

Alternative 3A

- Keep existing lane configurations from Otis Place to Howard Place
- Keep parking as it is currently
- On southbound Georgia Avenue from Howard Place to Barry Place, make the far right lane a dedicated right-turn lane
- On southbound Georgia Avenue from Barry Place to Bryant Street, make the far left-lane a dedicated left-turn lane
- On northbound Georgia Avenue from W Street to Bryant Street, make the far right-lane a dedicated right-turn lane
- Keep the dedicated left-turn lane on southbound Georgia Avenue at Florida Avenue
- Remove parking from Howard Place to Barry Place in the southbound direction only
- Remove parking from Barry Place to Bryant Street on both sides
- Remove parking from V Street to Florida Avenue on both sides
- Sherman Avenue remains as-is

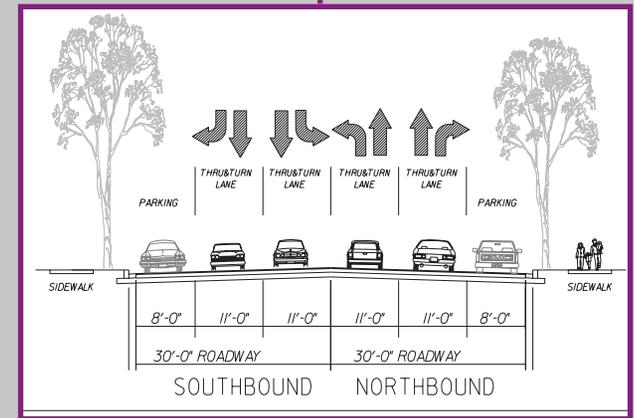
Alternative 3B

Same as Alternative 3A, but reconfigure Sherman Avenue with two travel lanes, widened sidewalks, median, and extended Bryant and W Streets.

Alternative 3C – Restrict Left Turns

Same as Alternative 3A, except:

- Restrict left turns from southbound Georgia Avenue to Bryant Street
- Restrict left turns from southbound Georgia Avenue to Florida Avenue – route left turns to T Street to access Florida Avenue
- Restrict left turns from northbound Georgia Avenue to V Street
- Remove parking from southbound Georgia Avenue from Florida Avenue to T Street
- Make far left-lane from Florida Avenue to T Street a dedicated left-turn lane
- Use reconfigured Sherman Avenue with two travel lanes, widened sidewalks, median, and extended Bryant and W Streets



Alternative 3D – Loyal to Parking

Same as Alternative 3C, except:

- On southbound Georgia Avenue from Howard Place to Barry Place, make far right lane a dedicated right-turn lane
- On northbound Georgia Avenue from W Street to Bryant Street, make far right lane a dedicated right-turn lane
- Place parking on both sides of Georgia Avenue along the corridor

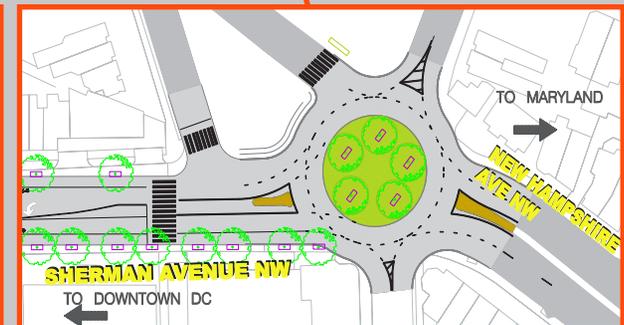
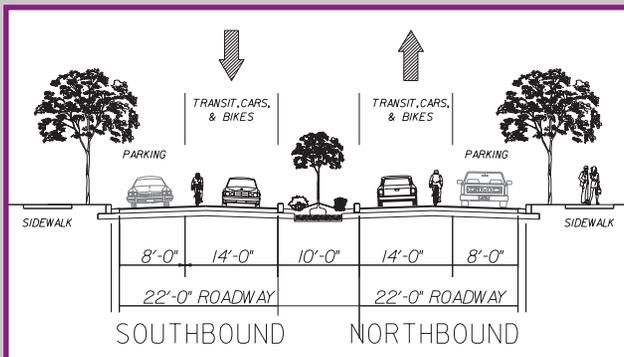
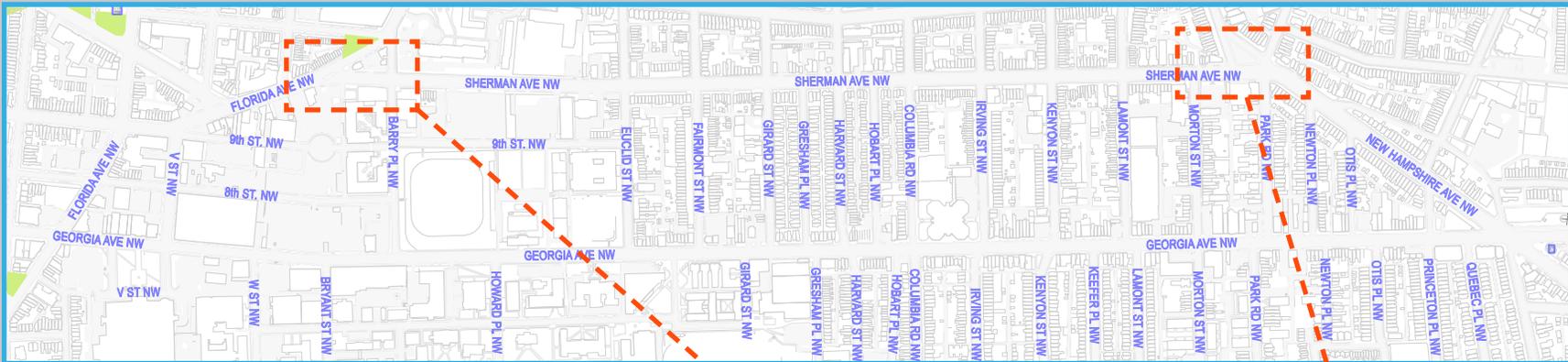
Transportation Alternatives

Sherman Avenue - B, C, and D Alternatives

In the “A” versions of all three alternatives, Sherman Avenue remains unchanged from current conditions. In all other versions (1B, 2B, & 3B/C/D), the following changes are applied to the configuration of Sherman Avenue:

- Convert Sherman Avenue’s intersections with New Hampshire Avenue/Park Road and with Barry Place to roundabouts
- Convert Sherman Avenue from Barry Place to Morton Street to a configuration of one through lane in each direction with a center median ten feet in width. The typical lane width on Sherman Avenue would be 14 feet.

- Employ streetside parking along the length of Sherman Avenue
- Employ bicycle share-the-lane arrows (“sharrows”) in the through lanes throughout Sherman Avenue.
- Provide left-hand turning lanes for northbound traffic on Sherman Avenue at Fairmont Street, Girard Street, Columbia Road, Kenyon Street, and Lamont Street.
- Provide left-hand turning lanes for southbound traffic on Sherman Avenue at Morton Street, Lamont Street, Irving Street, Harvard Street, Girard Street, Euclid Street, and Barry Place.
- Extend Bryant and W Streets to Sherman Avenue (separate project)



The three transportation alternatives were analyzed and screened to determine the preferred alternative.

