Bus, share a suggestion, report a problem or

English-Español

metrobus

5A
D.C. - Dulles Line

& All Metrobuses are fully accessible and are equipped with lifts or ramps for wheelchair accessibility
Todos los autobuses de Metro son accesibles a personas con impedimentos y están equipados con rampas o elevadores para sillas de ruedas

Express Fare
$3.00 Using SmarTrip®
$3.10 Using Cash

Serves these locations-
Brinda servicio a estas ubicaciones
L'Enfant Plaza station
Rosslyn station
Tysons-Westpark Transit Station
Herndon-Monroe Park & Ride Lot
Washington Dulles International Airport

Schedule 7-15-07 Reprinted 1-6-08

How to use this timetable

- Use the map to find the stops closest to where you will get on and off the bus.
- Select the schedule (Weekday, Saturday, Sunday) for when you will travel. Along the top of the schedule, find the stop at or nearest the point where you will get on the bus. Follow that column down to the time you want to leave.
- Use the same method to find the times the bus is scheduled to arrive at the stop where you will get off the bus.
- If the bus stop is not listed, use the time shown for the bus stop before it as the time to wait at the stop.
- The end-of-the-line or last stop is listed in ALL CAPS on the schedule.

Cómo usar este horario

- Use este mapa para localizar las paradas más cercanas a donde se subirá y bajará del autobús.
- Seleccione el horario (Entre semana, sábado, domingo) de cuando viajará. A lo largo de la parte superior del horario, localice la parada o el punto más cercano a la parada en la que se subirá al autobús. Siga esa columna hacia abajo hasta la hora en la que desee salir.
- Utilice el mismo método para localizar las horas en que el autobús está programado para llegar a la parada en donde desea bajarse del autobús.
- Si la parada del autobús no está listada use la hora que se muestra en la parada anterior como la hora de espera en la parada.
- El final de la ruta o la última parada del autobús aparece en letras MAYÚSCULAS en el horario.

Route Number	Dulles Airport	Herndon-Monroe Park & Ride Lot	Tysons-Westpark Transit Station	Rosslyn M	D & 7th Sts. SW (L'ENFANT PLAZA) M
5A	5:50	5:56	-	6:25	6:37
5A	6:30	6:37	-	7:09	7:27
5A	7:10	7:17	-	7:49	8:07
5A	8:00	8:07	-	8:39	8:57
5A	8:40	8:47	-	9:19	9:37
5A	9:20	9:27	-	9:54	10:07
5A	10:00	10:07	-	10:34	10:47
5A	10:40	10:47	10:59	11:15	11:28
5A	11:20	11:27	11:39	11:55	12:08
5A	12:00	12:07	12:19	12:35	12:48
5A	12:40	12:47	12:59	1:15	1:28
5A	1:20	1:27	1:39	1:55	2:08
5A	2:00	2:07	2:19	2:35	2:48
5A	2:40	2:47	-	3:14	3:27
5A	3:20	3:28	-	4:00	4:14
5A	4:05	4:13	-	4:45	4:59
5A	4:45	4:53	-	5:25	5:39
5A	5:25	5:33	-	6:05	6:19
5A	6:05	6:13	-	6:45	6:59
5A	6:45	6:53	-	7:25	7:39
5A	7:25	7:33	7:45	8:00	8:14
5A	8:05	8:13	8:25	8:40	8:54
5A	8:40	8:48	9:00	9:15	9:29
5A	9:20	9:28	9:40	9:55	10:09
5A	10:00	10:08	10:20	10:35	10:49
5A	10:40	10:48	11:00	11:15	11:29
5A	11:40	11:48	12:00	12:15	12:29

Route Number	D & 7th Sts. SW (L'Enfant Plaza) M	Rosslyn M	Tysons-Westpark Transit Station	Herndon-Monroe Park & Ride Lot	DULLES AIRPORT
5A	4:50	5:02	-	5:32	5:42
5A	5:30	5:42	-	6:12	6:22
5A	6:10	6:22	-	6:52	7:02
5A	6:50	7:05	-	7:38	7:49
5A	7:35	7:50	-	8:23	8:34
5A	8:15	8:30	-	9:03	9:14
5A	8:50	9:05	-	9:38	9:49
5A	9:30	9:45	-	10:18	10:29
5A	10:10	10:24	10:43	11:00	11:11
5A	10:55	11:09	11:28	11:45	11:56
5A	11:35	11:49	12:08	12:25	12:36
5A	12:15	12:29	12:48	1:05	1:16
5A	12:50	1:04	1:23	1:40	1:51
5A	1:30	1:44	2:03	2:20	2:31
5A	2:10	2:24	2:43	3:00	3:11
5A	2:55	3:10	-	3:49	4:01
5A	3:35	3:50	-	4:29	4:41
5A	4:10	4:25	-	5:04	5:16
5A	4:50	5:05	-	5:44	5:56
5A	5:30	5:45	-	6:24	6:36
5A	6:10	6:25	-	7:04	7:16
5A	6:50	7:05	-	7:44	7:56
5A	7:30	7:41	8:01	8:20	8:29
5A	8:10	8:21	8:41	9:00	9:09
5A	8:50	9:01	9:21	9:40	9:49
5A	9:38	9:48	10:05	10:22	10:31
5A	10:38	10:48	11:05	11:22	11:31

He knows:

- where the bus is going.

She knows:

- where the bus is going.
- when it will arrive.
- which Metro station to transfer to.
- how much it will cost.
- walking directions to her final destination.

She used the METRO Trip Planner.

Know what she knows before you leave. Log onto MetroOpensDoors.com and use the Trip Planner.

