

FINAL

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NATIONAL PARK SERVICE
NATIONAL MALL & MEMORIAL PARKS**

DISTRICT DEPARTMENT OF TRANSPORTATION

UNION STATION REDEVELOPMENT CORPORATION

ARCHITECT OF THE U.S. CAPITOL

**FINAL ENVIRONMENTAL ASSESSMENT
AND SECTION 4(f) EVALUATION**

COLUMBUS CIRCLE/COLUMBUS PLAZA REHABILITATION

Union Station
Washington, D.C.

District Department of Transportation Contract No.: POKA-2005-T-0010-LS

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TABLE OF CONTENTS

LIST OF FIGURES	ii
LIST OF TABLES	iii
SECTION 1 – PURPOSE AND NEED	
1.1 Project Overview	1-1
1.2 Project Description	1-1
1.3 Purpose and Need for the Project.....	1-7
SECTION 2 – ALTERNATIVES	
2.1 No-Build Alternative	2-1
2.2 Proposed Action.....	2-1
2.3 Other Alternatives Considered.....	2-9
2.3.1 Concept A.....	2-9
2.3.2 Concept B-1.....	2-10
SECTION 3 – ENVIRONMENTAL CONSEQUENCES	
3.1 No-Build Alternative	3-1
3.2 Proposed Action.....	3-1
3.2.1 Traffic and Transportation.....	3-2
3.2.2 Land Use and Socioeconomics.....	3-2
3.2.3 Air Quality.....	3-5
3.2.4 Noise and Vibration.....	3-7
3.2.5 Cultural Resources.....	3-7
3.2.6 Parklands and Section 4(f) / Section 6(f) Resources	3-10
3.2.7 Visual and Aesthetics	3-12
3.3 Mitigation Measures	3-13
3.3.1 Traffic and Transportation.....	3-13
3.3.2 Land Use and Socioeconomics.....	3-13
3.3.3 Air Quality.....	3-13

3.3.4 Noise and Vibration..... 3-13

3.3.5 Cultural Resources..... 3-13

3.3.6 Parklands and Section 4(f)/Section 6(f) Resources 3-13

3.3.7 Visual and Aesthetics 3-14

3.4 Construction Impacts and Short-term Mitigation Measures 3-14

3.4.1 Traffic and Transportation..... 3-14

3.4.2 Land Use and Socioeconomics..... 3-14

3.4.3 Air Quality..... 3-14

3.4.4 Noise and Vibration..... 3-15

3.4.5 Cultural Resources..... 3-16

3.4.6 Parklands and Section 4(f)/Section 6(f) Resources 3-16

3.4.7 Visual and Aesthetics 3-17

3.5 Cumulative Impacts 3-17

SECTION 4 – CONSULTATION AND COORDINATION

SECTION 5 – REFERENCES

APPENDIX A – COORDINATION LETTERS

**APPENDIX B – COOPERATIVE AGREEMENT AND MODIFICATION BETWEEN DDOT,
USRC AND THE NPS**

APPENDIX C – MEETING INFORMATION

APPENDIX D – COMMENT LETTERS

LIST OF FIGURES

Figure 1. Project Area, Columbus Circle/Columbus Plaza 1-2

Figure 2. Existing Conditions, Columbus Circle/Columbus Plaza 1-3

Figure 3. Columbus Plaza, looking southeast 1-4

Figure 4. Columbus Memorial Fountain and Three Ornamental Flagpoles, looking northeast..... 1-4

Figure 5. East Bowl Fountain, Columbus Plaza, looking east 1-5

Figure 6. East Rostral Columns in the Roadway, Columbus Plaza, looking north..... 1-5

Figure 7. State Flagpoles and Granite Curb East of Columbus Plaza, looking southwest..... 1-6

Figure 8. Proposed Rehabilitation, Columbus Circle/Columbus Plaza..... 1-8

Figure 9. Roadway Plan, Columbus Circle/Columbus Plaza 2-2

Figure 10. Landscape Plan, Columbus Circle/Columbus Plaza 2-3

Figure 11. Circulation Concept A, Columbus Circle (PTG 2000)..... 2-9

Figure 12. Circulation Concept B, Columbus Circle (PTG 2000) 2-10

Figure 13. Existing Property and Rights-of-Way, Columbus Circle/Columbus Plaza..... 3-3

Figure 14. Proposed Changes of Jurisdiction and Rights-of-Way, Columbus Circle/Columbus Plaza 3-4

Figure 15. Union Station and Columbus Memorial Fountain, looking northeast 3-7

Figure 16. Columbus Plaza and Columbus Memorial Fountain, looking southwest 3-8

Figure 17. The City Post Office Building, looking north..... 3-9

Figure 18. Missing Skirt Stones Resulting from Failure of the Upper Bowl Rim, Columbus Memorial Fountain, March 2005 3-16

LIST OF TABLES

Table 1. Design Revisions Discussed During Agency Coordination 2-5

Table 2. Proposed Changes of Jurisdiction..... 3-2

Table 3. Agency Coordination and Project Meetings 4-1

PURPOSE AND NEED

1.1 PROJECT OVERVIEW

Columbus Circle (roadway)/Columbus Plaza (open space) is located in northeast Washington, D.C. The project area is bounded by North Capitol Street on the west; Second Street, NE on the east; H Street, NE on the north; and Massachusetts Avenue, NE on the south (**Figure 1**).

The District of Columbia Department of Transportation (DDOT), in conjunction with the National Park Service (NPS), the Union Station Redevelopment Corporation (USRC), and the Architect of the U.S. Capitol (AOC), and in cooperation with the National Capital Planning Commission (NCPC), proposes to improve access and circulation patterns in and around Columbus Plaza for pedestrians, taxis, bicyclists, private vehicles, commercial vehicles, Metrobuses, private motor coaches, and the many tour buses with permanent stops at Union Station. The project design will include improved pedestrian safety, separation of vehicles and pedestrians at critical bottleneck locations, creation of new intersections to improve vehicular flow, the re-design of lane widths and traffic signalization patterns, and the rehabilitation of the interior of Columbus Plaza. Funding for the project is provided by the NPS and the Federal Transit Administration though DDOT who is managing the project in conjunction with NPS, USRC, AOC, and the NCPC.

In September 2000, USRC prepared the *Union Station Access and Circulation Study* (USACS) (Parsons Transportation Group [PTG] 2000). That document provides specific discussions of existing conditions, technical analyses, and recommendations for improvements.

1.2 PROJECT DESCRIPTION

Massachusetts Avenue, NE at Columbus Plaza is currently a major urban arterial highway with seven through traffic lanes. It serves as a major cross-town connector and commuter route. Existing service roads to and from Massachusetts Avenue and a circulation roadway interior to Columbus Plaza provide access to Union Station. Columbus Plaza is a pedestrian space, designed to be a ‘grand entrance’ to Union Station (**Figure 2**). Columbus Plaza is characterized by the semi-circular design with radiating streets and avenues (**Figure 3**); open and park views from the Plaza, Columbus Memorial Fountain (**Figure 4**), large stone bowl fountains with balustrades at the east and west wings of the Plaza (**Figure 5**); the rostral columns in the roadway in front of Union Station (**Figure 6**); three ornamental flagstaves centered across the arches of the Main Hall of Union Station (**Figure 4**), and 56 flagpoles for the state and territory flags (**Figure 7**) with associated bronze plaques.

The project includes roadway and sidewalk improvements for Massachusetts Avenue, NE from 200 feet west of the intersection of First Street (west) to 200 feet east of the intersection of First Street (east). Also included is the symmetrical reconfiguration of Columbus Plaza between Massachusetts Avenue on the south and the Union Station service roadways on the north.