For all alternatives, lanes widths would be a minimum of 11 feet, and bus lanes would be a minimum of 13 feet wide. High visibility crosswalks will be placed at intersections with high pedestrian volumes, with adjusted pedestrian crossing times to accommodate the volumes. The traffic lights would be optimized for progressive traffic movement through the corridor.

Transportation Operations

The alternatives were analyzed from a transportation operations perspective. Each alternative was analyzed using the traffic software program Synchro 7. The following are the results of the analysis. Full details are provided in Appendix 1.

The year 2008 was used for future traffic volumes, which is the year construction of the improvements, would occur. The existing 2007 midday and afternoon PM weekday turning movement volumes were increased by one percent per year to obtain 2008 volumes. Volumes on Georgia and Sherman Avenues, and most of the side streets between them, were balanced for the Synchro analysis. The percentage of heavy vehicles in the study area (five percent on Sherman Avenue and eight percent on Georgia Avenue) remained the same for 2008. The bicycle and the pedestrian volumes also remained the same for purposes of the analysis. All signal timings and offsets of the signalized intersections along Georgia Avenue and Sherman Avenue were optimized for progression and minimal intersection delays using Synchro 7.



Figure J-4: Streetscape in Middle Portion of Lower Georgia Avenue

Transportation Alternatives

Level of Service (LOS)	Intersection Control Type	
	Unsignalized	Signalized
A	10 or less	10 or less
B	10-15	10-20
C	15-25	25-35
D	25-35	35-55
E	35-50	55-80
F	more than 50	more than 80

Table J-1: Control delays in seconds associated with various levels of service

Vehicles

Level of service (LOS) is a measure of the average delay experienced by each vehicle passing through an intersection. It can be measured for vehicles making each directional turning movement, using each approach leg, or as a composite average value for all vehicles using the intersection. It is reported with a letter grade designation ranging from A to F. LOS “A” represents insignificant delay (less than 10 seconds per vehicle) while LOS “F” represents significant delay. LOS D is typically considered an acceptable level of service for an urban area. The level of service is determined by the computed control delay. Please see the table J-1 for specifics of LOS designation.

For Alternatives 1A and 1B, the analysis found that all key intersections would operate with acceptable delays during both the mid-day and afternoon peak hours, except Georgia Avenue at Irving Street. At this intersection, traffic would back up for at least 500 feet on Georgia Avenue and traffic delays would be high.

For Alternatives 2A and 2B, Georgia Avenue between New Hampshire Avenue and Barry Place would operate with acceptable delays and LOS during both the mid-day and afternoon peak hours. In the Howard Town Center area where there would be a dedicated transit lane in each direction, the intersections would operate at acceptable LOS due to a retiming of the traffic signals with optimum cycle lengths, phasings, and offsets for this section of Georgia Avenue.

For Alternatives 3A and 3B, all intersections on Georgia Avenue and Sherman Avenue would operate with LOS D or better during both the mid-day and afternoon peak hours. Dedicated turn lanes on Georgia Avenue at Bryant Street would decrease average delay when compared to Alternatives 1 and 2. However, the changes in lane configurations would not significantly decrease traffic delays at Georgia Avenue at Barry Place and Howard Place when compared to the other alternatives.

For Alternatives 3C and 3D, the left-turn restrictions at Bryant Street and Florida Avenue would decrease delays at the Georgia Avenue and Florida Avenue intersection and the Georgia Avenue and Bryant Street intersection. In addition, there would be no considerable increase in delays at the intersections of Georgia Avenue and Howard Street and Georgia Avenue and T Street due to the re-routing of left-turning vehicles. However, the delay at Georgia Avenue and Barry Place would increase in the afternoon.

For the reconfigured Sherman Avenue, where one travel lane in each direction would be removed, all intersections along the corridor would operate at LOS D or better.

Table J-2: 2008 Mid-day Peak Hour LOS and Delays for Georgia Avenue

Intersection		Alternative 1B		Alternative 2B		Alternative 3B		Alternative 3C		Alternative 3D	
		Delay	LOS								
Georgia Avenue NW	New Hampshire NW	10.3	B	9.9	A	10	A	10	A	13.6	B
Georgia Avenue NW	Park Road NW	18.9	B	10.9	B	11.3	B	11.3	B	13.3	B
Georgia Avenue NW	Irving Street NW	456.1	F	6.9	A	10	B	10	A	7.4	A
Georgia Avenue NW	Harvard Street NW	10.2	B	5.6	A	5.2	A	6	A	6	A
Georgia Avenue NW	Barry Place NW	7.2	A	9.3	A	9.2	A	8.2	A	11.5	B
Georgia Avenue NW	Bryant Street NW	11.1	B	10.4	B	7	A	2.1	A	1.6	A
Georgia Avenue NW	W Street NW	11.7	B	11.9	B	6.2	A	8.5	A	8	A
Georgia Avenue NW	Florida Avenue NW	23.2	C	22.8	C	22.9	C	12.1	B	14.7	B

Table J-3: 2008 Afternoon LOS and Delays for Georgia Avenue

Intersection		Alternative 1B		Alternative 2B		Alternative 3B		Alternative 3C		Alternative 3D	
		Delay	LOS								
Georgia Avenue NW	New Hampshire NW	19.1	C	16.5	B	16.7	B	16.9	B	16.4	B
Georgia Avenue NW	Park Road NW	31.5	C	14.7	B	12.7	B	12.5	B	16.8	B
Georgia Avenue NW	Irving Street NW	155.3	F	12.7	B	14.2	B	13.4	B	12.2	B
Georgia Avenue NW	Harvard Street NW	25	C	14.1	B	15.9	B	16.1	B	10.7	B
Georgia Avenue NW	Barry Place NW	13.8	B	11.4	B	13	C	20.5	C	23.6	C
Georgia Avenue NW	Bryant Street NW	9.8	A	11.4	B	5.6	A	2.1	A	2	A
Georgia Avenue NW	W Street NW	20.2	C	18.8	B	13.2	B	11.4	B	12.1	B
Georgia Avenue NW	Florida Avenue NW	25.6	C	25.3	C	25.7	C	15	B	18.1	B