B-4

How to use this timetable

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English-Español

metrobus

70,71

Weekday only

Georgia Ave.-7th St. Line

& All Metrobuses are fully accessible and are equipped with lifts or ramps for wheelchair accessibility
Todos los autobuses de Metro son accesibles a personas con impedimentos y están equipados con rampas o elevadores para sillas de ruedas

Serves these locations-
Brinda servicio a estas ubicaciones

Silver Spring station
Walter Reed Army Medical Center
Brightwood
Georgia Ave-Petworth station
Parkview
Howard University
Mt Vernon Sq/7th St-Convention Center station
Gallery Pl-Chinatown station
Archives-Navy Mem'l-Penn Quarter station
L'Enfant Plaza station
Waterfront-SEU station
Fort McNair
Buzzard Point (71)

Schedule 10-1-07

INFORMATION ANYTIME 202-637-7000 TTY 202-638-3780

Metro opens doors
MetroOpensDoors.com

Washington Metropolitan Area Transit Authority

A District of Columbia, Maryland and Virginia Transit Partnership


Georgia Avenue - 7th Street Line
Routes 70, 71
For route and schedule information
Call 202-637-7000
www.metroopensdoors.com
WAYNE AVE
SILVER SPRING STATION
GEORGIA AVE
MD
DC
BRIGHTWOOD
MISSOURI AVE
KENNEDY ST
GEORGIA AVE
PARKVIEW
GEORGIA AVE-PETWORTH STATION
Legend
— Metrorail Station
— Terminal Stands
GEORGIA AVE
SHAW-HOWARD UNIV STATION
FLORIDA AVE
7th ST
MT VERNON SQ/7th ST-CONVENTION CENTER STATION
MASSACHUSETTS AVE
ARCHIVES-NAVY MEM'L-PENN QUARTER STATION
GALLERY PL-CHINATOWN STATION
PENNSYLVANIA AVE
NW
ARCHIVES
CONSTITUTION AVE
INDEPENDENCE AVE
NATIONAL MALL
SW
L'ENFANT PLAZA STATION
WATERFRONT-SEU STATION
MAINE AVE
70
71
BUZZARD POINT

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English-Español

metrobus

70,71

Weekend only

Georgia Ave.-7th St. Line

Find your bus with Next Bus!
¡Encuentre su autobús con Next Bus!
details inside
detalles adentro

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Howard University
Washington Convention Center
Gallery Pl-Chinatown station
Archives-Navy Mem'l-Penn Quarter station
L'Enfant Plaza station
Waterfront-SEU station
Fort McNair
Buzzard Point (71)

Schedule 6-24-07

INFORMATION ANYTIME 202-637-7000 TTY 202-638-3780 ♿

Metro opens doors
MetroOpensDoors.com

Washington Metropolitan Area Transit Authority

A District of Columbia, Maryland and Virginia Transit Partnership

R-7


Georgia Avenue - 7th Street Line
Routes 70, 71
For route and schedule information
Call 202-637-7000
www.metroopensdoors.com
The service shown on this timetable will continue to operate into the off-street bus terminal at Silver Spring Station until a date during the summer of 2007, to be announced, when construction will begin on the new Silver Spring Transit Center. At that time bus service will be shifted onto local streets as shown on this map. The new transit center is scheduled to open in late 2009.
COLESVILLE RD
WAYNE AVE
SILVER SPRING STATION
GEORGIA AVE
MD
DC
BRIGHTWOOD
PARKVIEW
GEORGIA AVE-PETWORTH STATION
SHAW-HOWARD UNIV STATION
MT VERNON SQ/7th ST-CONVENTION CENTER STATION
ARCHIVES-NAVY MEM'L-PENN QUARTER STATION
GALLERY PL-CHINATOWN STATION
PENNSYLVANIA AVE
NW
ARCHIVES
CONSTITUTION AVE
SW
L'ENFANT PLAZA STATION
WATERFRONT-SEU STATION
BUZZARD POINT
Legend
Metrorail Station
Terminal Stands
Guaranteed Ride Home
When you take Metrobus or Metrorail to work, you are eligible to participate in the free Commuter Connection Guaranteed Ride Home Program.
The program will get you home in the event of a personal emergency or unscheduled overtime.
To register and to receive program details, call Commuter Connection at 1-800-745-RIDE.
WMATA ©2007

R.O.

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English-Español

ROUTE 79

MetroExtra

TRY THE NEW, FASTER METROBUS SERVICE

Get more service on Georgia Avenue.

- Service every 10-12 minutes.
- Weekdays 6:00 a.m. to 7:00 p.m.
- Limited stops. For more frequent stops, please use Metrobus 70 or 71.
- Same fare as a regular Metrobus.

Metro Extra Route 79 serves these stops along Georgia Avenue and 7th Street, NW:

Silver Spring Metro station
Shepherd Park
Walter Reed
Piney Branch
Brightwood
Kennedy Street
Decatur Street
Georgia Ave-Petworth Metro station
Columbia/Irving
Howard University
Florida Avenue
Shaw/Howard U Metro station
Convention Center
H Street
Gallery Pl-Chinatown Metro station
Archives-Navy Mem'l-Penn Quarter Metro station

Schedule 3-31-08

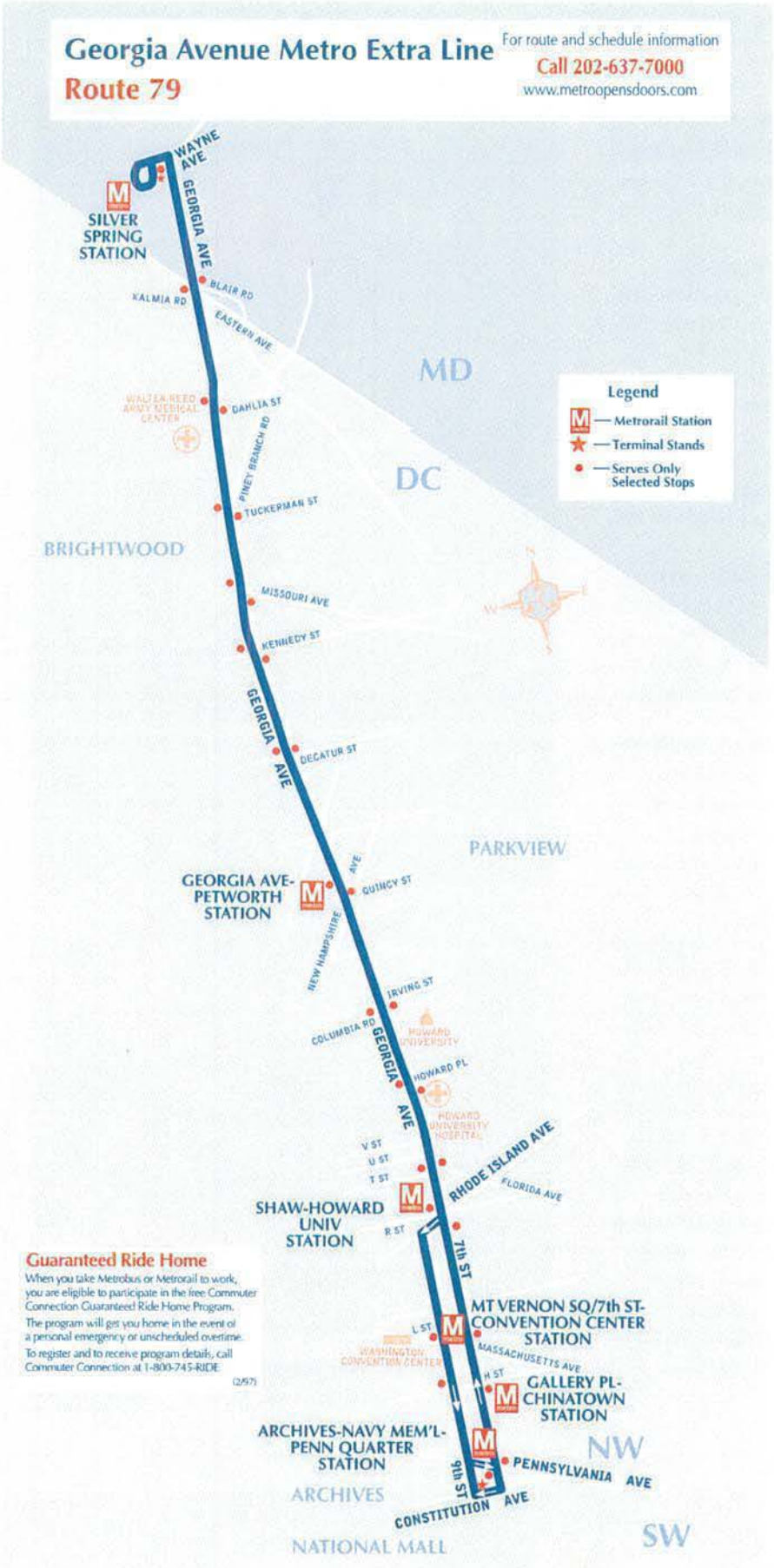
Washington Metropolitan Area Transit Authority

