

3 Transportation Needs Assessment

3.1 Needs Assessment

Needs within the Union Station complex and immediately surrounding areas were identified through an iterative process that involved data collection and technical analysis, as well as coordination with DDOT, technical stakeholders, and the public. After completing an initial survey of the current transportation conditions in the study area (detailed in the next chapter), a series of design charrettes were held in October 2008 to brief the stakeholders on the issues that had been identified in the study of the transportation conditions. Using the input solicited at these charrettes, as well as information provided by stakeholders, a list of needs was defined. These needs correlate to the framework goals and planning principles defined in Chapter 1, as shown in **Table 3-1**, and are described in Chapter 3.2.

Table 3-1 Planning Framework Goals and Identified Needs

Framework Goals	Identified Needs							
	Capacity requirements	Modal connections	Pedestrian connections	Safety and Security	Historic preservation and character	Transit-supportive land use	Circulation	Signage
Maintain and enhance Union Station as a multi-modal transportation hub.	●	●	●			●	●	●
Promote Union Station as a fluid pedestrian environment that supports comprehensive connectivity.	●		●	●	●	●	●	●
Ensure enhanced safety and security.	●	●	●	●			●	●
Respect the architectural, cultural, and regional significance of the historic Station		●	●		●	●		

	= Capacity requirements		= Modal connections		= Pedestrian connections
	= Safety and Security		= Historic preservation and character		= Transit-supportive land use
	= Circulation		= Signage		

3.2 Identified Needs

3.2.1 Capacity Requirements

As Union Station continues to experience increases in passenger demand across all transportation modes, it will also face capacity constraints. As a result, it is necessary to analyze how general space requirements translate into sufficient space to accommodate a mix of standing, waiting, circulating, shopping, and sightseeing. Additional space, both vertically and horizontally, would allow for future flexibility with respect to capacity, as well as safety and security. For instance, the creation of a same level connection between the rail tracks and the Metrorail station (perpendicular to the north/south tracks) would support capacity, as well as safety and security goals. Bottlenecks are a frequent problem during peak hours when pedestrian traffic is heaviest. Adding capacity and alternate routes provides redundancies in routes and the ability to separate pedestrian flows, leading to improved safety and security conditions.

Additionally, rail capacity enhancements will address insufficiencies in the current rail facilities, including platforms, tracks, and other rail-travel-related equipment. If left unaddressed, these insufficiencies will hamper Union Station's ability to accommodate growth projected in future years.



3.2.2 Modal Connections

To support the primary function of Union Station as a transportation hub, connections between travel modes need to be integrated, such that passenger transfer is efficient and effortless. While several modes pass near each other at Union Station, in many cases, the interchanges between these modes can be improved. Further, these modes require facilities and amenities to support future rider demand. For instance, intercity bus services are currently located offsite. However, the creation of an intercity bus terminal within the Union Station complex, complete with ticketing and operational space, would make connections to intercity buses much easier. Similarly, connecting the Metropolitan Branch Trail to Union Station would create a means for cyclists around the region to better access the station's retail as well as the full range of travel modes at the station. Finally, connecting Union Station with an envisioned streetcar service along H Street would allow residents in the neighborhoods northeast of the station to enjoy a more direct connection with the attractions and multiple transit options found in and around the station.

Pedestrian congestion between MARC trains and Metro escalators (left) and Circulator bus departing Union Station parking garage toward the Bikestation and U.S. Capitol (right).



3.2.3 Pedestrian Connections

Because of heavy pedestrian traffic in and around Union Station created by passengers traveling to jobs and appointments in the NoMa and Capitol Hill neighborhoods, improved pedestrian connections are needed in several locations. These pedestrian connections can be made safer by separating pedestrian and vehicular traffic to alleviate conflicts between the two or by providing improved traffic controls to ensure pedestrian right-of-way and safety. Some needed improvements have been incorporated into the planned rehabilitation of Columbus Plaza and Columbus Circle, where distinctive paving will distinguish pedestrian walkways from bike paths and vehicular traffic. Other improvements are recommended to connect the station with proposed facilities on H Street, including the Burnham Place development and the streetcar system that is part of the Great Streets Program and H Street Rehabilitation efforts. Still, many more improved pedestrian connections have been identified and are needed, such as the Train Concourse Connector and improvements on First Street NE.

3.2.4 Safety and Security

Sufficient space; flexibility in the use and design of the space; and the ability to direct, cordon, and separate various uses are all aspects of station safety and security. Due to the prominence of Union Station and its relative accessibility and integration with adjacent land uses (as compared with airports), it is critical that high security standards be developed and maintained. Additionally, an Emergency Evacuation Plan is needed to address all of the above-named design concerns, as modes must allow travelers to access and egress the station efficiently and safely in emergency conditions, as well as during peak passenger flows.