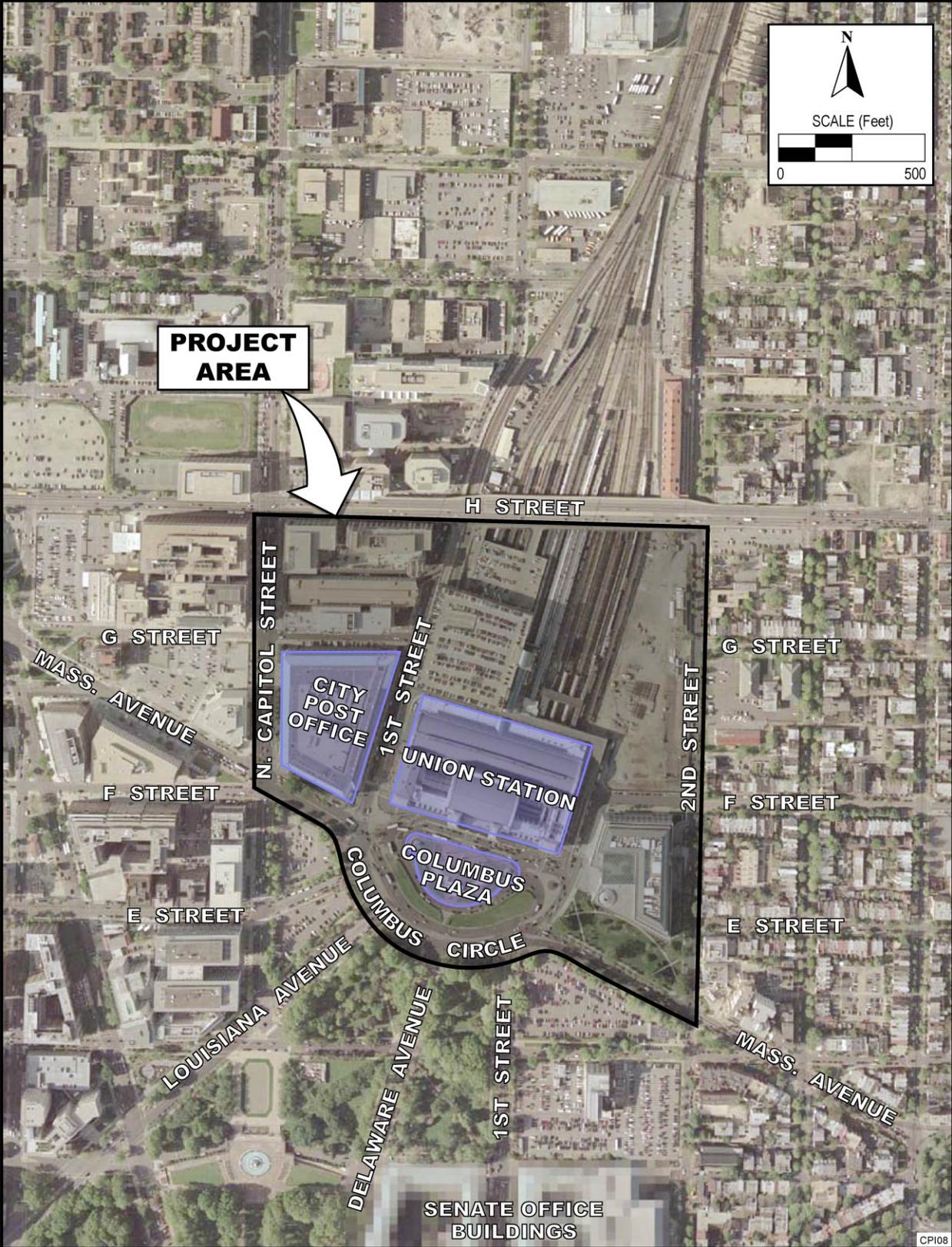


Figure 1. PROJECT AREA, COLUMBUS CIRCLE/COLUMBUS PLAZA

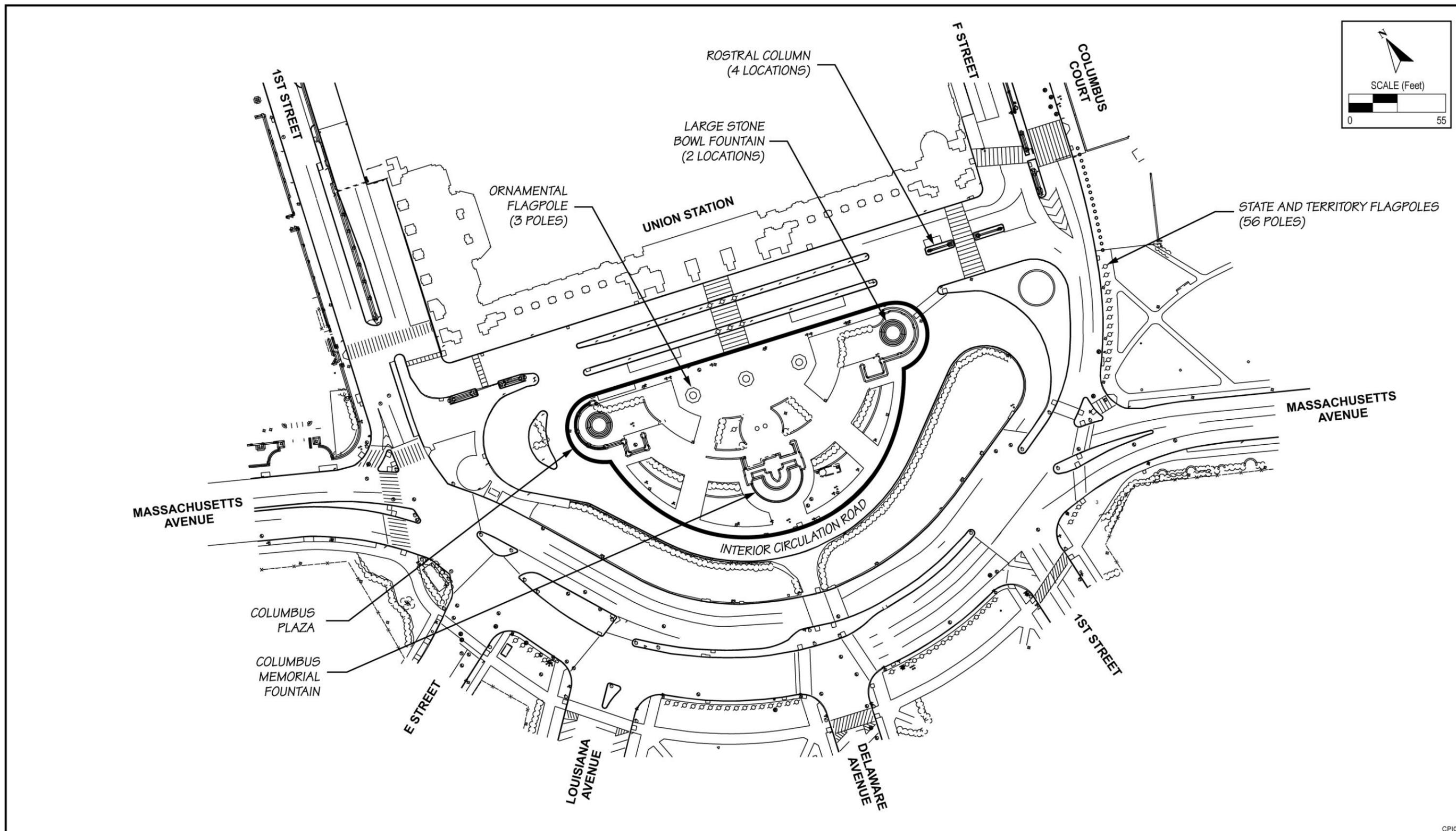


Figure 2. EXISTING CONDITIONS, COLUMBUS CIRCLE/COLUMBUS PLAZA



Figure 3. COLUMBUS PLAZA, LOOKING SOUTHEAST

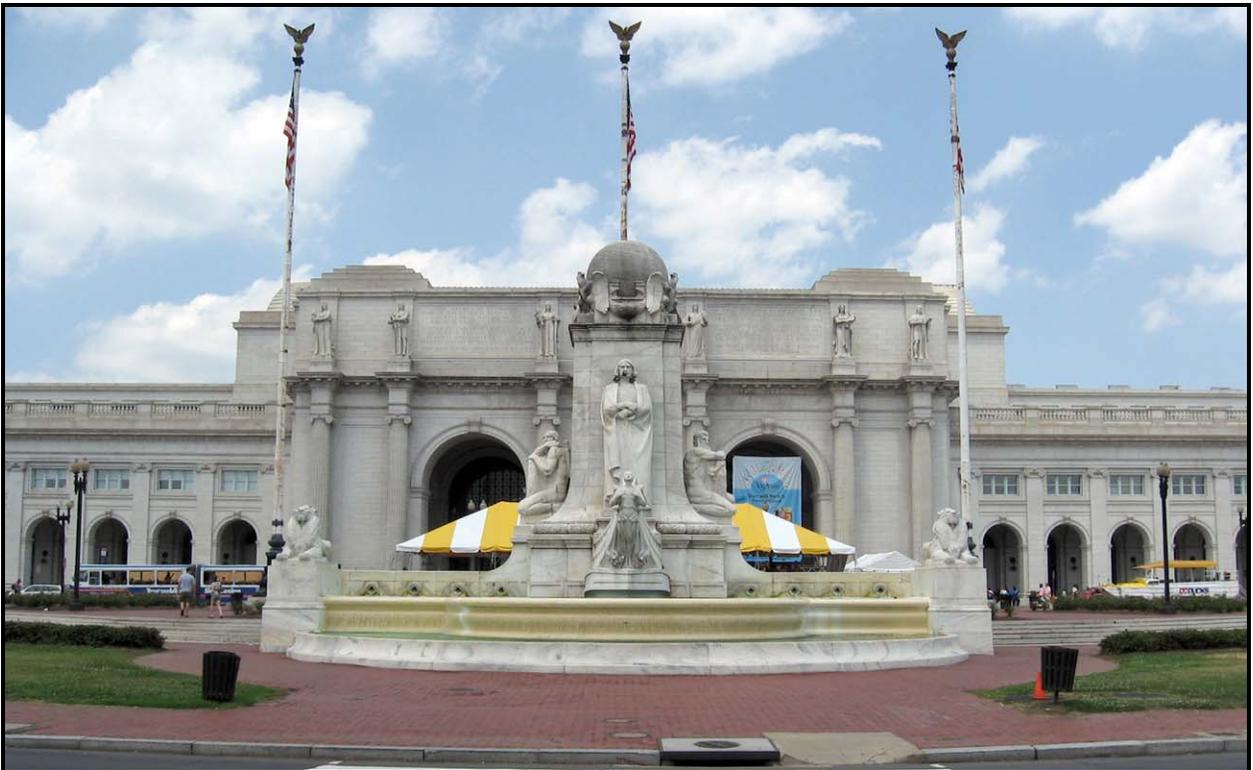


Figure 4. COLUMBUS MEMORIAL FOUNTAIN AND THREE ORNAMENTAL FLAGPOLES, LOOKING NORTHEAST



Figure 5. EAST BOWL FOUNTAIN, COLUMBUS PLAZA, LOOKING EAST



Figure 6. EAST ROSTRAL COLUMNS IN THE ROADWAY, COLUMBUS PLAZA, LOOKING NORTH



Figure 7. STATE FLAGPOLES AND GRANITE CURB EAST OF COLUMBUS PLAZA, LOOKING SOUTHWEST

The project will include removal of the existing interior circulation roadway, fence and adjacent shrubs in Columbus Plaza and the construction of a new intersection at E Street, NE. Massachusetts Avenue will be re-aligned to the north and will include wider median traffic islands/pedestrian refuges. The existing service roads in front of Union Station will be re-configured to provide better traffic control. Sidewalks at Union Station will be widened at strategic locations and extended to afford better accommodation of heavy pedestrian traffic. Brick walkways and granite curbs will also be repaired and reset. The existing granite curb that delineates the perimeter of Columbus Plaza will be re-established on the Plaza's south side. The curb will be flush with adjacent paving/grass areas.

Traffic islands/pedestrian refuges will be constructed at the east and west ends of Union Station, at First Street, and at the access ramps to the Union Station parking garage to accommodate pedestrians, better control traffic movements, and to provide green space and streetscape improvements.

Existing streetlights on Massachusetts Avenue will be upgraded to better satisfy illumination and public safety needs. Existing traffic signals will be modified and supplemented with additional traffic signals to allow more efficient traffic movements through the project area. Additional lighting will be added to the interior of Columbus Plaza, particularly along the new walkways built in the former roadway area and to illuminate Columbus Memorial Fountain and the three American flags in front of Union Station.

Subsurface repairs including pipe replacement, and mechanical and electrical system upgrades to the NPS mechanical room will be implemented for the Columbus Memorial Fountain.