A District of Columbia, Maryland and Virginia Transit Partnership

R.9

Georgia Avenue Metro Extra Line
Route 79

For route and schedule information
Call 202-637-7000
www.metroopensdoors.com



Guaranteed Ride Home

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 For information regarding this map contact <R•A•D•S>.

B-10

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English-Español

metrobus

G8
Rhode Island Avenue Line

♿ All Metrobuses are fully accessible and are equipped with lifts or ramps for wheelchair accessibility
Todos los autobuses de Metro son accesibles a personas con impedimentos y están equipados con rampas o elevadores para sillas de ruedas

Serves these locations-
Brinda servicio a estas ubicaciones

Avondale
Woodridge
Brookland-CUA station
Edgewood
Rhode Island Ave. shopping center
Shaw-Howard Univ station
Convention Center
Metro Center station
Farragut West station
Farragut North station

Schedule 12-30-07

INFORMATION ANYTIME 202-637-7000 TTY 202-638-3780 ♿

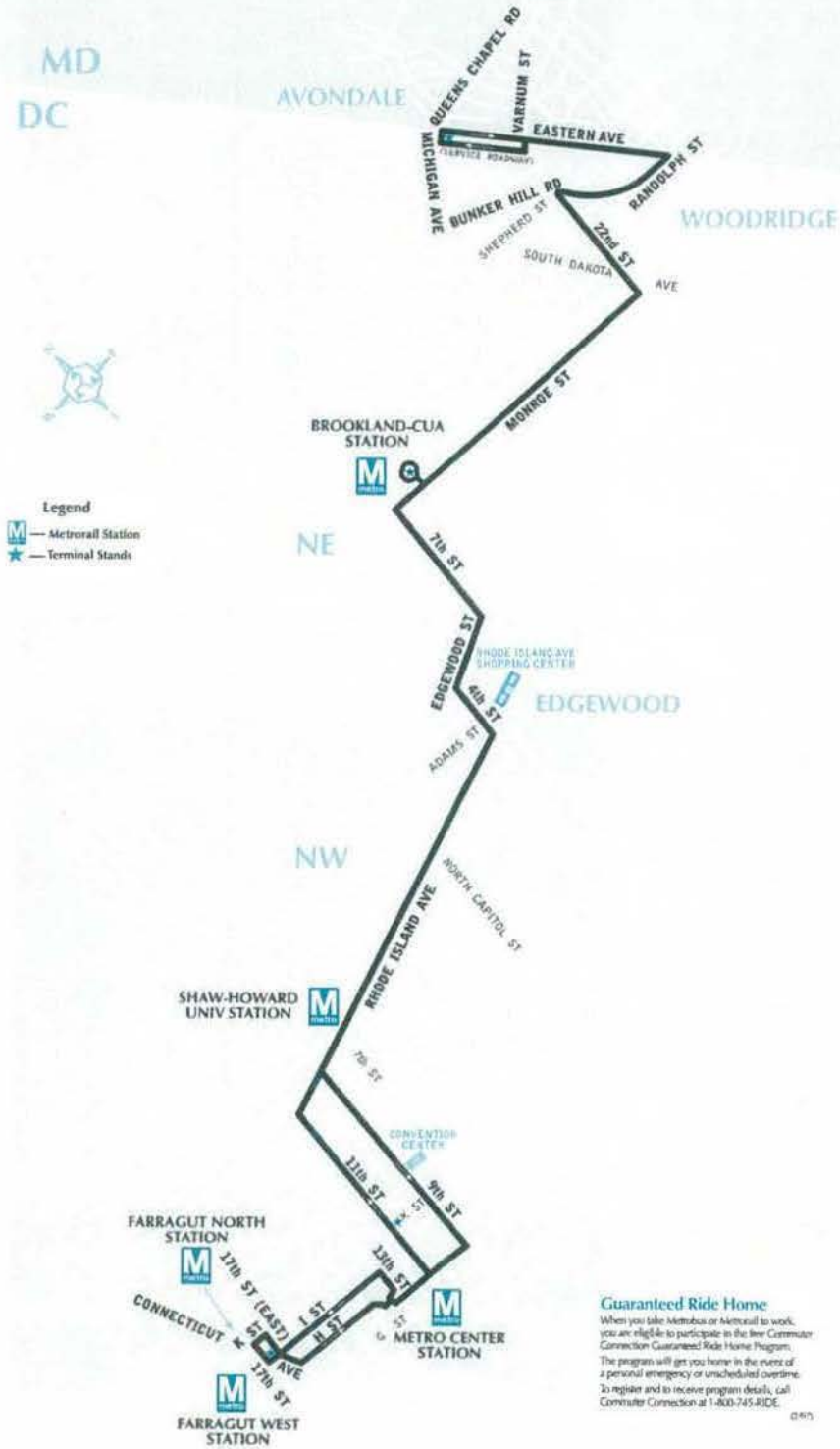
Metro opens doors
MetroOpensDoors.com

Washington Metropolitan Area Transit Authority

A District of Columbia, Maryland and Virginia Transit Partnership

Rhode Island Avenue Line
Route G8

For route and schedule information
Call 202-637-7000
www.metroopensdoors.com



Guaranteed Ride Home

When you take Metrobus or Metrorail to work, you are eligible to participate in the free Commuter Connection Guaranteed Ride Home Program.

