

ALEXANDER ROAD OVER AMTRAK'S NORTHEAST CORRIDOR

ACHIEVING CONSENSUS THROUGH COLLABORATION

Township of West Windsor County of Mercer



Project Location/Description

Alexander Road is located in West Windsor Township, Mercer County, New Jersey. An urban arterial, Alexander Road carried 9,700 vehicles in 2001, and is expected to carry over 12,000 vehicles in 2007. The road serves as one of several routes to the Amtrak/NJTRANSIT Princeton Junction Station via the Alexander Road bridge.



Operational and Geometric Deficiencies

Road

- The existing "T" intersection at Alexander Road and North Post Road has
- substandard geometry, operational deficiencies and safety concerns.
- Substandard roadway curvature exists at the intersection of Wallace Road and Alexander Road.
- Substandard roadway curvature exists along Alexander Road near Old Bear Brook
- Alexander Road and North Post Road have substandard roadway lane widths of 10' with no shoulders.
- There are no sidewalks present throughout the project area.

Bridge

The 20' bridge roadway width does not meet minimum design standards and is classified as functionally obsolete and structurally deficient due to:

- existing substandard deck geometry
- poor overall structural condition
- low load ratings
- substandard vertical and lateral under-clearances
- substandard vertical and horizontal sight distance.

Design Objectives

The public was receptive to the idea of a modern roundabout over other alternatives because it did not increase the roadway's traffic capacity. The Project Team was charged to develop a modern roundabout with:

- Improved roadway horizontal and vertical geometry to meet current design standards.
- Added shoulders on all approaches to the new bridge.
- Wider lanes and/or shoulders for pedestrian and bicycle compatibility.
- Improved horizontal alignment at the North Post Road / Wallace Road intersection.
- Added sidewalk within the project limits.



1. Aerial View of Roundabout



2. Alexander Road to Roundabout



3. Frontage Road - View From East

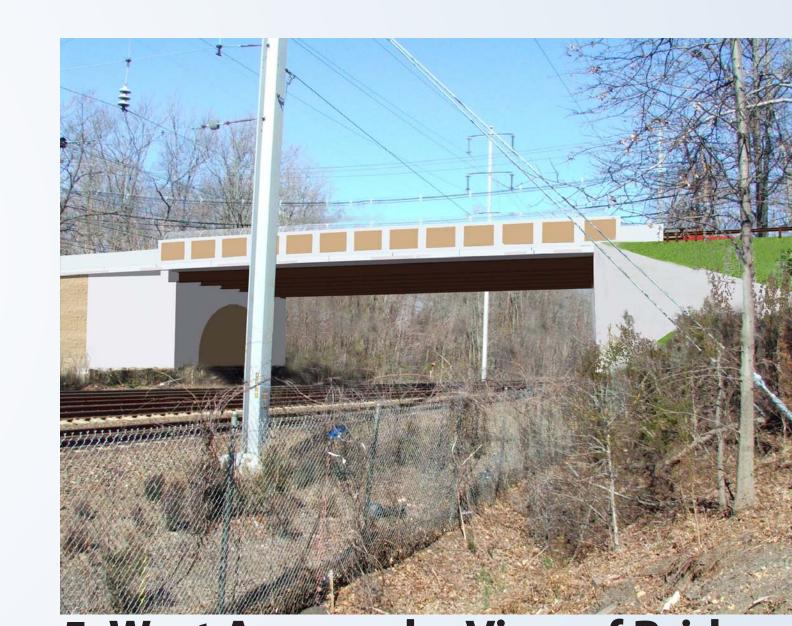


4. View of Retaining Wall

Design Challenge

Design a project that does not independently solve the problem, but balances the solution with other anticipated improvements.

- Design for an improvement to fit the community and the needs of the motorists in the existing condition, not a distant design year.
- The West Windsor Township Master Plan will program additional regional projects to alleviate local traffic congestion.
- Preserve the context of the community setting.



5. West Approach - View of Bridge





Roundabout Detail



Pedestrian Accomodations

Project Approach

educate the community.

- 1. Deliver a consistent message throughout the project. The project, and its objectives, are unique – and need a unique solution.
- Provide regular meetings with internal and external stakeholders to reinforce project objectives and maintain open lines of communication.
- Reinforce message in e-mails and correspondence. • Use West Windsor Township's website to inform and
- Provide education as a key project component: » Safety and operational characteristics of modern
- » How temporary detours will be used
- » Slope impacts vs. use of retaining walls
- » Context Sensitive Design opportunities
- » Traffic Simulation with aaSIDRA "real time"
- » Constructability

2. Facilitate creative solutions with partners.

- Work design solution backwards to alleviate ROW impacts; limited to partial acquisitions/easements affecting 6 parcels
- Secure an early approval of 23'-0" underclearance
- Reach a compromise on the bridge cross section the ultimate traditional section can accommodate provide future capacity if needed, while preserving new sidewalk network.
- Achieve an economical design bridge superstructure reduced from 3-span to single span. A steel superstructure was selected based upon stakeholder input and life cycle cost analysis.