Table J-4: 2008 LOS and Delays for Sherman Avenue

Intersection		Alternative 1B		Alternative 2B		Alternative 3B		Alternative 3C		Alternative 3D	
		Delay	LOS								
Midday Peak Hour											
New Hamp. Ave NW	Princeton Place NW	2.9	A	2.9	A	2.9	A	2.9	A	2.8	A
New Hamp. Ave NW	Park Road NW & Monroe Street NW	5	A	5	A	5	A	5	A	5	A
Sherman Avenue NW	Kenyon Street NW	9	A	11.3	B	8.4	A	8.7	A	12.3	B
Sherman Avenue NW	Columbia Road NW	7.6	A	10	B	9.7	A	9.6	A	11.1	B
Florida Avenue NW	Vermont Avenue NW	12.7	B	12.1	B	12.1	B	12.1	B	12.1	B
Afternoon Peak Hour											
New Hamp. Ave NW	Princeton Place NW	8.8	A	8.6	A	8.6	A	8.6	A	8.6	A
New Hamp. Ave NW	Park Road NW & Monroe Street NW	32.6	D								
Sherman Avenue NW	Kenyon Street NW	21.7	C	25.9	C	22.9	C	23.4	C	24.4	C
Sherman Avenue NW	Columbia Road NW	28.6	C	33	C	31.9	C	31.9	C	34.1	C
Florida Avenue NW	Vermont Avenue NW	20.5	C	22.7	C	23.1	C	23.6	C	23.4	C

Transit

For Alternatives 1A and 1B, the right lanes from New Hampshire Avenue to Florida Avenue would be dedicated for buses, right-turning vehicles, and bikes. The advantages of such a transit-dedicated lane are as follows:

- It reduces transit travel times
- It increases the regularity of the transit service, which would improve schedule adherence and increase ridership
- It makes transit travel times more predictable, therefore making planned transit signal priority more effective

For Alternatives 2A and 2B, a dedicated transit lane would exist only between Howard Place and Florida Avenue, and buses would operate in mixed traffic between New Hampshire Avenue and Howard Place. Although the impact of the dedicated transit lane would not be as significant as for Alternative 1, this alternative would provide some

improvement to transit mobility by providing a dedicated transit lane through the most congested part of the corridor. In addition, this alternative would be less disruptive to vehicular traffic because most of the Georgia Avenue corridor would operate with two lanes in each direction,

There would be no dedicated transit lanes for Alternative 3. Buses would continue to operate in mixed traffic as they now do. An effective transit signal priority system would be difficult to implement for Alternative 3. The addition of dedicated turn lanes and turn restrictions could slightly affect transit delays, particularly if vehicles were blocking transit vehicles while waiting to turn.

On Sherman Avenue, the removal of one lane of traffic would not adversely impact transit vehicles. The acceptable vehicular levels of service on Georgia Avenue would also apply to buses, except when buses stay for long periods at bus stops

Bicycles

The goal for all alternatives is to remove bicyclists from sidewalks and allow them freedom of movement on roadways. For Alternative 1, bicyclists would share the dedicated transit lanes with buses and right-turning vehicles along Georgia Avenue. This may provide a safer environment since they would have less interaction with vehicular traffic. For Alternative 2, signage would be placed in the outside lanes of Georgia Avenue between New Hampshire Avenue and Howard Place indicating that bicycles share the road with vehicles. Between Howard Place and Florida Avenue, bicycles would share the dedicated transit lanes with buses. Signage would be placed in the outside lanes of Georgia Avenue between New Hampshire Avenue and Florida Avenue for Alternative 3 indicating that bicycles are allowed to travel in the roadway.

Great Streets Performance Measures

The alternatives were analyzed using the performance measures developed as part of the Great Streets Framework. Table J-5 shows these guiding principles and performance measures.



Figure J-5: Bicyclist on Georgia Avenue

Transportation Alternatives

Table J-5: Guiding Principles and Performance Measures

	1. Energize <i>Strengthen businesses and other local institutions and services</i>	2. Refresh <i>Integrate and conserve natural resources; create open spaces</i>	3. Move <i>Create a sustainable transportation network, with many travel options</i>	4. Distinguish <i>Create streets with vibrant places that reflect local character</i>	5. Care <i>Increase community ownership and stewardship</i>
Challenges	Change the public and market perceptions of the corridors through streetscape and transportation improvements, and reposition them as one of the best places to live and work, consequently expanding the city's tax base	Transform roadways and intersections into environmentally friendly and usable community open spaces	Change the existing "corridors" function from major vehicular arterials into streets that sustain healthy pedestrian and transit based activities, and consequently support the city's air quality and transportation agendas	Transform each corridor into a place that is memorable, compelling, and desirable to visit again and again	Reposition the street as a vital neighborhood asset, and thus increase the community's stake in its design, upkeep, and stewardship
Actions	<ul style="list-style-type: none"> Invest in areas where mixed-use and mixed income developments could flourish, especially around transit nodes and major crossings Create an attractive public environment along the existing retail areas, open spaces and institutions 	<ul style="list-style-type: none"> Employ low impact development (LID) techniques to improve the quality and reduce the quantity of storm water run-off into our rivers and streams Develop defined and shaded rights of way, with street trees and other plantings, without inhibiting visibility of businesses Install adequate trash receptacles, especially in neighborhood commercial areas Reduce the Urban " Heat Island Effect", with "greened" streetways Support the establishment of programs for schools and the general public aimed at promoting an understanding of clean, green, safe streets 	<ul style="list-style-type: none"> Balance the right-of-way (ROW) allocation such that people on foot, bicycle, transit and automobiles can safely coexist Prioritize pedestrians and their needs and aggressively promote a shift to walking, cycling, and use of public transit Minimize curb cuts and vehicle oriented intersections, and promote continuous access for walkers and cyclists Deploy and enhance transit systems in order to attract new developments Install street lights to enhance pedestrian movements while providing required roadway illumination Transform dangerous intersections into pedestrian-friendly crossings 	<ul style="list-style-type: none"> Enhance view sheds and ease of access to landmarks, parks, and waterfronts Reclaim sidewalks at vital street nodes and segments to create space for activities other than walking Reconfigure important intersections to create nodes of retail clusters, corner parks and/or transit hubs Design streetscape elements and public art programs unique to each corridor's cultural and historic context 	<ul style="list-style-type: none"> Involve communities in the design development process Establish a Construction Coordination Committee represented by residents and local businesses Help establish local group (s) for regular maintenance, promotion of businesses, and coordination of events
Measure of Success	<ul style="list-style-type: none"> Number of new businesses opened Level of private investments Number of existing businesses retained Number of new residents Number of new jobs created Change in property values Increase in sales tax revenue 	<ul style="list-style-type: none"> Decrease in the amount of impervious areas within the public right of way Increase in the tree canopy and coverage Improved health of street trees Reduction of the 'urban heat island' effect along the corridors Extension of the Low Impact Development techniques used 	<ul style="list-style-type: none"> Increase in transit ridership Increase in pedestrian counts at intersections Increase in alternative modes of transportation (walking and biking) Decrease in traffic accidents Improvement of air quality 	<ul style="list-style-type: none"> Distinct streetscape design from one corridor to another Range of activities along the sidewalk Increase in public space permits Utilization of street parks Quality of public art installed 	<ul style="list-style-type: none"> Creation of Community Improvement Districts (CIDs) or Business Improvement Districts (BIDs) and Main Street organizations Numbers of trees that have been adopted by the local businesses Improved litter rating Number of blocks adopted by local organizations

Each alternative was analyzed using the Great Streets Framework performance measures, as shown in Table J-6.