The program will get you home in the event of a personal emergency or unscheduled overtime.

To register and to receive program details, call Commuter Connection at 1-800-745-RIDE.

R-17

MTA Maryland

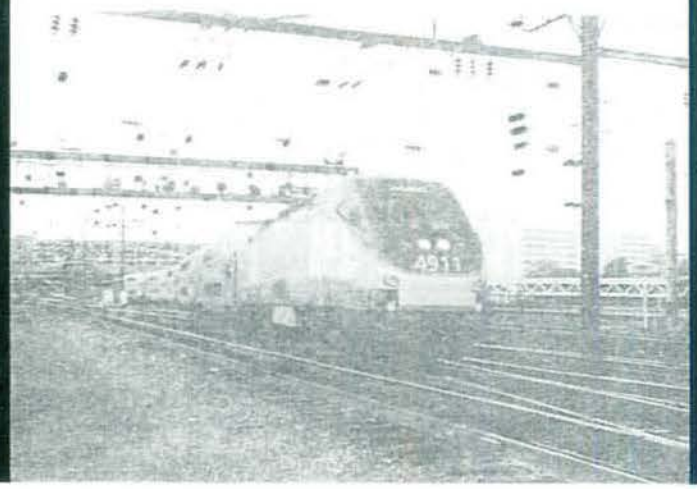
MARC

February 12, 2007

Penn Line	Camden Line
Washington to:	
Odenton	Laurel
BWI Marshall	Savage
Baltimore Penn Station	Dorsey
Perryville	Baltimore Camden Station

And Intermediate Points

www.mtamaryland.com
www.marctracker.com



MONDAY through FRIDAY only

Penn Line Northbound

TRAIN NUMBER		400 S	402 S	506	406	408 S	410	412 S	414 S	416 S	418	520 S	422	424 S	A148 Amtrak®	426 S/Q	428 Q	530 Q	432 S/Q	534 S/Q	436 Q	538 S/Q	440 S/Q	A188 Amtrak®	442 S/Q
		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM
WASHINGTON	DP	5:54	6:45	7:12	7:21	7:37	8:15	8:45	9:30	10:30	11:15	12:25	1:20	2:15	z3:05	3:34	4:15	4:24	4:46	5:20	5:34	6:05	6:40	z7:10	7:35
NEW CARROLLTON	DP	6:05	6:55	7:23		7:49	8:26	8:56	9:41	10:41	11:26	12:36	1:31	2:26	z3:16	3:45		4:35	4:58	S	5:45	6:16	6:51	z7:22	7:46
SEABROOK	DP	6:08				7:53	8:30		9:45	10:45	11:30	12:40	1:35	2:30	NO TRAVEL BETWEEN BALTIMORE AND WASHINGTON	3:49		4:39	5:02		5:50	6:21	6:56	NO TRAVEL BETWEEN BALTIMORE AND WASHINGTON	7:51
BOWIE STATE	DP	6:14				7:58	8:35		9:50	10:50	11:35	12:47	1:42	2:37		3:56		4:46	5:08		5:56	6:27	7:03		7:57
ODENTON	DP	6:19		7:35		8:03	8:41		9:56	10:56	11:41	12:54	1:49	2:42		4:03		4:53	5:18	S	6:02	6:33	7:10		8:04
BWI MARSHALL RAIL STATION	DP	6:26	7:10	7:42		8:11	8:50	9:11	10:03	11:03	11:48	1:01	1:56	2:49	z3:34	4:12	L4:40		5:27	L5:44	6:11	L6:42	7:18	z7:38	8:12
HALETHORPE	DP					d8:15	d8:54		10:07	11:07	11:52	1:06	2:01	2:54		L4:18	L4:46		5:34	L5:54	6:16	L6:47	7:23		8:17
WEST BALTIMORE	DP					d8:21	d9:00		10:14	11:14	11:59	1:13	2:08	3:01		L4:24	L4:52		5:42	L6:03	6:25	L6:54	7:30		8:23
BALTIMORE/PENN STATION	DP	6:45	7:25	8:00	7:53	8:37	9:12	9:30	10:27	11:27	12:12	1:22	2:17	3:12	z3:47	4:34	5:04	5:14	5:57	6:12	6:37	7:05	7:45	z7:55	8:35
MARTIN AIRPORT	DP			8:12								d1:34			MONTHLY/ WEEKLY TICKETS ONLY			L5:25		d6:22		L7:16		MONTHLY/ WEEKLY TICKETS ONLY	
EDGEWOOD	DP			d8:25								d1:48						L5:35		d6:34		L7:26			
ABERDEEN	DP			d8:33								d1:58			z4:11			d5:45		d6:49		L7:36		z8:17	
PERRYVILLE	AR			8:46								2:10						6:02		7:02		7:51			

Q – "Quiet Car℠"; No cell phones, electronic devices that make noise or loud conversations please.
"Quiet Car℠" is a registered service mark of Amtrak®

MONDAY through FRIDAY only

Camden Line Northbound

TRAIN NUMBER		840 S	842	844 S	Train/Bus	Train/Bus S	846 S/Q	848 S/Q	850 Q	852 S/Q	854 Q	856 S/Q
		AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM
WASHINGTON/UNION STATION	DP	6:42	7:07	8:05	11:15	12:25	4:13	4:39	5:18	5:51	6:40	7:35
RIVERDALE	DP	6:52	7:17		PENN LINE TRAIN TO ODENTON			4:49	5:28	S	6:50	f7:45
COLLEGE PARK	DP	6:55	7:20	8:16				4:52	5:31	S	6:53	f7:48
GREENBELT	DP	6:59	7:24	8:20				4:56	5:35	S	6:57	7:52
MUIRKIRK	DP	7:05	7:30	8:26			4:31	5:02	5:41	6:09	7:03	7:58
LAUREL	DP	7:12	7:37	8:33		c1:12	4:38	5:09	5:48	6:16	7:10	8:05
LAUREL RACETRACK	DP				c12:10	c1:15						
SAVAGE	DP	7:18	7:43	8:39		c1:25	4:45	5:16	5:55	6:23	7:17	8:12
JESSUP	DP				WILL NOT OPERATE ON TUESDAYS				5:59	S		
DORSEY	DP	7:24	7:49	8:45		c1:40	4:52	5:23	6:03	6:30	7:24	8:19
ST. DENIS	DP							d5:30	d6:10		d7:31	
BALTIMORE/CAMDEN STATION	AR	7:53	8:18	9:16			5:22	5:55	6:35	7:01	7:55	8:50