Based on a study that assigned expected demand to designated evacuation networks around Union Station, New York Avenue, H Street, Pennsylvania Avenue SE and I-395 have been recommended for use in the event of an emergency evacuation of the station. These corridors should be addressed in the Emergency Evacuation Plan for vehicular egress of the station and the plan should also identify pedestrian evacuation routes within the station that avoid current bottlenecks and chokepoints.

In the meantime, external security measures have been incorporated into the planned improvements to Columbus Plaza and Columbus Circle including steel-filled bollards along the sidewalk parallel to the south entrance to Union Station.

3.2.5 Historic Character and Preservation

Having been in operation for more than 100 years, Union Station is historically relevant in the transportation network of both the region and nation. Given the station's redevelopment and reinvention over time from rail station to multimodal transportation hub, it is important to preserve as much of the historic building and its characteristic uses as possible. This means maintaining not only the historic structure, but also adjacent parcels, such that current and future growth demands are met while safeguarding the complex as an attractive destination for commuters and tourists alike.

3.2.6 Transit-Supportive Land Use Patterns

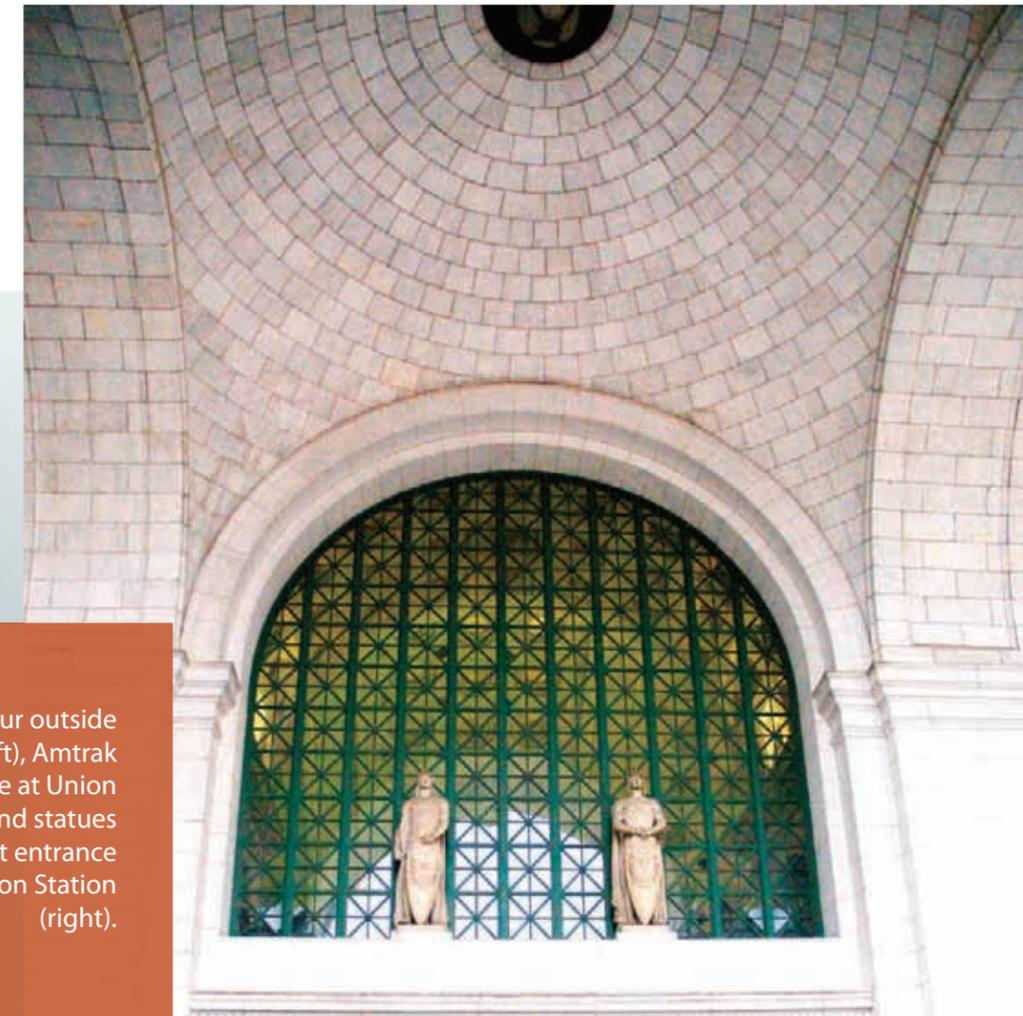
Transit-supportive land use patterns in the study area are necessary to maintain the Union Station complex as a friendly, walkable transportation hub that is part of the surrounding neighborhoods. Dense, clustered development, particularly mixed-use development, would allow improved patronage and utilization of the various transportation modes that characterize Union Station. Development should also support economic development goals both in the city and region, through attraction of local, regional, and tourist business. To help promote and direct transit-supportive land use patterns, guidelines for transit-oriented development in and around multi-modal transit centers should be developed and integrated into future station area planning and development.