Table J-6. Alternatives vs. Performance Measures

Great Streets Guiding Principles and Performance Measures	Transportation Alternatives							
	#1A	#1B	#2A	#2B	#3A	#3B	#3C	#3D
	<i>Transit-focused</i>	<i>Transit-focused w/ new Sherman Ave</i>	<i>Mixed-modes</i>	<i>Mixed-modes w/ new Sherman Ave</i>	<i>Auto-focused</i>	<i>Auto-focused w/ new Sherman Ave</i>	<i>Auto-focused w/ T Street</i>	<i>Auto-focused w/ T Street and new Sherman Ave</i>
1. Energize <i>Strengthen businesses and other local institutions and services</i>	Transit-focus will generate creation of transit nodes on corridor; removal of parking will negatively impact businesses	Transit-focus will generate creation of transit nodes on corridor; removal of parking will negatively impact businesses	Balance of parking for business users and transit lanes for transit users	Balance of parking for business users and transit lanes for transit users	Parking available for business users	Parking available for business users	Parking available for business users	Parking available for business users
2. Refresh <i>Integrate and conserve natural resources and create valuable open spaces</i>	No LID techniques	LID-median on Sherman Ave	LID parking on Georgia Ave	LID parking on Georgia Ave and LID median on Sherman Ave	LID Parking	LID parking on Georgia Ave and LID median on Sherman Ave	LID Parking	LID parking on Georgia Ave and LID median on Sherman Ave
3. Move <i>Create a sustainable transportation network, with many travel options</i>	Shared lane for buses and bicycles on Georgia Ave - buses travel in separate lane	Shared lane for buses and bicycles on Georgia Ave (buses travel in separate lanes) and Sherman Ave	Shared lane for buses and bicycles on Georgia Ave - buses travel in separate lanes	Shared lane for buses and bicycles on Georgia Ave (buses travel in separate lanes) and Sherman Ave	Shared lane for bicycles on Georgia Ave - buses travel in mixed traffic	Shared lane for bicycles on Georgia Ave - buses travel in mixed traffic - and Sherman Ave	Shared lane for bicycles on Georgia Ave - buses travel in mixed traffic	Shared lane for bicycles on Georgia Ave - buses travel in mixed traffic - and Sherman Ave
4. Distinguish <i>Create streets with vibrant places that reflect local character</i>	Widen sidewalks, create historic walk of fame, create linear entrance at Banneker Park							
5. Care <i>Increase community ownership and stewardship</i>	Community involved in process since very beginning; potential to create BID for Georgia Ave							

Transportation Alternatives

All the alternatives would meet the criteria for two of the five measures: **Distinguish** and **Care**. Alternatives 1 and 2 would **Energize** Georgia Avenue more so than Alternative 3, as Alternatives 1 and 2 would create transit nodes along the corridor, which would strengthen businesses. However, Alternative 1 would not **Refresh** the corridor as much as Alternatives 2 and 3. More low-impact development (LID) techniques would be present in Alternatives 2 and 3 via the LID parking covering and LID-designed median on Sherman Avenue. Performance Measure 3, **Move**, would be more prevalent with Alternatives 1 and 2 as these alternatives create a true multimodal corridor for Georgia Avenue by providing a dedicated bus lane for all or a portion of the roadway. The bus lane would be shared with bicyclists. Bicycles would travel on the roadways of both Georgia and Sherman Avenues and not on the sidewalks.

Summary of Findings

Based on the transportation operations analysis and the performance measures evaluation, the following findings were obtained:

- Alternatives 1 and 2 would allow more opportunity for pedestrian improvements
- All alternatives would route bicycles off of sidewalks and onto roadways
- All alternatives would allow Sherman Avenue to become more residential in character
- Alternative 1 would optimize transit travel, but it would remove parking and increase congestion for the remaining users of the corridor
- Although Alternative 3 would improve operations for automobile traffic, it would limit pedestrian and transit mobility in the lower portions of the corridor

These findings were used to determine the preferred alternative, which is discussed in the following chapter.

Recommendations

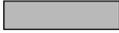
- K. Preferred Alternative
 - i. Reasoning
 - ii. Transportation Recommendations
 - iii. Public Realm Recommendations
- L. Short Term Recommendations
- M. Long Term Recommendations
- N. Implementation Plan