Appendix C

Existing Conditions Analyses

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0			4.0	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					0.99			0.97			1.00	
Flpb, ped/bikes					0.99			1.00			0.99	
Frt					0.99			0.97			0.99	
Flt Protected					0.99			0.98			1.00	
Satd. Flow (prot)					2905			2924			3140	
Flt Permitted					0.99			0.80			0.94	
Satd. Flow (perm)					2905			2411			2968	
Volume (vph)	0	0	0	80	334	44	7	5	3	43	1069	41
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	87	363	48	8	5	3	47	1162	45
RTOR Reduction (vph)	0	0	0	0	8	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	0	0	0	490	0	0	15	0	0	1252	0
Confl. Peds. (#/hr)	54		54	54		54	69		135	135		69
Parking (#/hr)				2	2							
Turn Type				Perm			Perm			Perm		
Protected Phases					2			4			8	
Permitted Phases				2			4			8		
Actuated Green, G (s)					39.0			49.0			49.0	
Effective Green, g (s)					41.0			51.0			51.0	
Actuated g/C Ratio					0.41			0.51			0.51	
Clearance Time (s)					6.0			6.0			6.0	
Lane Grp Cap (vph)					1191			1230			1514	
v/s Ratio Prot												
v/s Ratio Perm					0.17			0.01			c0.42	
v/c Ratio					0.41			0.01			0.83	
Uniform Delay, d1					20.9			12.1			20.8	
Progression Factor					1.00			1.02			1.86	
Incremental Delay, d2					1.1			0.0			3.3	
Delay (s)					22.0			12.3			41.9	
Level of Service					C			B			D	
Approach Delay (s)		0.0			22.0			12.3			41.9	
Approach LOS		A			C			B			D	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↔						↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						1.00	
Frpb, ped/bikes				1.00	1.00						0.98	
Flpb, ped/bikes				0.92	1.00						1.00	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1335	3051						1388	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1335	3051						1388	
Volume (vph)	0	0	0	81	302	0	0	0	0	0	65	36
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	88	328	0	0	0	0	0	71	39
RTOR Reduction (vph)	0	0	0	48	0	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	40	328	0	0	0	0	0	90	0
Confl. Peds. (#/hr)	103		121	121		103	84		92	92		84
Parking (#/hr)											2	2
Turn Type				Perm								
Protected Phases					2						8	
Permitted Phases				2								
Actuated Green, G (s)				45.0	45.0						45.0	
Effective Green, g (s)				46.0	46.0						46.0	
Actuated g/C Ratio				0.46	0.46						0.46	
Clearance Time (s)				5.0	5.0						5.0	
Lane Grp Cap (vph)				614	1403						638	
v/s Ratio Prot					c0.11						c0.08	
v/s Ratio Perm				0.07								
v/c Ratio				0.07	0.23						0.14	
Uniform Delay, d1				15.0	16.3						15.6	
Progression Factor				0.09	0.53						1.64	
Incremental Delay, d2				0.2	0.4						0.5	
Delay (s)				1.6	9.1						26.0	
Level of Service				A	A						C	
Approach Delay (s)		0.0			7.5			0.0			26.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

C-1

2008 Existing Conditions
3: Mass Ave. & 9th St

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↓↑↕						↓↑↑↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0						4.0	
Lane Util. Factor		0.95	1.00		0.95						0.91	
Frpb, ped/bikes		1.00	0.93		1.00						0.99	
Flpb, ped/bikes		1.00	1.00		1.00						1.00	
Frt		1.00	0.85		1.00						1.00	
Flt Protected		1.00	1.00		1.00						1.00	
Satd. Flow (prot)		3185	1329		3159						4513	
Flt Permitted		1.00	1.00		0.95						1.00	
Satd. Flow (perm)		3185	1329		3001						4513	
Volume (vph)	0	814	586	8	1345	34	0	0	0	20	1071	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	885	637	9	1462	37	0	0	0	22	1164	26
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	885	637	0	1506	0	0	0	0	0	1210	0
Confl. Peds. (#/hr)	359		140	140		359	205		134	134		205
Turn Type			custom	custom						Perm		
Protected Phases		5 6	5		2 5						8	
Permitted Phases			6	5	5					8		
Actuated Green, G (s)		69.0	67.0		69.0						21.0	
Effective Green, g (s)		69.0	65.0		69.0						23.0	
Actuated g/C Ratio		0.69	0.65		0.69						0.23	
Clearance Time (s)			4.0								6.0	
Lane Grp Cap (vph)		2198	917		2071						1038	
v/s Ratio Prot		0.28	0.19									
v/s Ratio Perm			0.29		c0.50						0.27	
v/c Ratio		0.40	0.69		0.73						1.17	
Uniform Delay, d1		6.7	11.2		9.6						38.5	
Progression Factor		0.35	0.93		1.00						0.49	
Incremental Delay, d2		0.5	3.6		2.3						80.9	
Delay (s)		2.8	14.0		11.9						99.7	
Level of Service		A	B		B						F	
Approach Delay (s)		7.5			11.9			0.0			99.7	
Approach LOS		A			B			A			F	

Intersection Summary				
HCM Average Control Delay	35.4	HCM Level of Service		D
HCM Volume to Capacity ratio	0.84			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization	138.9%	ICU Level of Service		H
Analysis Period (min)	15			

c Critical Lane Group

2008 Existing Conditions
4: Mass Ave. & 10th St

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↕			↓↑↑						↓↑↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		0.91			0.95						0.95	
Frpb, ped/bikes		1.00			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.99			1.00						1.00	
Flt Protected		1.00			0.99						0.99	
Satd. Flow (prot)		4537			3155						3096	
Flt Permitted		1.00			0.50						0.99	
Satd. Flow (perm)		4537			1583						3096	
Volume (vph)	0	1379	70	247	1096	0	0	0	0	29	112	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1499	76	268	1191	0	0	0	0	32	122	5
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	1570	0	0	1459	0	0	0	0	0	157	0
Confl. Peds. (#/hr)	116		41	41		116	118		48	48		118
Turn Type				Perm						Perm		
Protected Phases		6			2						8	
Permitted Phases				2						8		
Actuated Green, G (s)		60.0			60.0						30.0	
Effective Green, g (s)		61.0			61.0						31.0	
Actuated g/C Ratio		0.61			0.61						0.31	
Clearance Time (s)		5.0			5.0						5.0	
Lane Grp Cap (vph)		2768			966						960	
v/s Ratio Prot		0.35										
v/s Ratio Perm					c0.92						0.05	
v/c Ratio		0.57			2.29dl						0.16	
Uniform Delay, d1		11.6			19.5						25.1	
Progression Factor		1.00			1.15						0.58	
Incremental Delay, d2		0.8			233.2						0.4	
Delay (s)		12.5			255.7						15.0	
Level of Service		B			F						B	
Approach Delay (s)		12.5			255.7			0.0			15.0	
Approach LOS		B			F			A			B	