Columbus Plaza will be expanded through the removal of the existing interior circulation roadway. The general appearance of the plaza will not be modified with particular attention to the retention of existing fountains and flagpoles (**Figure 8**).

Special project features include:

- Preservation of the historic elements of Columbus Plaza
- Coordination of new and existing traffic signals
- Incorporation of existing and planned bicycle routes
- Geometric shift of Massachusetts Avenue to the north
- Special accommodation of pedestrians
- Improvements for handicapped access, particularly through Columbus Plaza

1.3 PURPOSE AND NEED FOR THE PROJECT

Four principal goals were originally outlined in the *USACS* (PTG 2000); these goals and their associated objectives were developed during the initial phase of the study process and agreed to by Steering Committee participants. The primary purpose of the project is to solve the traffic and circulation problems around Columbus Plaza for a variety of transportation modes, including buses, taxis, service vehicles, automobiles, bicycles, and pedestrians. Other external transportation issues that will ultimately need to be addressed by either the District of Columbia, the Washington Metropolitan Area Transit Authority (WMATA), or other agencies, range from design of First Street, NE with emphasis on compatibility with bicycle lanes, to improvements along the North Capitol Street corridor and to the North Entrance of the Union Station Metrorail Station.

There are three specific elements to the project's *purpose*: (1) improve vehicular access and circulation within Columbus Plaza and on the streets immediately adjacent to Union Station, (2) improve pedestrian access within Columbus Plaza and immediately adjacent to the Union Station building proper, and (3) ensure that all users of the vehicular and pedestrian circulation systems are accommodated with ease of movement and are provided with appropriate information within the Union Station intermodal environment.

The first element of the project's purpose will be satisfied with implementation of the following actions:

- Separate different transportation modes (e.g. buses, taxis, private autos, tour mobiles, motor coaches, Metrobuses, and pedestrians) to the greatest extent possible
- Reduce traffic congestion within the Columbus Plaza circulation road