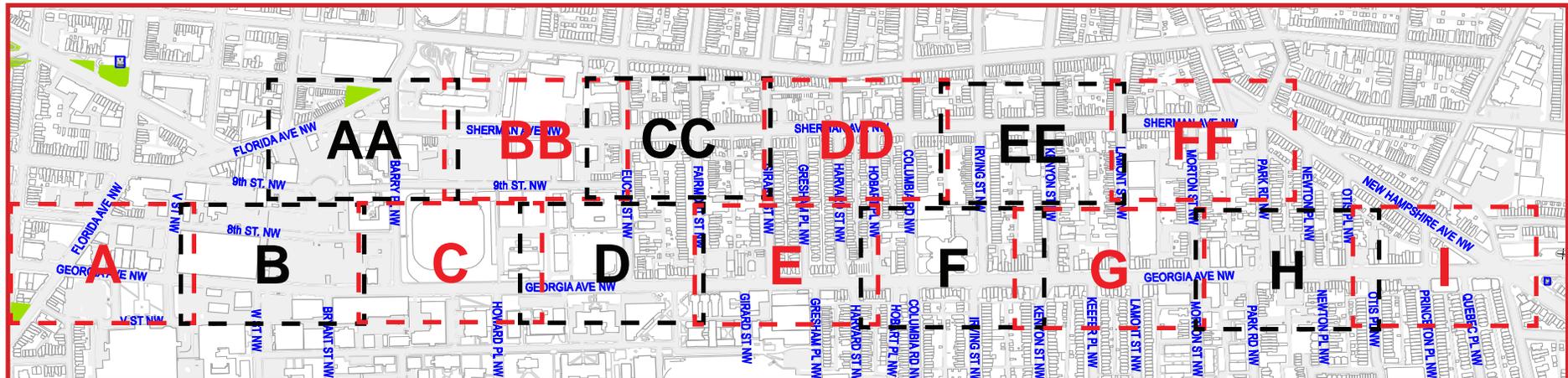
K. Preferred Alternative

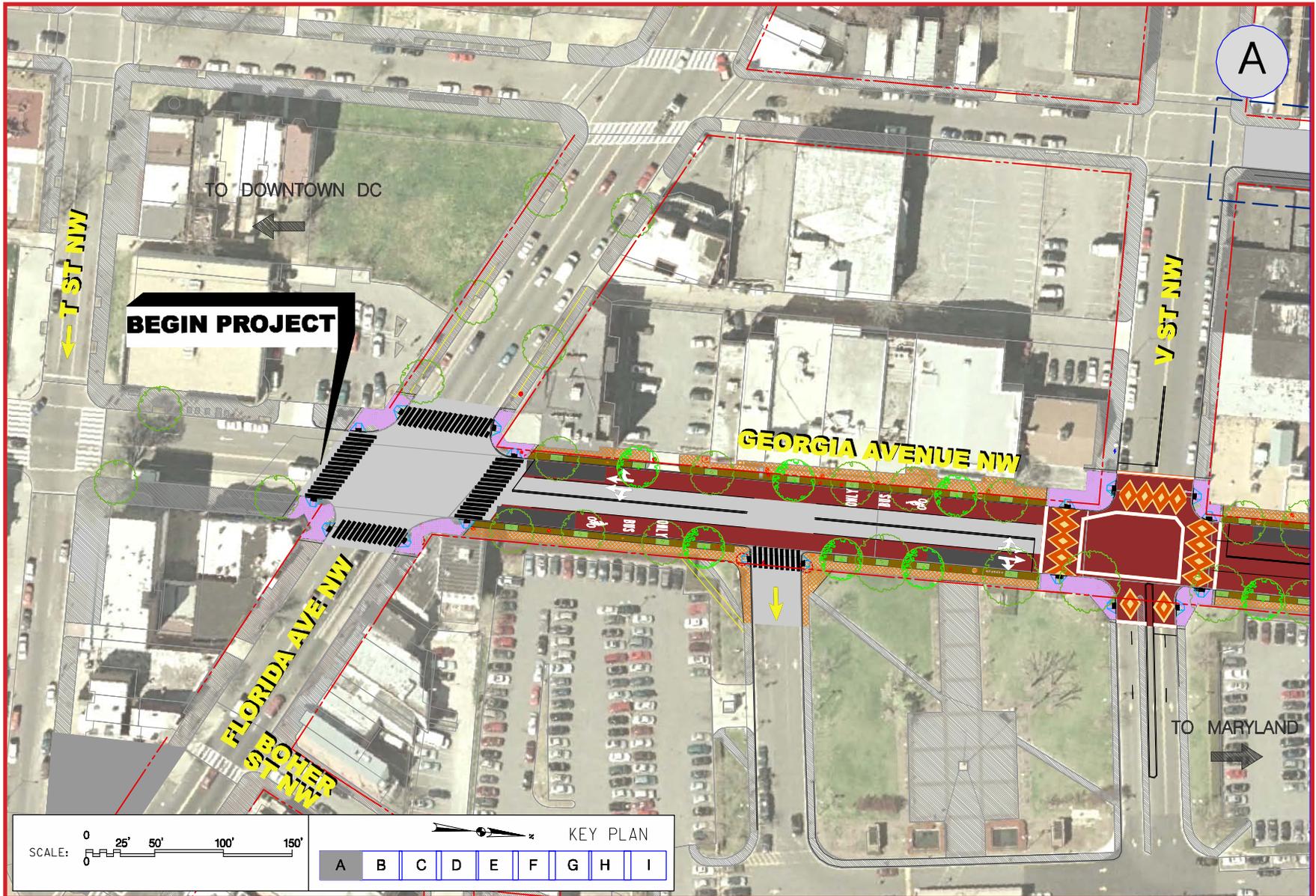
Alternative 2B was selected as the preferred alternative because of its ability to reduce congestion and improve the flow of all modes of cars, buses, shuttles, bicyclists, and pedestrians. This alternative focuses on reducing congestion throughout the corridor by removing parking in some sections, creating a transit-only lane, and other features. In addition, Alternative 2B provides the opportunity to move bicyclists from the sidewalk to a shared lane on the roadway and provide Sherman Avenue with a more residential character. The following are some of the changes proposed as part of Alternative 2B:

- Keep parking on both sides of Georgia Avenue from New Hampshire Avenue to Howard Place and current lane configurations
- Add a bulb-out on southbound Georgia Avenue at Howard Place
- Place a dedicated right-turn on southbound Georgia Avenue from Howard Place to Barry Street (in the former parking lane)
- Remove parking on both sides of Georgia Avenue from Barry Place to Florida Avenue
- Remove parking on both sides of Georgia Avenue from Barry Place to Florida Avenue
- Make outside lane a transit-only lane in this section
- Remove one travel lane on Sherman Avenue and introduce a planted median

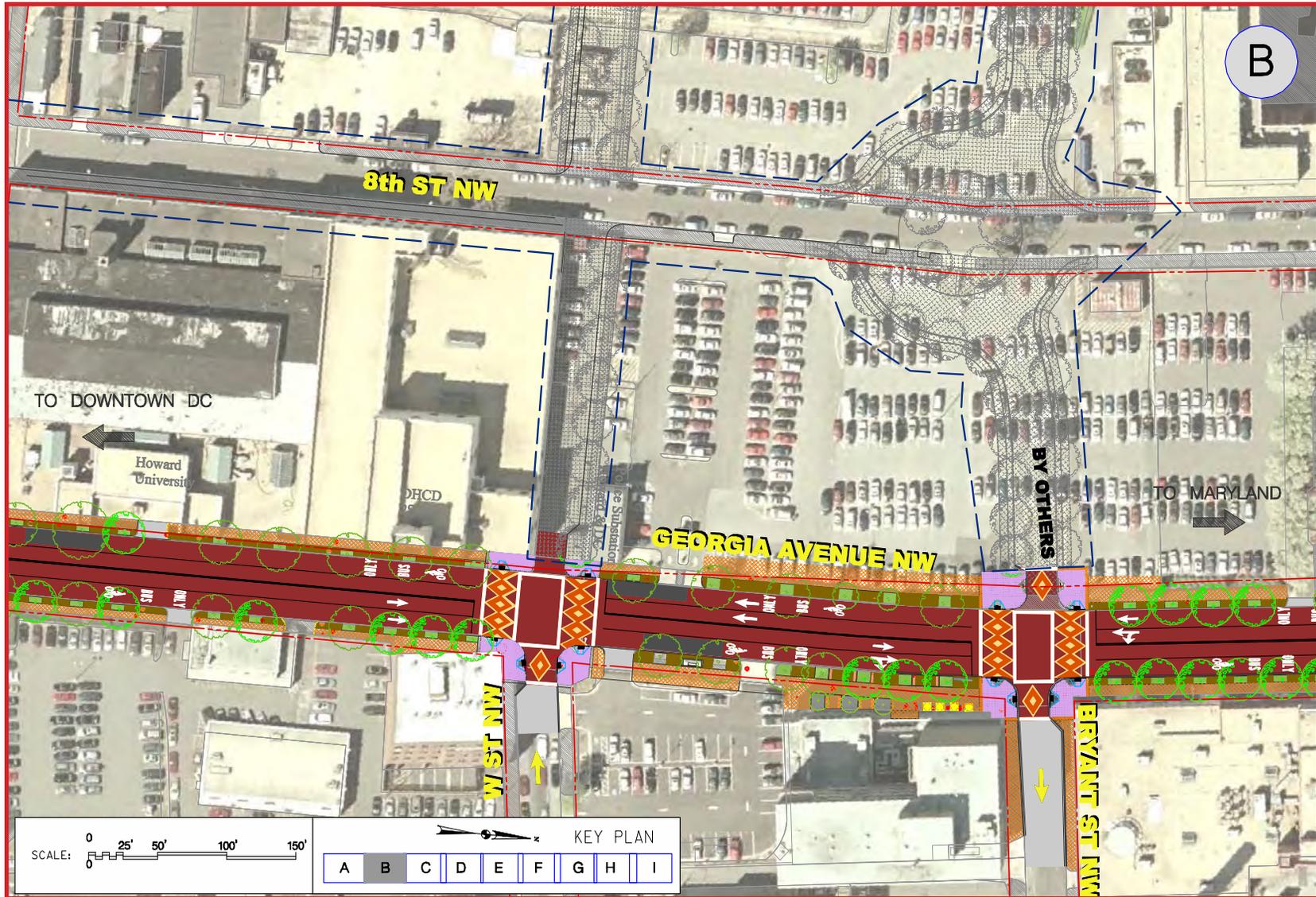
The design plans for the alternative are shown on the following pages. The design plan includes the recommended roadway configurations, sidewalk upgrades, and streetscape enhancements. Use the legend on this page to determine the specific features recommended as part of the preferred alternative. The key below will guide you through the order of the plan sheets. A discussion as to why Alternative 2B was selected as the preferred alternative is provided after the plan sheets.