Intersection Summary				
HCM Average Control Delay	123.8	HCM Level of Service		F
HCM Volume to Capacity ratio	1.06			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization	135.0%	ICU Level of Service		H
Analysis Period (min)	15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	1	1400	1363	6	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1522	1482	7	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		350	274			
pX, platoon unblocked						
vC, conflicting volume	1488				1994	744
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1488				1994	744
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	448				52	357

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	305	609	609	988	500	0
Volume Left	1	0	0	0	0	0
Volume Right	0	0	0	0	7	0
cSH	448	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.36	0.36	0.58	0.29	0.00
Queue Length (ft)	0	0	0	0	0	0
Control Delay (s)	0.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					A
Approach Delay (s)	0.0			0.0		0.0
Approach LOS						A

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		45.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	7	1401	1342	21	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1523	1459	23	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		236	388			
pX, platoon unblocked						
vC, conflicting volume	1482				1993	741
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1482				1993	741
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	450				52	359

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	312	609	609	972	509	1
Volume Left	8	0	0	0	0	0
Volume Right	0	0	0	0	23	1
cSH	450	1700	1700	1700	1700	359
Volume to Capacity	0.02	0.36	0.36	0.57	0.30	0.00
Queue Length (ft)	1	0	0	0	0	0
Control Delay (s)	0.6	0.0	0.0	0.0	0.0	15.1
Lane LOS	A					C
Approach Delay (s)	0.1			0.0		15.1
Approach LOS						C

Intersection Summary				
Average Delay		0.1		
Intersection Capacity Utilization		52.0%	ICU Level of Service	A
Analysis Period (min)		15		

2008 Existing Conditions
7: L St & PMI Lot

AM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	16	366	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	17	398	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	280			305		
pX, platoon unblocked						
vC, conflicting volume			0		234	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		234	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1622		726	1084

Direction, Lane #	WB 1	WB 2	NB 1
Volume Total	150	265	3
Volume Left	17	0	3
Volume Right	0	0	0
cSH	1622	1700	726
Volume to Capacity	0.01	0.16	0.00
Queue Length (ft)	1	0	0
Control Delay (s)	0.9	0.0	10.0
Lane LOS	A		A
Approach Delay (s)	0.3		10.0
Approach LOS			A

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	21.8%	ICU Level of Service		A
Analysis Period (min)	15			

2008 Existing Conditions
8: Private Lot & 9th St

AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	19	15	1115	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	21	16	1212	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				233	220	
pX, platoon unblocked						
vC, conflicting volume	1280	624	1249			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1280	624	1249			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	96			
cM capacity (veh/h)	152	428	553			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	26	11	808	441
Volume Left	0	21	0	0	0
Volume Right	0	0	0	0	37
cSH	1700	553	1700	1700	1700
Volume to Capacity	0.00	0.04	0.01	0.48	0.26
Queue Length (ft)	0	3	0	0	0
Control Delay (s)	0.0	9.4	0.0	0.0	0.0
Lane LOS	A	A			
Approach Delay (s)	0.0	6.6		0.0	
Approach LOS	A				

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	38.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0		4.0		4.0			4.0	
Lane Util. Factor		1.00		1.00		1.00		0.95			0.95	
Frt		0.92		1.00		0.85		0.96			1.00	
Flt Protected		0.99		0.95		1.00		1.00			1.00	
Satd. Flow (prot)		1713		1770		1583		3409			3532	
Flt Permitted		0.99		0.69		1.00		1.00			0.94	
Satd. Flow (perm)		1713		1278		1583		3409			3325	
Volume (vph)	13	39	65	45	0	9	0	37	12	46	1043	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	42	71	49	0	10	0	40	13	50	1134	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	113	0	49	0	10	0	45	0	0	1184	0
Turn Type	Perm			custom		Free				Perm		
Protected Phases		6						4			8	
Permitted Phases	6			2		Free				8		
Actuated Green, G (s)		50.0		50.0		100.0		41.0			41.0	
Effective Green, g (s)		50.0		50.0		100.0		42.0			42.0	
Actuated g/C Ratio		0.50		0.50		1.00		0.42			0.42	
Clearance Time (s)		4.0		4.0				5.0			5.0	
Lane Grp Cap (vph)		857		639		1583		1432			1397	
v/s Ratio Prot								0.02				
v/s Ratio Perm		0.07		0.04		0.01					c0.36	
v/c Ratio		0.13		0.08		0.01		0.03			0.85	
Uniform Delay, d1		13.4		13.0		0.0		17.0			26.1	
Progression Factor		0.57		1.00		1.00		0.56			1.00	
Incremental Delay, d2		0.3		0.2		0.0		0.0			6.5	
Delay (s)		7.9		13.2		0.0		9.7			32.7	
Level of Service		A		B		A		A			C	
Approach Delay (s)		7.9			11.0			9.7			32.7	
Approach LOS		A			B			A			C	

Intersection Summary				
HCM Average Control Delay	28.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	53.6%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						1.00	
Frt		0.96			1.00						0.99	
Flt Protected		1.00			0.98						0.99	
Satd. Flow (prot)		1796			1828						1818	
Flt Permitted		1.00			0.95						0.99	
Satd. Flow (perm)		1796			1764						1818	
Volume (vph)	0	98	36	3	5	0	0	0	0	19	62	9
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	107	39	3	5	0	0	0	0	21	67	10
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	133	0	0	8	0	0	0	0	0	94	0
Turn Type				Perm						Perm		
Protected Phases		6			2						8	
Permitted Phases				2						8		
Actuated Green, G (s)		45.0			45.0						44.0	
Effective Green, g (s)		47.0			47.0						45.0	
Actuated g/C Ratio		0.47			0.47						0.45	
Clearance Time (s)		6.0			6.0						5.0	
Lane Grp Cap (vph)		844			829						818	
v/s Ratio Prot		c0.08										
v/s Ratio Perm					0.00						0.05	
v/c Ratio		0.16			0.01						0.12	
Uniform Delay, d1		15.2			14.1						16.0	
Progression Factor		1.00			1.00						1.00	
Incremental Delay, d2		0.4			0.0						0.3	
Delay (s)		15.6			14.1						16.2	
Level of Service		B			B						B	
Approach Delay (s)		15.6			14.1			0.0			16.2	
Approach LOS		B			B			A			B	

