

**NW Corridor Transit Planning
Union Station Existing Conditions
Technical Memorandum
(Physical and Operational
Assessments)**

Executive Summary

**Capitol Region Council of
Governments**

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EXPERIENCE | Transportation

Executive Summary

As part of the initial evaluation efforts associated with Part 2: Union Station Planning portion of the Northwest Corridor: Transit Planning project, this report is the product associated with Task 2.1.1: Physical Assessment of Union Station and Task 2.1.2: Operational Assessment of Union Station. The goals of these tasks were to provide a background about the physical and operating conditions of Union Station for use in further analysis of utilization of Union Station for increased transit operations and as a hub for transit-oriented development.

The on-site assessment of the station was completed over a two day period from Wednesday, July 25th to Thursday, July 26th, 2007 by a team of four specialists from TranSystems:

- Jefferson Reeder, PE: structural components
- William Glassmyer, PE: mechanical components
- David Lin, PE: electrical components
- Bethany Long: operational review and architectural components

The on-site assessment involved a visual inspection only and did not include any non-destructive or destructive inspection techniques. No engineering analysis was performed to determine load carrying capacity of structures, operating efficiencies of equipment / components, or detailed building code analysis / review.

As part of the on-site inspection, informal interviews were conducted with the Greater Hartford Transit District as the building owners and several tenants during the walk-through. In addition, any extant building plans and reports were provided to the assessment team for their use.

The total structure was considered as three main parts: the original Union Station including Great Hall and tenant areas; the Ground Transportation Center; and the Amtrak loading platforms. Union Station and the Ground Transportation Center are owned by the Greater Hartford Transit District (GHTD) and Amtrak owns the loading platforms (trestles) via air rights. Following are the main findings of the analysis:

Access and Circulation

- Access to and through the structures is good and predominantly compliant. An accessible path is provided throughout all structures with the exception to an area on the 2nd floor north wing of Union Station, which is not currently leased. Minor upgrades to the visual and auditory devices should be made on the elevators whenever major improvements are planned. The accessible path between the Great Hall and the Ground Transportation Center could be enhanced with better signage.
- Accessible architectural features are generally compliant but could be improved with a renovation of the Ground Transportation Center waiting area to incorporate accessible counters, seating areas, and fully compliant public phones. One area of concern was with Amtrak's operations on the loading platform which had passengers loading and unloading along an area without the tactile warning strip.
- Stairwells from the Amtrak platform to grade show significant potential for structural deficiency and should be replaced immediately.
- Private bus services vehicles do not pull up to a curb, posing difficulties for access into those vehicles. Re-configuration of the bus bays to allow buses to pull up to the curb may be considered to improve accessibility.
- The existing concrete pavement on Spruce Street is showing significant failures which would be expected from its usage and lifespan. This area will need to be improved and replaced with new concrete. At that

time, the drainage problems in the area should be addressed. It would be advisable to complete a hydraulic analysis of the water and redesign the current trench drain with the pavement replacement to better accommodate significant storm events.

Architectural Components

- Security was good throughout the structure. All access points are observed through CCTV security cameras. The entire structure is protected by sprinkler and fire alarm systems. The security fence to restrict access to the unused western trestle has a gate which should be closed and secured.
- Ticket counters and public phones are not fully ADA compliant, though a wheelchair user can receive service at the counters as well as use one of the public phones.
- An area of major safety concern that needs immediate attention are the emergency egress stairs from the 2nd level Amtrak platform to the ground and the platform itself. These stairs are an integral part of the emergency egress route from the 2nd and 3rd level tenants in Union Station. They demonstrate significant rusting and it is evident that the load carrying capacity has been compromised. On the platforms themselves, there are areas in which a person could step off and fall to the ground below or the roof of the Ground Transportation Center. Several areas have deteriorating wood and need replaced. These repairs are Amtrak's responsibility and the GHTD have made them aware numerous times of the concerns.
- Interior finishes within the Great Hall and tenant areas of Union Station are fair to good. The Ground Transportation Center is dated and a bit worn. Interior renovations would be recommended for improved appearance and increased passenger convenience / comfort. This includes up-dating restrooms.
- Exterior components were overall good. The EPDM roofing over the Great Hall should be inspected for some minor observed cracks and patch repaired as required. Future major improvements may consider the reglazing of the windows in the Great Hall with low-e glass and restoration to operating status to reduce heating and cooling costs. The windows could also be restored to allow them to be opened, reducing the need for cooling during spring and fall seasons.
- The skylights have leaking problems and closer inspection would be required to determine the exact nature of where the flashing was failing. If allowable by historic preservation regulations, replacement of the single slope skylight with a pitched skylight that matches the roof tile clad pitch might also avoid leaking problems.
- The exterior pavement at the bus loading area is showing significant fatigue and should be replaced. At that time, it is recommended to conduct a hydraulic analysis to redesign the drainage system to minimize flooding that currently occurs.