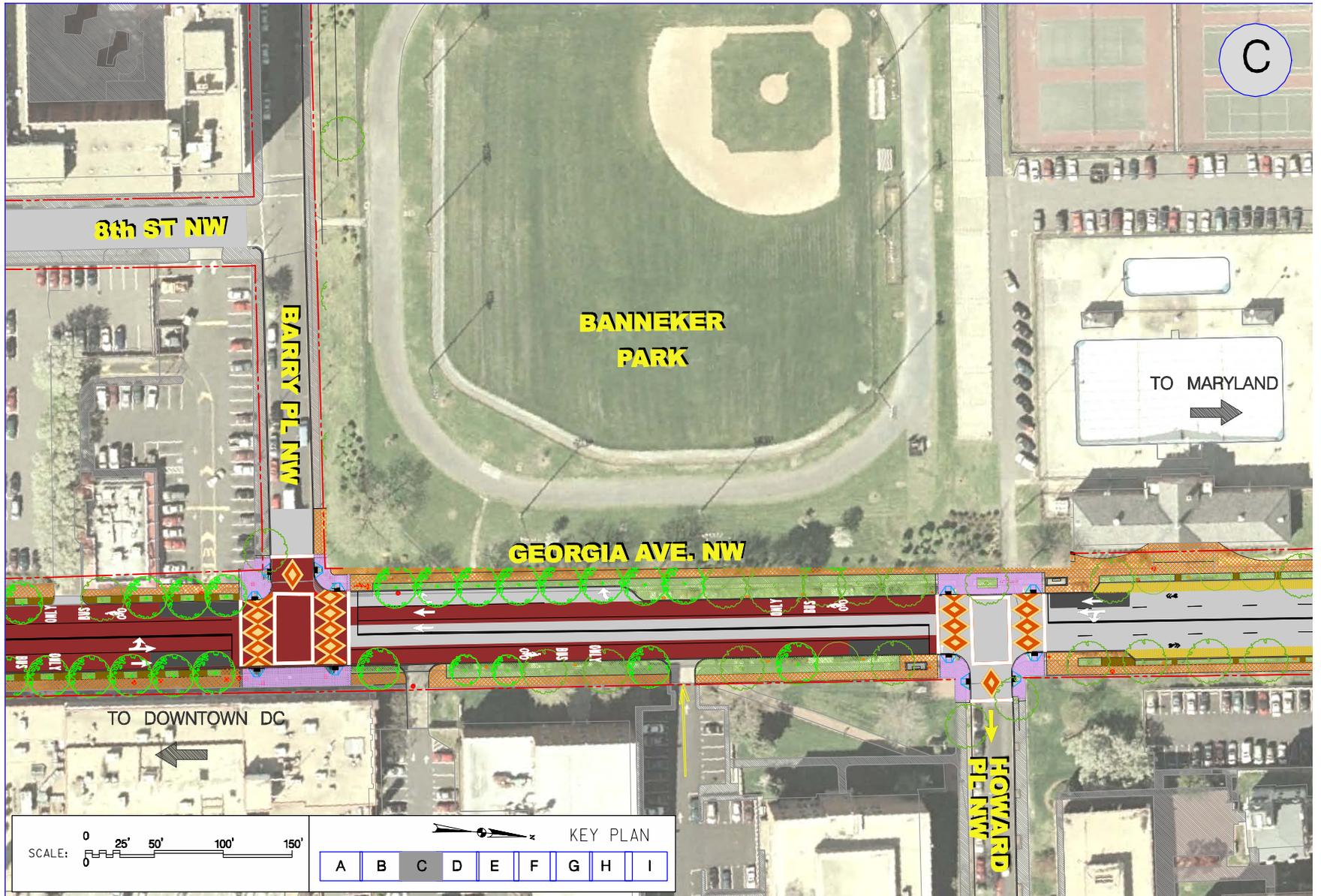
LEGEND	
	PAVEMENT/RESURFACING
	COLORED ASPHALT PAVEMENT
	SPECIAL L.I.D. PARKING SURFACE
	PAVEMENT/SURFACE REMOVAL
	SPECIAL BUS PAD
	SPECIAL SIDEWALK TREATMENT
	SCORED SIDEWALK
	SPECIAL L.I.D. CURBSIDE SURFACE
	PLANTING AREA
	ADA-RAMP
	STANDARD CROSSWALK
	SPECIAL "PRINT" CROSSWALK
	RIGHT-OF-WAY
	BY OTHERS
	LIGHT
	TREE