Intersection Summary				
HCM Average Control Delay	15.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.15			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	18.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

55

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0			4.0			4.0	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					0.99			0.98			1.00	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.97			0.96			0.99	
Flt Protected					0.99			1.00			1.00	
Satd. Flow (prot)					2877			2993			3143	
Flt Permitted					0.99			0.88			0.93	
Satd. Flow (perm)					2877			2652			2934	
Volume (vph)	0	0	0	47	204	57	10	89	36	45	865	45
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	51	222	62	11	97	39	49	940	49
RTOR Reduction (vph)	0	0	0	0	20	0	0	19	0	0	3	0
Lane Group Flow (vph)	0	0	0	0	315	0	0	128	0	0	1035	0
Confl. Peds. (#/hr)	25		31	31		25	60		46	46		60
Parking (#/hr)				2	2							
Turn Type				Perm			Perm			Perm		
Protected Phases					2			4			8	
Permitted Phases				2			4			8		
Actuated Green, G (s)					38.0			50.0			50.0	
Effective Green, g (s)					40.0			52.0			52.0	
Actuated g/C Ratio					0.40			0.52			0.52	
Clearance Time (s)					6.0			6.0			6.0	
Lane Grp Cap (vph)					1151			1379			1526	
v/s Ratio Prot												
v/s Ratio Perm					0.12			0.06			c0.35	
v/c Ratio					0.27			0.09			0.68	
Uniform Delay, d1					20.2			12.1			17.8	
Progression Factor					1.00			1.27			0.40	
Incremental Delay, d2					0.6			0.1			2.0	
Delay (s)					20.8			15.5			9.1	
Level of Service					C			B			A	
Approach Delay (s)		0.0			20.8			15.5			9.1	
Approach LOS		A			C			B			A	

Intersection Summary				
HCM Average Control Delay	12.3	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.51			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	104.0%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↔						↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						1.00	
Frpb, ped/bikes				1.00	1.00						0.97	
Flpb, ped/bikes				0.96	1.00						1.00	
Frt				1.00	1.00						0.94	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1386	3051						1371	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1386	3051						1371	
Volume (vph)	0	0	0	51	206	0	0	0	0	0	53	37
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	55	224	0	0	0	0	0	58	40
RTOR Reduction (vph)	0	0	0	30	0	0	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	25	224	0	0	0	0	0	76	0
Confl. Peds. (#/hr)	71		67	67		71	87		37	37		87
Parking (#/hr)											2	2
Turn Type				Perm								
Protected Phases					2						8	
Permitted Phases				2								
Actuated Green, G (s)				45.0	45.0						45.0	
Effective Green, g (s)				46.0	46.0						46.0	
Actuated g/C Ratio				0.46	0.46						0.46	
Clearance Time (s)				5.0	5.0						5.0	
Lane Grp Cap (vph)				638	1403						631	
v/s Ratio Prot					c0.07						c0.07	
v/s Ratio Perm				0.04								
v/c Ratio				0.04	0.16						0.12	
Uniform Delay, d1				14.9	15.7						15.4	
Progression Factor				0.19	0.62						1.63	
Incremental Delay, d2				0.1	0.2						0.4	
Delay (s)				2.9	10.0						25.6	
Level of Service				A	B						C	
Approach Delay (s)		0.0			8.6			0.0			25.6	
Approach LOS		A			A			A			C	

Intersection Summary				
HCM Average Control Delay	13.1	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.16			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↰↑↑						↰↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0						4.0	
Lane Util. Factor		0.95	1.00		0.95						0.91	
Frpb, ped/bikes		1.00	0.82		0.96						0.98	
Flpb, ped/bikes		1.00	1.00		1.00						0.99	
Frt		1.00	0.85		0.98						0.99	
Flt Protected		1.00	1.00		1.00						1.00	
Satd. Flow (prot)		3185	1171		3006						4436	
Flt Permitted		1.00	1.00		1.00						1.00	
Satd. Flow (perm)		3185	1171		3006						4436	
Volume (vph)	0	1508	644	0	773	109	0	0	0	40	849	40
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1639	700	0	840	118	0	0	0	43	923	43
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	1639	700	0	947	0	0	0	0	0	1005	0
Confl. Peds. (#/hr)	744			433		744	512		127	127		512
Turn Type			custom	custom						Perm		
Protected Phases		5 6	5		2 5						8	
Permitted Phases			6	5	5					8		
Actuated Green, G (s)		66.0	64.0		66.0						24.0	
Effective Green, g (s)		66.0	62.0		66.0						26.0	
Actuated g/C Ratio		0.66	0.62		0.66						0.26	
Clearance Time (s)			4.0								6.0	
Lane Grp Cap (vph)		2102	773		1984						1153	
v/s Ratio Prot		0.51	c0.24		0.32							
v/s Ratio Perm			0.35								0.23	
v/c Ratio		0.78	0.91		0.48						0.87	
Uniform Delay, d1		11.9	16.5		8.4						35.4	
Progression Factor		0.42	0.68		1.00						0.47	
Incremental Delay, d2		1.3	7.9		0.8						7.1	
Delay (s)		6.2	19.1		9.3						23.8	
Level of Service		A	B		A						C	
Approach Delay (s)		10.1			9.3			0.0			23.8	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	139.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↱			↰↑↑						↰↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		0.91			0.95						0.95	
Frpb, ped/bikes		1.00			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.97	
Frt		0.99			1.00						0.99	
Flt Protected		1.00			0.99						0.98	
Satd. Flow (prot)		4534			3167						3019	
Flt Permitted		1.00			0.51						0.98	
Satd. Flow (perm)		4534			1623						3019	
Volume (vph)	0	2108	107	95	744	0	0	0	0	35	64	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2291	116	103	809	0	0	0	0	38	70	5
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	2402	0	0	912	0	0	0	0	0	110	0
Confl. Peds. (#/hr)	96		64	64		96	93		84	84		93
Turn Type				Perm						Perm		
Protected Phases		6			2						8	
Permitted Phases				2						8		
Actuated Green, G (s)		57.0			57.0						33.0	
Effective Green, g (s)		58.0			58.0						34.0	
Actuated g/C Ratio		0.58			0.58						0.34	
Clearance Time (s)		5.0			5.0						5.0	
Lane Grp Cap (vph)		2630			941						1026	
v/s Ratio Prot		0.53										
v/s Ratio Perm					c0.56						0.04	
v/c Ratio		0.91			1.54dl						0.11	
Uniform Delay, d1		18.8			20.1						22.6	
Progression Factor		1.00			1.12						0.63	
Incremental Delay, d2		6.2			21.2						0.2	
Delay (s)		25.0			43.7						14.4	
Level of Service		C			D						B	
Approach Delay (s)		25.0			43.7			0.0			14.4	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	133.1%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	2152	812	1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2339	883	1	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		350	274			
pX, platoon unblocked						
vC, conflicting volume	884				1667	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	884				1667	442
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	761				87	563