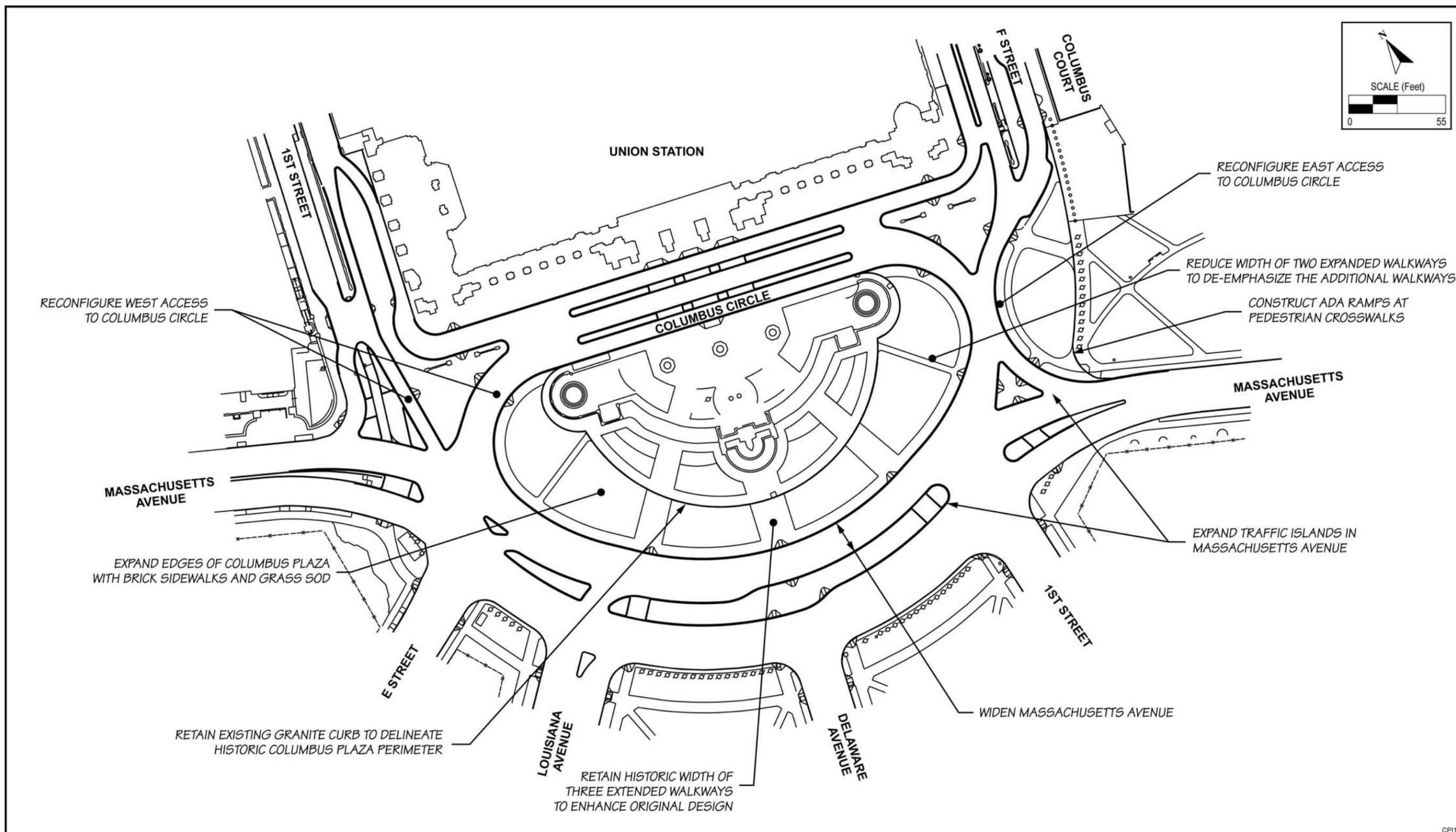


Figure 8. PROPOSED REHABILITATION, COLUMBUS CIRCLE/COLUMBUS PLAZA

- Ensure that access is maintained for service vehicles and trucks to support retail, entertainment, and other functions within the Union Station building
- Minimize traffic delays on Massachusetts Avenue and control vehicle speeds through Columbus Circle
- Provide amenities and information for Metrobus patrons
- Provide tour bus and motor coach staging areas, and pick-up and drop off areas within close proximity to the Union Station building
- Improve the Union Station garage/roadway circulation system interface by considering modifications to the various garage functions, including parking space allocations, redesign, and capacity additions

The second element to the project's purpose will be satisfied with implementation of the following actions:

- Reduce conflicts between pedestrians, cyclists, and vehicles in order to increase pedestrian and cyclist safety and comfort
- Use urban design and landscaping features to create safe pedestrian movements
- Improve pedestrian circulation, pathways, and entrances to Metrorail
- Ensure that seniors and persons with disabilities can easily negotiate Columbus Plaza on foot and/or in a wheelchair

Several **goals and objectives** were addressed in developing the rehabilitation to Columbus Plaza. The following goals and objectives, all related primarily to modifying the current design of the area immediately in front of Union Station proper, have been identified:

Arrival and Drop-off Lanes. Three lanes are currently designated in front of the station for various purposes, including pick-up and drop-off of passengers from cars, Metrobuses, charter buses, tour buses, and taxis as well as other specialty vehicles and services. Current problems appear to be the lack of enforcement within this important arrival area related to who uses which lane and how long vehicles, either attended or unattended, stand in these lanes, often blocking the free flow of traffic. This is particularly problematic during peak season times.

Circulation Road. An inner loop road is currently provided in the circulation system and is meant to serve as a means of access back onto both eastbound and westbound Massachusetts Avenue. It also provides a direct connection to First Street, NE (East) southbound towards the U.S. Capitol Building. Currently, only a small number of vehicles use this circulation roadway as the majority of traffic accesses Massachusetts Avenue from the west end of the building at First Street, NE (West), in a U-turn movement, conflicting with the heavy pedestrian traffic at this corner of the station.

Aesthetics/Condition. The aesthetics and condition of sidewalks, roadways, and streetscape amenities around Union Station should be viewed as an enhancement to one's experience while being at Union Station. Union Station is listed on the National Register of Historic Places (NRHP) and, as such, its external facilities need to be maintained with a respectful eye towards preservation and tourism.

First Street / West Side of Union Station. First Street, NE (West) currently serves as an important access point to the Metrorail station for riders, provides access to the parking garage, and is used by vehicles to connect with Massachusetts Avenue. This combination of users causes excessive congestion and chaos, particularly at the southwest corner of the station which is a key traffic point for pedestrians. The U-turn movement of vehicles leaving Columbus Plaza is particularly problematic.

Emergency Vehicle Access. Emergency vehicles create congestion when stopped along the building's edge. This is particularly evident at the west end of the building, where numerous traffic movements are impeded by the slightest change in flows.

Metrobus. Metrobus patrons move within an area of Columbus Plaza adjacent to Massachusetts Avenue and First Street, NE (West). Over 2,200 Metrobus patrons use this area within the 7:00 am to 7:00 pm period. Boarding and alighting, by themselves, are not problematic. Circulation issues arise when each bus remains within Columbus Plaza for layover periods lasting longer than eight minutes.

Pedestrian Issues. Union Station is heavily used by pedestrians with many visiting the station to shop, while others make connections to the commuter trains: Amtrak, Metrorail, Metrobus, and other transportation services. A significant number of Metrorail, Amtrak, Maryland Rail Commuter (MARC), and Virginia Railway Express (VRE) patrons walk to their final destinations once they arrive at Union Station. Massachusetts Avenue is viewed as a high speed arterial by many and has approximately 20,000 vehicles per day in both directions in front of Union Station. The speed and volume of the vehicles on Massachusetts Avenue contribute to difficulties as pedestrians attempt to cross this busy street. Pedestrian difficulties within Columbus Plaza and at First Street, NE merit attention as well. A secondary issue is the lack of definition at some crossing areas, which allows people to cross at undesirable locations, further complicating safety issues and vehicular conflicts.

Charter and Tour Buses. It is evident under peak-season scenarios that charter buses are a significant cause of congestion and confusion. Charter buses travel into town with tour groups and school groups, often avoiding the parking garage as a destination and, by default, utilizing the front of the building as their staging area. Part of the problem involves signage deficiencies, lack of enforcement, and a difficult approach and access to the rear parking structures.

ALTERNATIVES

In order to meet the project's purpose and need and to address the identified goals and objectives, this environmental assessment (EA) evaluates the potential impact of implementation of project alternatives. Analysis of the No-Build Alternative is required by the National Environmental Policy Act (NEPA) for baseline comparison with any build alternatives; for this project, there is only one build alternative (the Proposed Action).

2.1 NO-BUILD ALTERNATIVE

Under the No-Build Alternative, existing roadways would simply be maintained to preserve connectivity. With no widening or shifting of existing roads to add turn lanes or provide for better vehicular and pedestrian movement, this alternative would not solve any of the access and circulation problems caused by the current configuration and would not meet the purpose and needs of the project.

2.2 PROPOSED ACTION

The USACS (PTG 2000) presented two primary alternatives to address the goals and issues identified: Concept A and Concept B. A third "sub-option" (Concept B-1) was evaluated in the USACS as a variant of Concept B. Concept A and Concept B-1 were not carried forward in this EA and are briefly discussed below in Section 2.3. The USACS original Concept B was modified during design engineering and subsequent input from the NPS, the District of Columbia Historic Preservation Office (DCHPO), the National Capital Planning Commission (NCPC), and the U.S. Commission of Fine Arts (CFA) to become the Proposed Action.