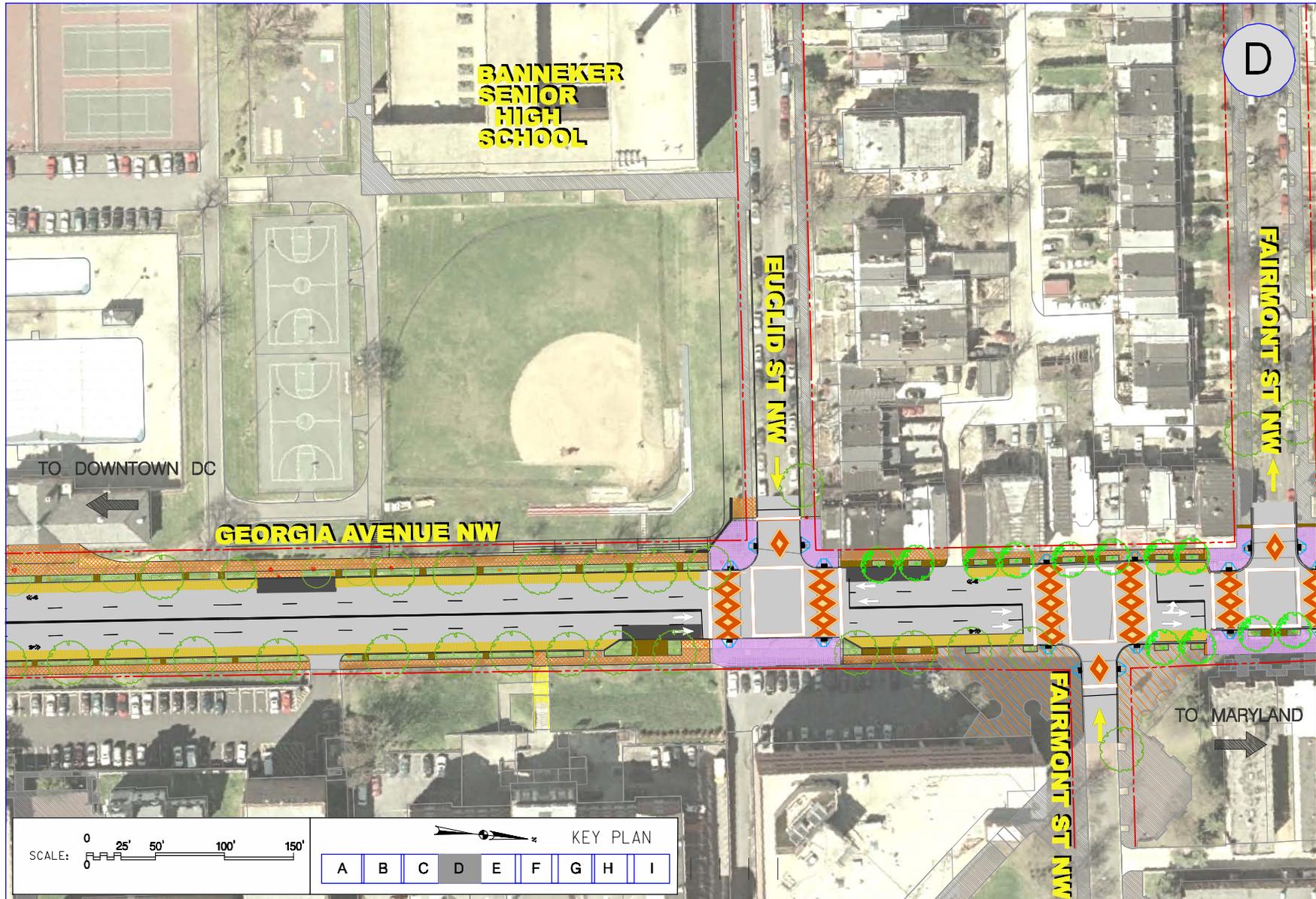


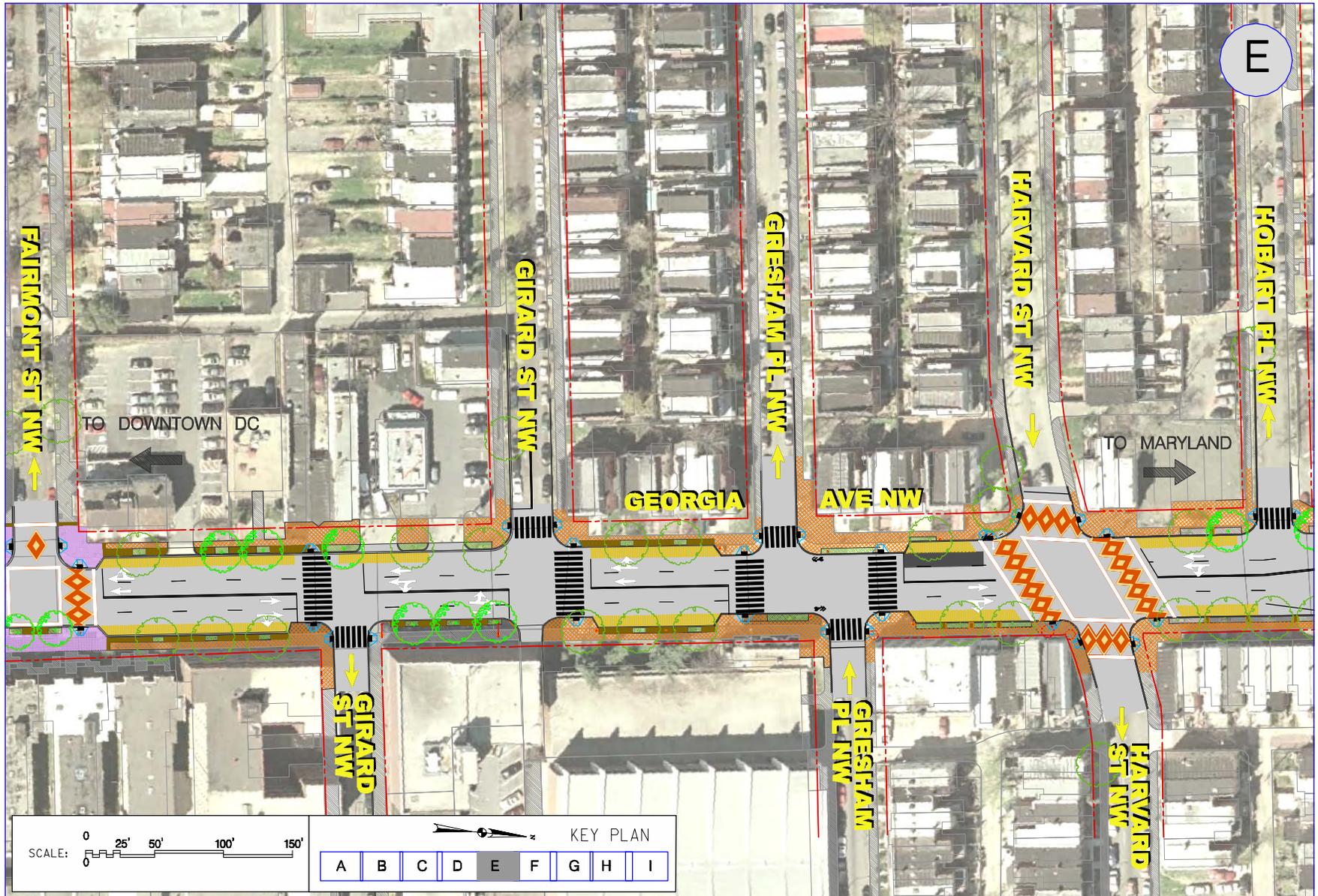
Preferred Alternative



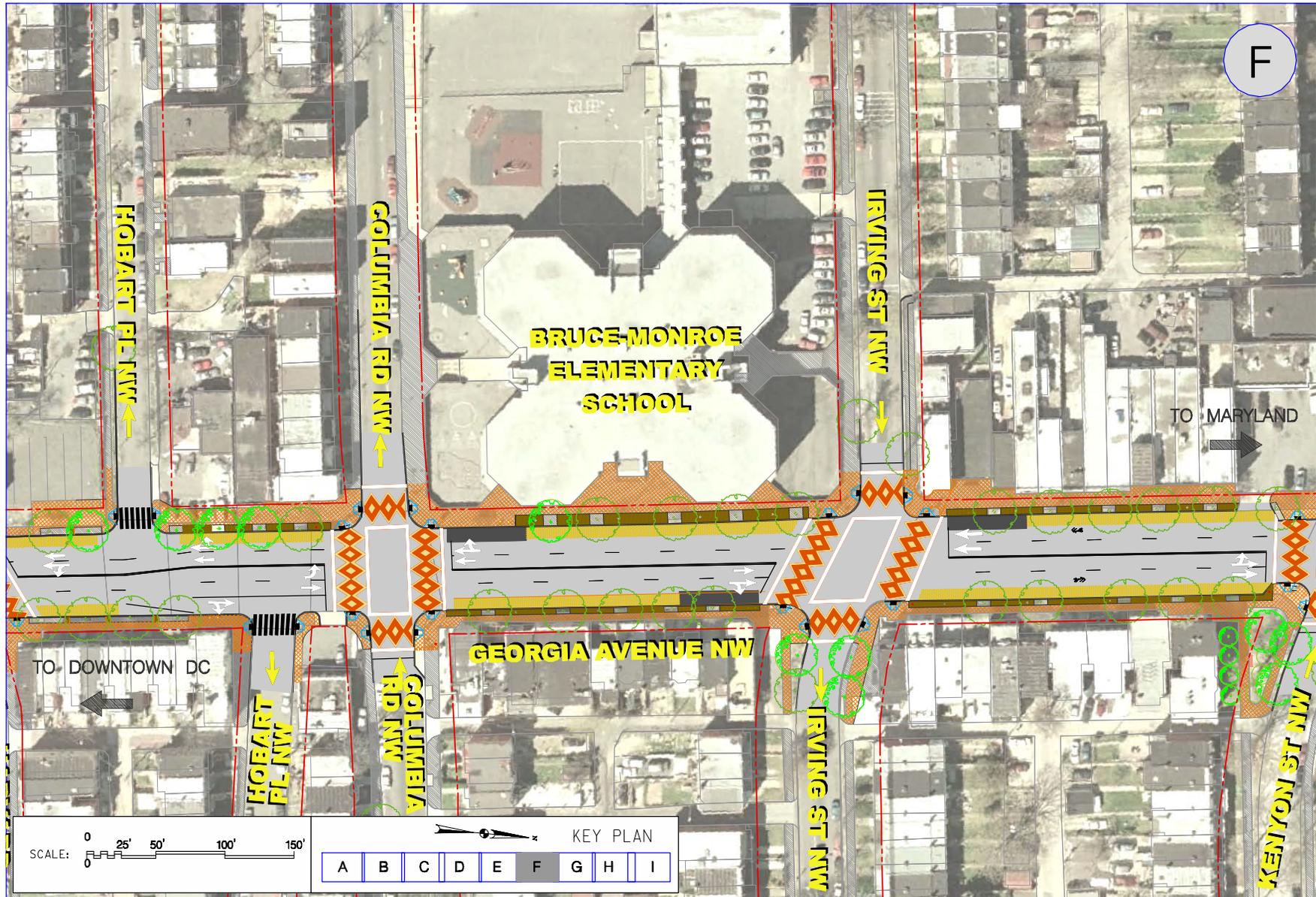