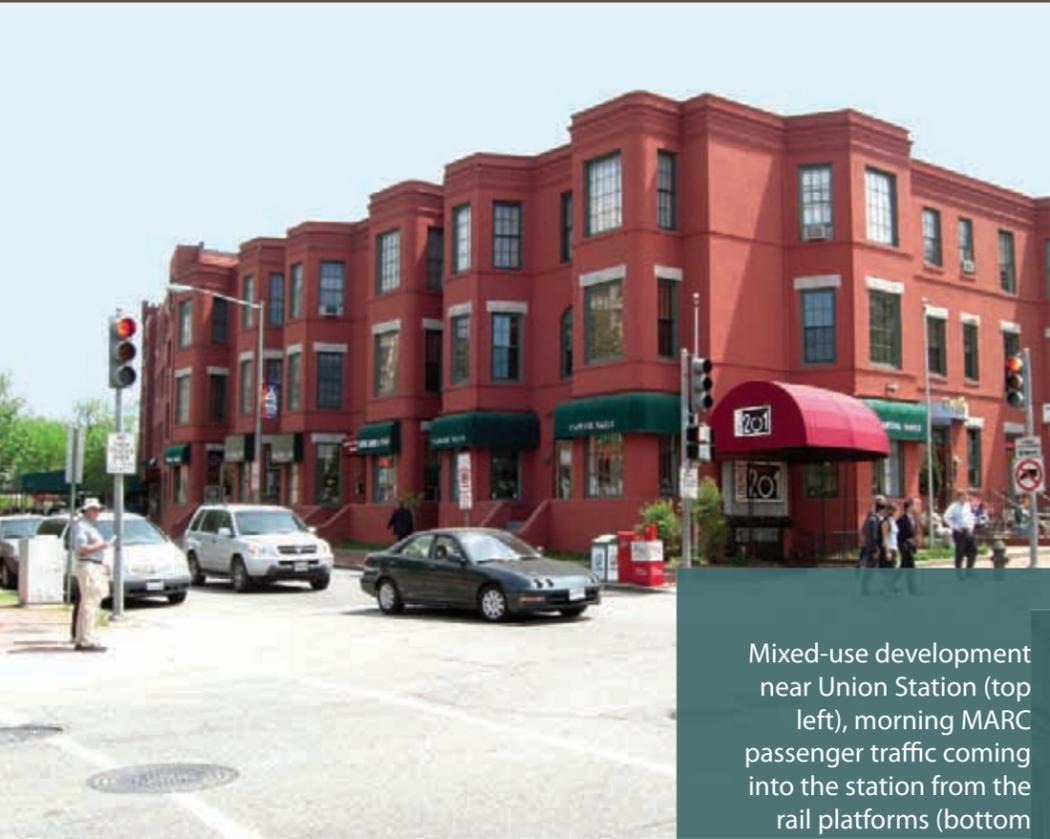
3.2.7 Circulation

Circulation needs directly impact efficient connections. Aspects of this efficiency include directness of routes, adequate signage, sufficient capacity, and separation of travel paths to avoid conflicting movements between pedestrians, bicycles, and motor vehicles. Station users require clearer and more direct circulation patterns to access multiple modes; currently these needs are evident from existing bottlenecks in the station complex. However,



Morning rush hour outside Union Station (left), Amtrak Police presence at Union Station (center) and statues over the front entrance doors at Union Station (right).





Mixed-use development near Union Station (top left), morning MARC passenger traffic coming into the station from the rail platforms (bottom left), and signage at Union Station (right).

improved capacity, pedestrian and modal connections, and a comprehensive signage program, will provide substantial circulation improvements in and around the station.

3.2.8 Signage and Wayfinding

Signage is an integral part of helping promote better circulation by providing direction and orientation to users of all modes of transportation. This is especially necessary at Union Station, as it suffers from limited external and internal directional signs that help visitors navigate through the expansive facility. Successful signage should provide enough information to help users find their way through a given space or system to a chosen destination. For instance, as passengers enter the station from the rail tracks, signage should immediately help orient them to where they are within the station and how to reach a given destination, whether a street, a service within the station, or another mode of transportation. Currently, it is very challenging for passengers to orient themselves to the station as they enter it from the tracks.