Concept B eliminated the interior circulation roadway altogether and provided for a new signalized intersection for traffic exiting Union Station at Massachusetts Avenue opposite E Street. Like Concept A (described below in Section 2.3), First Street, NE west of the Union Station would be reconfigured to force southbound traffic to make a right-turn only at Massachusetts Avenue and other pedestrian circulation improvements and amenities would be provided. Unlike Concept A, original Concept B would have shifted the westbound roadway of Massachusetts Avenue north to provide for a wider median.

Thus, the Proposed Action consists of improvements to the roadways, sidewalks, landscaping, streetlights, and traffic lights (**Figure 9** and **Figure 10**). This build alternative includes the following primary elements:

- Widen Massachusetts Avenue along the southern edge of Columbus Plaza
- Eliminate the interior semi-circular access road and parking in front of the Columbus Memorial Fountain
- Reconfigure access to Columbus Circle on the east and west ends of Union Station

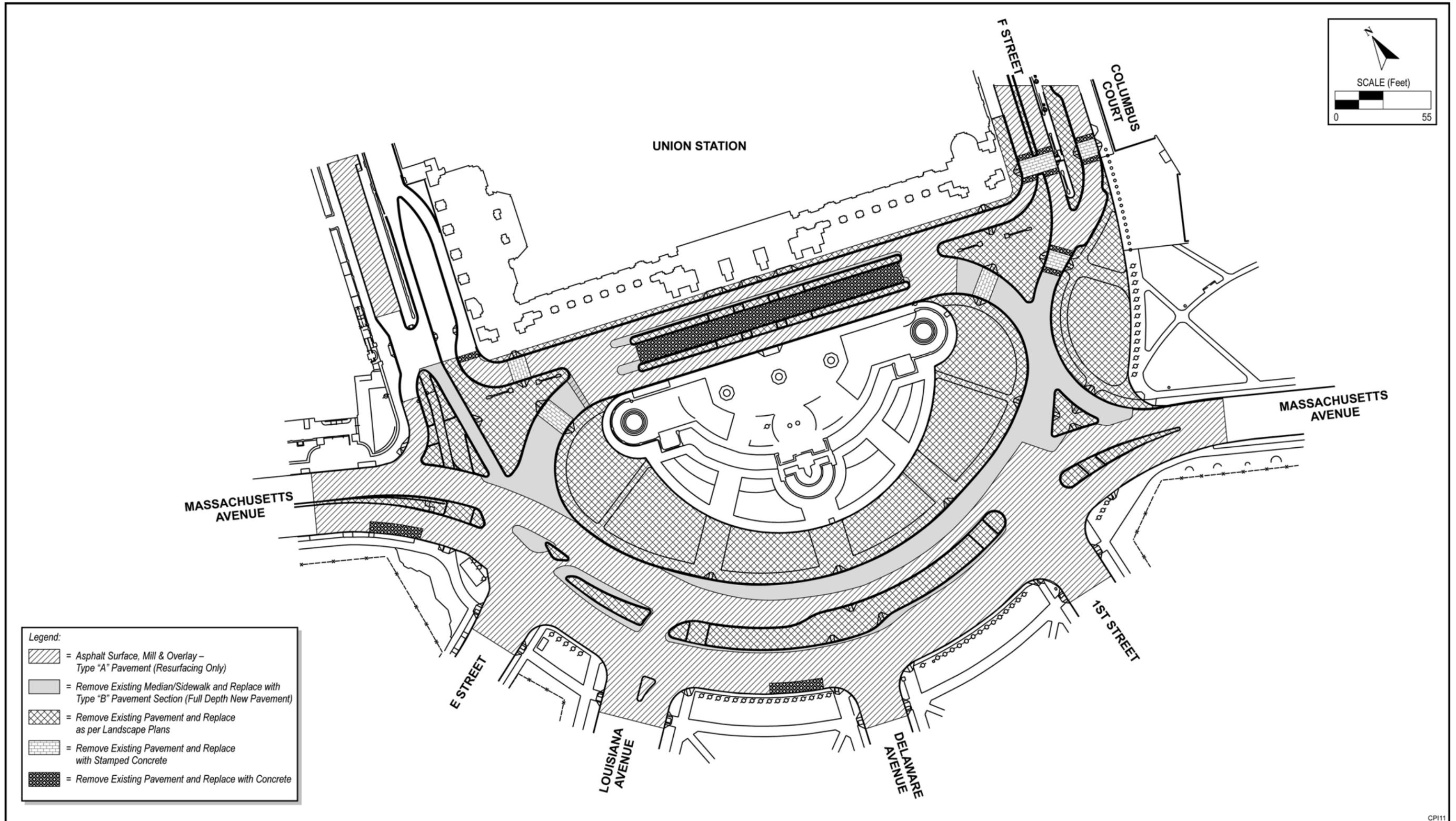


Figure 9. ROADWAY PLAN, COLUMBUS CIRCLE/COLUMBUS PLAZA

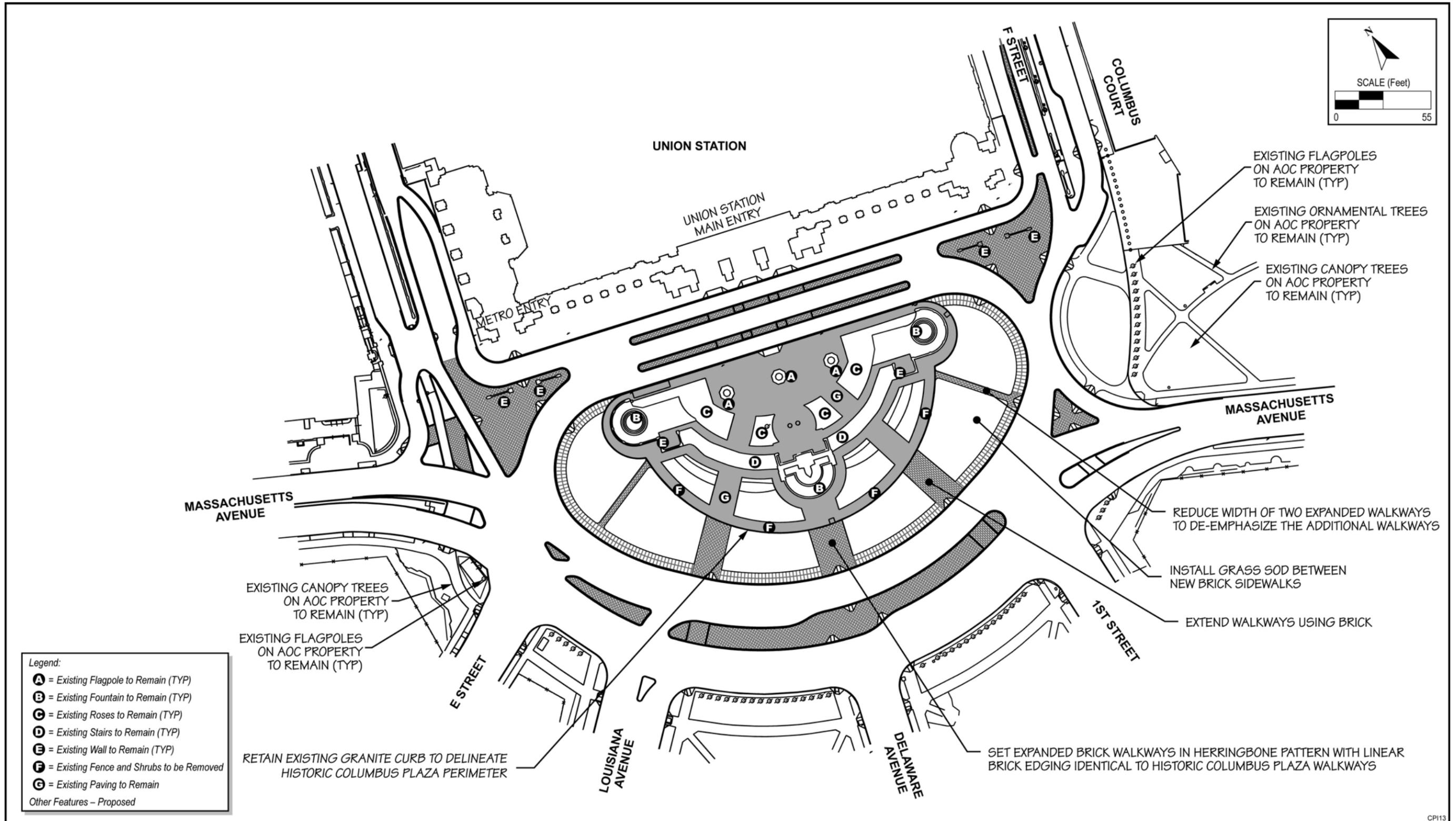


Figure 10. LANDSCAPE PLAN, COLUMBUS CIRCLE/COLUMBUS PLAZA

- Construct wheelchair/bicycle ramps (depressed curbs) at all pedestrian crosswalks in accordance with the Americans with Disabilities Act (ADA)
- Create safer pedestrian crossings
- Create connections from the Metropolitan Branch Bike/Pedestrian trail to the new Bike Station west of Union Station (separate project) and provide access across Massachusetts Avenue to the National Mall further south
- Remove existing pavement and replace with brick walkways and grass sod on the eastern, western, and southern edges of historic Columbus Plaza
- Remove the existing metal fence and shrub hedge along the southern perimeter of Columbus Plaza; extend brick walkways maintaining the existing radial pattern; and install grass sod between the walkways
- Implement subsurface repairs including pipe replacement, and mechanical and electrical system upgrades to the NPS mechanical room for the fountains in Columbus Plaza
- Restore or repair brick walkways and granite curbing with in kind materials and pattern in historic Columbus Plaza
- The existing granite curb that delineates the perimeter of Columbus Plaza will be re-established on the Plaza's south side. The curb will be flush with the adjacent paving/grass areas.
- Expand traffic islands/pedestrian refuges in Massachusetts Avenue and add streetscaping and/or landscaping that will not affect the view from Columbus Plaza to the state flagpoles
- Install additional pedestrian lighting to the interior of Columbus Plaza particularly along the new walkways built in the former interior roadway area
- Improve lighting to illuminate Columbus Memorial Fountain and the three American flags in front of Union Station
- Modify three existing streetlighting systems including:
 - Streetlights on Columbus Circle
 - Streetlights on First Street (east) and on Massachusetts Avenue, east of First Street
 - Streetlights on the south side of Massachusetts Avenue
- Modify existing traffic signals at:
 - First Street and Massachusetts Avenue (east)
 - E Street and Massachusetts Avenue
 - Louisiana Avenue and Massachusetts Avenue
 - Delaware Avenue and Massachusetts Avenue (south)
 - First Street and Massachusetts Avenue (west)
- Provide new traffic signals at the following intersections:
 - Delaware Avenue and Massachusetts Avenue (north)
 - On First Street near the new Bike Station

As a result of early and ongoing consultations with cooperating agencies and stakeholders, design elements were considered, discussed, and subsequently, either added or removed (Table 1).

Table 1. DESIGN REVISIONS DISCUSSED DURING AGENCY COORDINATION

ISSUE	DESIGN CHANGE	REASON	STATUS
Pedestrian Issue	Extension of radial walkways beyond Columbus Plaza	The radial walkways were extended to provide better pedestrian access, to buffer Columbus Memorial Fountain, and to reinforce the original 'grand entrance' design to Union Station.	Added
Pedestrian Issue	Additional radial walkways beyond Columbus Plaza	Radial walkways were added to provide better pedestrian access and to reinforce radial connectivity to radial streets further extending the original 'grand entrance' design to Union Station.	Added
Pedestrian Issue	A perimeter walkway connecting the radial walkways and guiding pedestrians to crosswalks was moved to about the Massachusetts Avenue curbside	The perimeter walkway was added to provide better pedestrian access between the radial walkways and the crosswalks on Massachusetts Avenue and was moved to about the Massachusetts Avenue curbside as part of the symmetrical redesign.	Added
Pedestrian Issue	ADA accessible ramps at the steps within Columbus Plaza on either side of the Columbus Memorial Fountain	The nature of the marble steps precluded modification of existing materials to accommodate ADA accessible ramps without destroying the physical integrity of the historic elements of Columbus Plaza hardscape; numerous existing ADA accessible routes through Columbus Plaza easily accommodate users.	Deleted
Pedestrian Issue	Enhanced pedestrian access to and from as well as across Columbus Plaza, including additional crosswalks and curb cuts	Enhanced access will satisfy the ADA accessibility requirements and provide adequate accessible routes without destroying the physical integrity of the historic elements of the Columbus Plaza hardscape.	Added