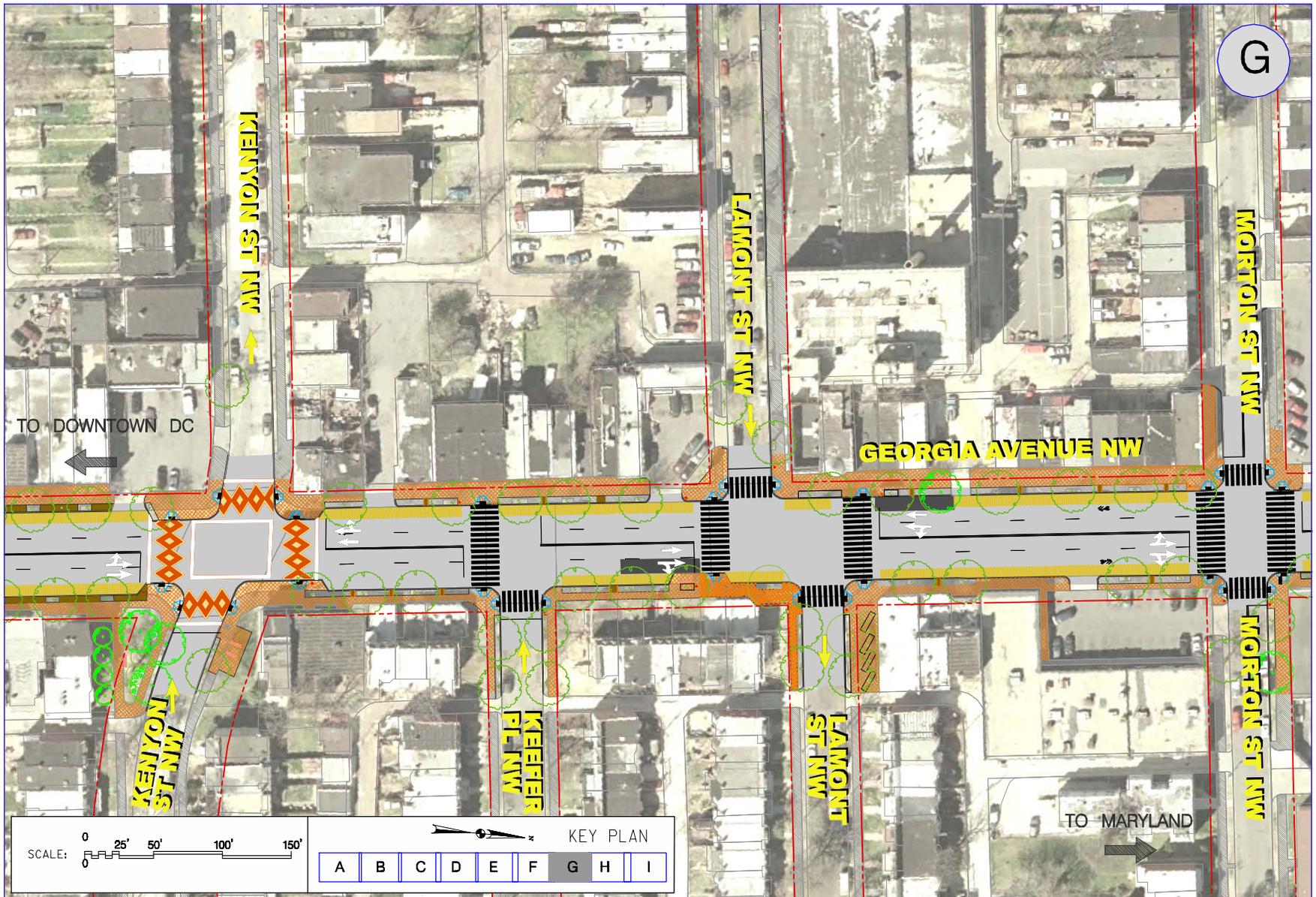
Preferred Alternative





Preferred Alternative





Preferred Alternative