Structural Components

- With a few localized exceptions, Union Station is in good structural condition. The Brownstone walls show only minor deterioration and no major cracking. Steel roof framing appears to be in good condition where accessible for visual review. Staining of some of the concrete roof deck and interior masonry walls indicate some past or current water or moisture penetration. These should be investigated more thoroughly.
- Some deterioration of mortar joints was observed at ground level on the west side of the building, directly under the train platform. Those should be reviewed further and repaired as appropriate.

- The trestle structure supporting the Amtrak platforms and rail lines is in variable condition. Some of the exposed portions exhibit significant rusting to the point where there is the potential for the load carrying capacity to be compromised. Some bracing angles are rusted through or missing. Further inspection and analysis using destructing and non-destructive testing should be undertaken to determine the repairs. This would be an area of Amtrak responsibility, not GHTD. According to GHTD, the City of Hartford's Fire Marshall and Building Inspectors offices have also noted these deficiencies and have notified Amtrak.
- The Ground Transportation Center has significant rusting on the bases of the laced columns supporting the Amtrak trestle and platform above. This appears to be from the pitch pans and roof drains that collect the water from the platform above. Repair should be made to the pitch pans to stop the leaking and associated damage.

Electrical Components

- All major service and distribution equipment appear to be in sound, working condition. Some outdoor conduits are exposed and should be replaced. All temporary wires should be replaced. It is recommended to place a ventilation system within the main electrical room to diffuse the heat generated from the step-down transformer to prolong the life of the electrical equipment.
- The exterior and Great Hall lights are continuously on. It is recommended to install a sensor to have these fixtures only on when light levels require.
- In the future, it may be warranted to consider installation of occupancy sensors, scheduled shut-offs, and multi-level switching in areas to reduce energy costs during any renovation project.

Mechanical Components

- The major HVAC equipment is reaching the end of their natural life cycle and should be replaced. The boilers are currently within the capital grant improvements budget for replacement. The chillers should be considered for replacement within the next grant cycle.
- The installation of BTU meters at the individual terminal devices would allow for the individual metering of tenant spaces. With computer monitoring, a separate usage by tenant could be determined.
- Piping system (steam, hot water, chilled water system) including pipe and duct insulation needs replacement.
- While the water chillers have been operating satisfactorily with normal maintenance and repair, their useful service life has been seen. The units could possible operate for four to eight years. A replacement schedule should be created for this system.
- The water heater is reaching the end of its useful life and should be scheduled for replacement. Much of the piping for all systems is deteriorating and should be anticipated as an on-going maintenance issue. The septic system was reported to sometime clog and it is recommended that it be rodded (cleaned) before any replacement is considered.

Terminal Capacity

- Overall, Union Station offers excellent abilities and the capacity to incorporate increased transportation services.

- It is seen as feasible to incorporate local transit service (CTTransit) on either Union Place or Spruce Street. It may be possible to open up some of the intercity bus stalls; however reconfiguration to a curb style access would be recommended.
- Passenger waiting capacity may be increased through higher utilization of the Great Hall by connecting paging systems or by a reconstruction of the Ground Transportation Center lobby.
- Utilization of space is excellent with the exception of two areas. The un-leased area on the 2nd floor of the north wing could be made available for general lease by incorporating a hallway on the west side through the current area leased by Capital Workforce Partners. Additional space can be gained in the Ground Transportation Center through re-organization of the tenant spaces, especially Amtrak.
- No bicycle facilities currently exist at Union Station and they should be incorporated into any future planning.

Historical Designation Considerations

- Union Station is on the National Register of Historic Places. As such, significant modifications to the exterior appearance, Great Hall, and overall functionality should be avoided. The Ground Transportation Center and any storefront additions are not historic and can be modified as required.
- Any planned improvements should be discussed at the conceptual level with the Connecticut Trust for Historical Preservation to confirm compliance with national and state regulations.



Boston Office
One Cabot Road
Medford, MA 02155
(781) 396-7775
Fax (781) 396-7757