Safety Considerations	Enhanced pedestrian safety throughout project area, including raised crosswalks and special signing at high pedestrian locations	Traffic slowing/calming features for safer pedestrian ingress and egress to Union Station is provided. The curvilinear roadway alignments at the interface of roadway and large pedestrian movements further slow vehicular traffic.	Added
Safety Considerations	Drop off area in front of Thurgood Marshall Building	Safe ingress and egress to the Thurgood Marshall Building is provided without pedestrians crossing the Union Station and parking garage access and service roads.	Added
Safety Considerations	Lighting along curb in front of Union Station; light poles will be aligned compatibly with the Union Station facade; shields in light globes will direct light away from the building facade	Lighting is needed for pedestrian safety at night.	Added
Traffic Issue	Modifications to use of service lanes in front of Union Station, including designated vehicle use	The center service lane will be designated for bus use only to allow better bus access to staging area in garage at the rear of Union Station and access to Massachusetts Avenue. The center lane is also wider than the other service lanes to better accommodate the buses.	Added
Traffic Issue	Modifications to islands at service roads, including breaks to accommodate pedestrians, pavers with granite curbs/liners (pavers will match pavers in extended Columbus Plaza walkways); Depress south curbside of Union Station sidewalk for full width of crosswalk to better accommodate pedestrians with luggage	In consultation with CFA, the pavers were changed to brick.	Deleted

Table 1. DESIGN REVISIONS DISCUSSED DURING AGENCY COORDINATION

ISSUE	DESIGN CHANGE	REASON	STATUS
Traffic Issue	Modifications to islands at service roads, including breaks to accommodate pedestrians, brick with granite curbs/liners (brick will match bricks in extended Columbus Plaza walkways); Depress south curbline of Union Station sidewalk for full width of crosswalk to better accommodate pedestrians with luggage	More efficient pedestrian access to Union Station is provided.	Added
Traffic Issue	Minor shape modifications to traffic islands in Massachusetts Avenue to enhance traffic flow and turning radii.	More efficient traffic flow around Union Station is provided.	Added
Aesthetics and Historic Preservation	Softening of southeast curbline of Columbus Plaza to better reflect relationship of Columbus Plaza with historic Union Station and narrow median island in Massachusetts Avenue	The original semi-circular design as viewed from above is enhanced and the design reinforces the original 'grand entrance' design to Union Station.	Added
Aesthetics and Historic Preservation	Retain existing curb on southeast quadrant of Columbus Circle to maintain physical delineation of Circle of State Flags	The original semi-circular design as viewed from above is enhanced.	Added
Aesthetics and Historic Preservation	Remove one proposed radial walkway on the west portion of the extension area south of Columbus Plaza	The removal of this walkway will disrupt the internal symmetry of the extension of Columbus Plaza and disrupt the radial connectivity to radial streets around Union Station.	Deleted
Aesthetics and Historic Preservation	Reduce the width of the three middle walkways in the extended area south of Columbus Plaza	The reduction in walkway width will further distinguish between the original Columbus Plaza and the new extension.	Deleted
Aesthetics and Historic Preservation	Re-design Columbus Plaza for symmetry	The original semi-circular design as viewed from above is enhanced and the design reinforces the original 'grand entrance' design to Union Station.	Added
Aesthetics and Historic Preservation	Reduce the width of the two radial side walkways in the extended area south of Columbus Plaza	The reduction in walkway width will further distinguish between the original Columbus Plaza walkway design and the new additions in the extension and de-emphasize the two added radial walkways.	Added
Aesthetics and Historic Preservation	Retain the historic width of the three middle walkways in the extended area south of Columbus Plaza	The retention in historic walkway width will continue to enhance the original radial design of the original Columbus Plaza.	
Aesthetics and Historic Preservation	Repair existing Columbus Memorial Fountain mechanical equipment (pumps, plumbing, and electrical systems)	The physical integrity of the Columbus Memorial Fountain is enhanced and protected.	Added
Aesthetics and Historic Preservation	Augment existing lighting of flag poles and central fountain in Columbus Plaza	Key elements of Columbus Plaza are enhanced.	Added
Aesthetics and Historic Preservation	Use of Full Grown Trees in medians of Massachusetts Avenue	Full Grown Trees in the medians will obscure the view from Union Station and Columbus Plaza south to the U.S. Capitol.	Deleted
Aesthetics and Historic Preservation	Use of lower shrubs in median of Massachusetts Avenue	Shrubs in the medians will obscure the view from Union Station and Columbus Plaza south to the U.S. Capitol; shrubs detract from the open space established in the earlier Columbus Plaza configurations.	Deleted