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	470	936	936	588	295	1
Volume Left	2	0	0	0	0	0
Volume Right	0	0	0	0	1	1
cSH	761	1700	1700	1700	1700	563
Volume to Capacity	0.00	0.55	0.55	0.35	0.17	0.00
Queue Length (ft)	0	0	0	0	0	0
Control Delay (s)	0.1	0.0	0.0	0.0	0.0	11.4
Lane LOS	A					B
Approach Delay (s)	0.0			0.0		11.4
Approach LOS						B

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	57.7%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	2143	813	0	11	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2329	884	0	12	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		236	388			
pX, platoon unblocked						
vC, conflicting volume	884				1660	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	884				1660	442
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				86	95
cM capacity (veh/h)	761				88	563

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	466	932	932	589	295	40
Volume Left	0	0	0	0	0	12
Volume Right	0	0	0	0	0	28
cSH	761	1700	1700	1700	1700	217
Volume to Capacity	0.00	0.55	0.55	0.35	0.17	0.19
Queue Length (ft)	0	0	0	0	0	17
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	25.4
Lane LOS						D
Approach Delay (s)	0.0			0.0		25.4
Approach LOS						D

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	56.0%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	2	249	6	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	2	271	7	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	280			305		
pX, platoon unblocked						
vC, conflicting volume			0		140	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		140	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1622		838	1084

Direction, Lane #	WB 1	WB 2	NB 1
Volume Total	92	180	7
Volume Left	2	0	7
Volume Right	0	0	0
cSH	1622	1700	838
Volume to Capacity	0.00	0.11	0.01
Queue Length (ft)	0	0	1
Control Delay (s)	0.2	0.0	9.3
Lane LOS	A		A
Approach Delay (s)	0.1		9.3
Approach LOS			A

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		17.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	26	17	0	109	912	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	18	0	118	991	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				233	220	
pX, platoon unblocked						
vC, conflicting volume	1051	496	991			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1051	496	991			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	96	100			
cM capacity (veh/h)	222	520	693			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	47	39	79	661	330
Volume Left	28	0	0	0	0
Volume Right	18	0	0	0	0
cSH	287	693	1700	1700	1700
Volume to Capacity	0.16	0.00	0.05	0.39	0.19
Queue Length (ft)	14	0	0	0	0
Control Delay (s)	19.9	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	19.9	0.0		0.0	
Approach LOS	C				

Intersection Summary				
Average Delay		0.8		
Intersection Capacity Utilization		38.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0		4.0		4.0			4.0	
Lane Util. Factor		1.00		1.00		1.00		0.95			0.95	
Frt		0.95		1.00		0.85		0.97			1.00	
Flt Protected		0.99		0.95		1.00		1.00			1.00	
Satd. Flow (prot)		1764		1770		1583		3429			3528	
Flt Permitted		0.99		0.59		1.00		1.00			0.92	
Satd. Flow (perm)		1764		1099		1583		3429			3263	
Volume (vph)	21	99	65	39	0	32	0	116	30	55	851	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	108	71	42	0	35	0	126	33	60	925	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	182	0	42	0	35	0	143	0	0	985	0
Turn Type	Perm			custom		Free				Perm		
Protected Phases		6						4			8	
Permitted Phases	6			2		Free				8		
Actuated Green, G (s)		41.0		41.0		100.0		50.0			50.0	
Effective Green, g (s)		42.0		42.0		100.0		50.0			50.0	
Actuated g/C Ratio		0.42		0.42		1.00		0.50			0.50	
Clearance Time (s)		5.0		5.0				4.0			4.0	
Lane Grp Cap (vph)		741		462		1583		1715			1632	
v/s Ratio Prot								0.05				
v/s Ratio Perm		0.11		0.04		0.02					c0.30	
v/c Ratio		0.25		0.09		0.02		0.08			0.60	
Uniform Delay, d1		18.8		17.5		0.0		13.0			17.9	
Progression Factor		1.90		1.00		1.00		0.73			1.00	
Incremental Delay, d2		0.8		0.4		0.0		0.1			1.7	
Delay (s)		36.4		17.9		0.0		9.6			19.6	
Level of Service		D		B		A		A			B	
Approach Delay (s)		36.4			9.8			9.6			19.6	
Approach LOS		D			A			A			B	

Intersection Summary				
HCM Average Control Delay	20.3	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	56.3%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		1.00									1.00	
Frt		0.98									0.98	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		1827									1803	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		1827									1803	
Volume (vph)	0	195	32	0	0	0	0	0	0	28	58	14
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	212	35	0	0	0	0	0	0	30	63	15
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	241	0	0	0	0	0	0	0	0	102	0
Turn Type				Perm						Perm		
Protected Phases		6			2						8	
Permitted Phases				2						8		
Actuated Green, G (s)		45.0									44.0	
Effective Green, g (s)		47.0									45.0	
Actuated g/C Ratio		0.47									0.45	
Clearance Time (s)		6.0									5.0	
Lane Grp Cap (vph)		859									811	
v/s Ratio Prot		c0.14										
v/s Ratio Perm											0.06	
v/c Ratio		0.28									0.13	
Uniform Delay, d1		16.2									16.0	
Progression Factor		1.00									1.00	
Incremental Delay, d2		0.8									0.3	
Delay (s)		17.0									16.4	
Level of Service		B									B	
Approach Delay (s)		17.0			0.0				0.0		16.4	
Approach LOS		B			A				A		B	

Intersection Summary				
HCM Average Control Delay	16.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.21			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	24.3%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

C-10