Table 1. DESIGN REVISIONS DISCUSSED DURING AGENCY COORDINATION

ISSUE	DESIGN CHANGE	REASON	STATUS
Aesthetics and Historic Preservation	Use of hardscape in median of Massachusetts Avenue (same paver materials, size[24"x36"], and color [Nitterhouse Masonry Products architectural paving stone color PG-7 or approved similar] as used in the extended walkways)	In consultation with CFA, the pavers were changed to brick.	Deleted
Aesthetics and Historic Preservation	Use of hardscape in median of Massachusetts Avenue (same brick materials and color as used in the extended walkways)	Installation of brick hardscape in the medians will reinforce the original 'grand entrance' design to Union Station and open the viewshed south to the U.S. Capitol.	Added
Aesthetics and Historic Preservation	Reuse of 1976-era square granite decorative blocks in non-pedestrian areas of the median in Massachusetts Avenue	Reuse of existing materials	PENDING
Aesthetics and Historic Preservation	Bench seating and landscaping along southern edge of historic Columbus Plaza curb line	The bench seating and proposed landscaping will disturb and disrupt the radial connectivity of Columbus Plaza with the surrounding radial streets.	Deleted
Aesthetics and Historic Preservation	The existing red brick should be retained and reused within the Columbus Plaza whenever possible. Any new brick within the plaza should match the color, texture, and size of the existing brick and be laid in a herringbone pattern to match existing walkway or linearly to match existing brick edging.	The use of red brick within Columbus Plaza will continue to enhance the original design and further delineate the original Columbus Plaza from the plaza extension.	Added
Aesthetics and Historic Preservation	A paver should be used in the new radial walkways exterior to Columbus Plaza. In comparison to the red brick existing in Columbus Plaza, the exterior pavers should be: of different size; rectangular; laid in a straight-line (rather than herringbone) pattern; lighter in color, but complementary to the red brick and granite steps so that the eye is drawn to Columbus Plaza as the primary focus (Nitterhouse Masonry Products architectural paving stone color PG-7 or approved similar).	In consultation with CFA, the pavers were changed to brick.	Deleted
Aesthetics and Historic Preservation	Brick should be used in the new radial walkways exterior to Columbus Plaza. In comparison to the red brick existing in Columbus Plaza, the exterior brick should be: lighter in color, but complementary to the red brick and granite steps so that the eye is drawn to Columbus Plaza as the primary focus. The brick pattern in the extended walkways will be laid in a herringbone pattern to match the historic walkways or linearly to match historic brick edging.	The use of another distinctive type and style of brick in the radial walkways of the plaza extension is consistent with historic design from 1912-1944 and further delineates the original Columbus Plaza from the plaza extension.	Added

Table 1. DESIGN REVISIONS DISCUSSED DURING AGENCY COORDINATION

ISSUE	DESIGN CHANGE	REASON	STATUS
Aesthetics and Historic Preservation	Re-establish the existing granite curb that delineates the perimeter of Columbus Plaza on the Plaza's south side. The curb will be flush with adjacent paving/grass areas; the new extended walkways will ramp up to Columbus Plaza grade	The original design of Columbus Plaza is enhanced.	Added
Aesthetics and Historic Preservation	Panels between extended walkways south of Columbus Plaza will be turf.	The original design of Columbus Plaza is enhanced.	Added
Aesthetics and Historic Preservation	Cobblestones will be removed from around the side fountains and replaced with brick in accordance with the original design.	The original design of Columbus Plaza will be restored and enhanced.	Added
Aesthetics and Historic Preservation	West crosswalk between Columbus Plaza and Union Station will be moved and relocated between the rostral columns similar to the location of the east crosswalk.	Symmetry of Columbus Plaza is enhanced.	Added
Maintenance	Transfer properties along east side of Columbus Circle to Architect of the Capitol	Property transfer will provide consistent landscaping with adjacent property; transferred area to be landscaped in a manner to retain view sheds of Circle of State Flags.	Added
Maintenance	Pedestrian island near west portico will be paved with concrete colored and scored to match the color and pattern of the new brick.	This island is used for emergency vehicle (e.g., fire trucks and police cars) parking; brick could break under the weight creating additional maintenance issues and an alternate, more durable material should be used instead.	Added
Maintenance	The perimeter walkway will be adjacent to the curb along Massachusetts Avenue with no turf fill.	The proposed turf between the perimeter walkway, radial walkways, and curb on Massachusetts Avenue has been removed to decrease maintenance costs of small strips of turf.	Added
Bicycle Use	Enhanced bicycle circulation at west side of Columbus Circle to accommodate Metropolitan Branch Trail and proposed Bicycle Station	Recreational access will be enhanced.	Added
Bicycle Use	Designation of exclusive bicycle lane on Massachusetts Avenue through Columbus Circle	Recreational access and bicycle safety will be enhanced.	Added

2.3 OTHER ALTERNATIVES CONSIDERED

Other alternatives were initially considered in the *USACS* (PTG 2000) but subsequently removed from further consideration in this EA. These alternatives, Concept A and Concept B-1, are as discussed below.

2.3.1 Concept A

Concept A retained the basic configuration of Columbus Plaza and loaded all traffic exiting onto Massachusetts Avenue via the existing circulation roadway (**Figure 11**). Like original Concept B from the *USACS* (PTG 2000), First Street, NE west of the Union Station would have been reconfigured to force southbound traffic to make a right-turn only at Massachusetts Avenue; other pedestrian circulation improvements and amenities would also have been provided. This concept was removed from further consideration in part because it would have resulted in a more complicated street layout than Concept B for vehicles entering and exiting Columbus Plaza, while not providing a wider median, like Concept B does; in addition, it would not have reduced intersection delays to vehicular traffic.

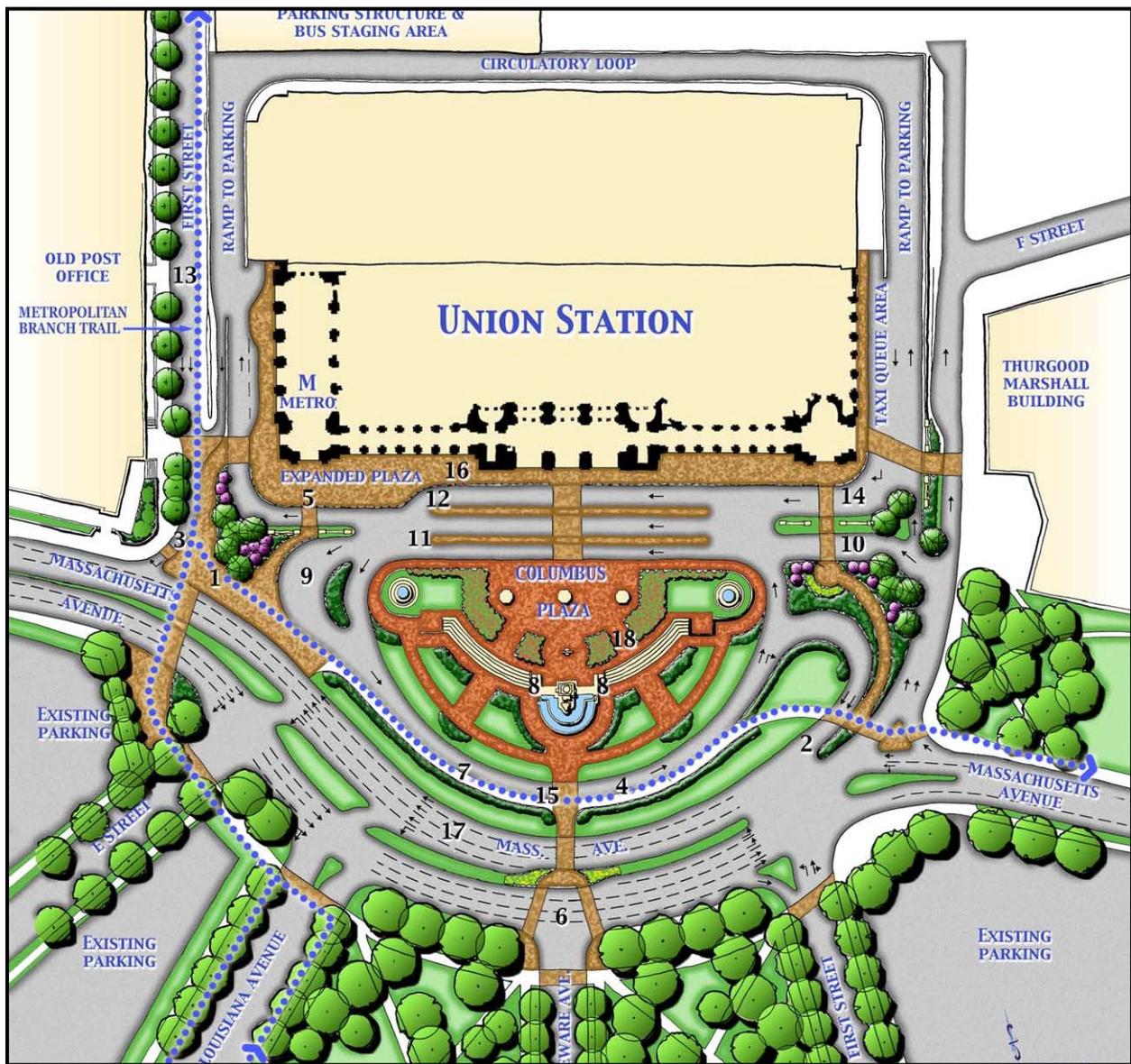


Figure 11. CIRCULATION CONCEPT A, COLUMBUS CIRCLE (PTG 2000)

2.3.2 Concept B-1

Concept B-1 was a modification of Concept B. Originally, Concept B eliminated the interior circulation roadway altogether and provided for a new signalized intersection for traffic exiting Union Station at Massachusetts Avenue opposite E Street (Figure 12). Like Concept A, First Street, NE west of the Union Station would have been reconfigured to force southbound traffic to make a right-turn only at Massachusetts Avenue and other pedestrian circulation improvements and amenities would also have been provided. However, the westbound roadway of Massachusetts Avenue would have been shifted north to provide for a wider median, unlike Concept A. This concept was modified by changing the east ramp to one-way, clockwise from the parking garage to the front of the building to become Concept B-1.

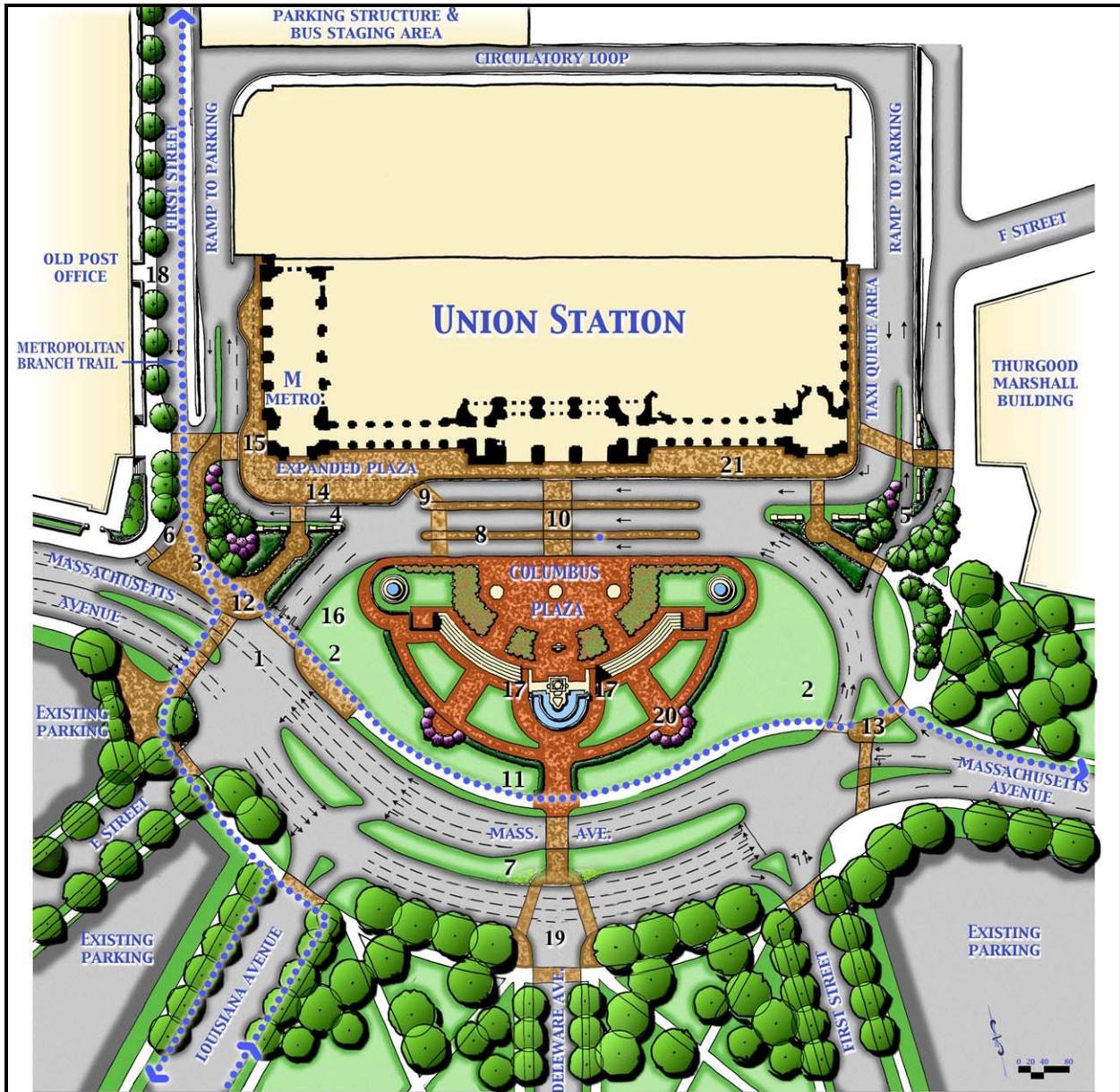


Figure 12. CIRCULATION CONCEPT B, COLUMBUS CIRCLE (PTG 2000)

In addition to the development of circulation options, Concept B-1 included a number of recommendations related to the Union Station parking garage and the implementation of traffic management actions, including:

- Redesign the bus deck to make more efficient use of space for buses
- Conduct a parking space allocation and revenue impact evaluation of the parking changes recommended as a result of implementing the new parking management actions
- Conduct a supply/demand study to determine if Union Station and the area proximate to Union Station can support an expansion of the existing garage
- Work with the District of Columbia Department of Public Works, the Office of Planning, and the City's Office of Economic Development to designate Union Station as one alternative for an intermodal center site within the Capital Gateway Corridor
- Begin preliminary engineering studies for a new 4-level 800-space garage, completing the parking structure over the bus deck
- Create a Transportation Management Office similar to airports to control vehicles stopping in front of the building

This concept was removed from further consideration primarily because of the difficult weaving maneuver for motor coaches between the balustrades at the foot of the east ramp and the middle lane directly in front of Union Station (Lane B).