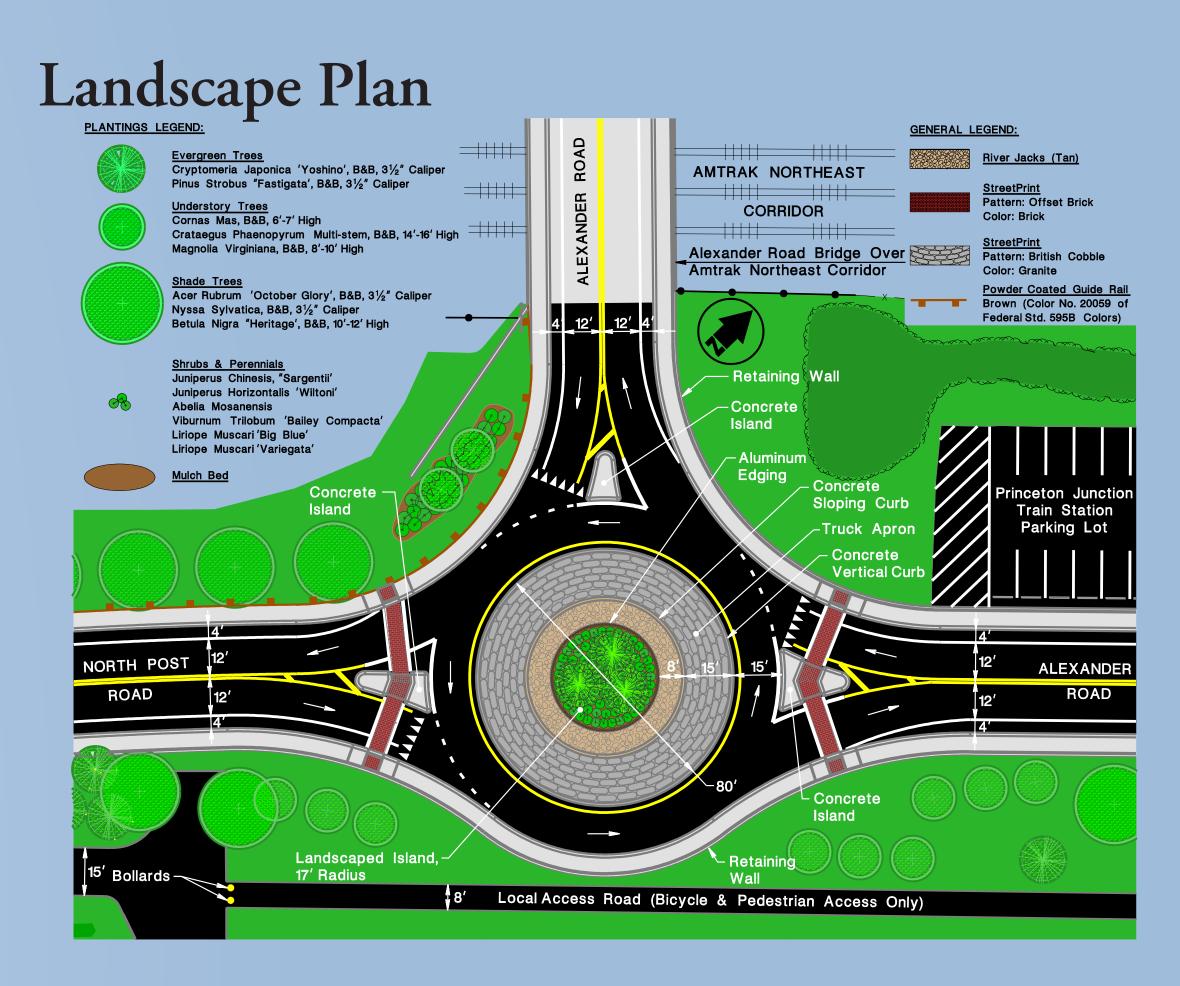
3. Provide design details that matter.

- Use AASHTO Flexible Design Manual minimum requirements – 35 mph design speed.
- Use WB-50 as a design vehicle to discourage attracting additional traffic to area.
- Use retaining walls in lieu of slope construction less impactive to neighbors.
- Use short term detours use Route US 1 to Washington Road (CR 571) as preferred route by West Windsor Township and Mercer County. Other viable routes available.
- Improve parking circulation and capacity despite impact to 28 permit spaces.
- Design two frontage roads for local use only with a walking path – increased driver safety in lieu of excessive grade, provides service turnarounds, and provides separation of commuter traffic from

4. Project is rich in Context Sensitive Design applications.

While NJDOT does not have an open checkbook, maintaining the "town/neighborhood" feeling in the project was important to the community:

- Use decorative/textured concrete or formliners; abutment, wing walls, and parapet; roundabout elements; ornamental fencing; guiderail; plantings
- Use low maintenance landscaping treatments • Face retaining walls with materials to replicate native
- Central NJ stone • Use an interactive tool to select landscaping treatments/
- colors/materials



5. Fine tune communication.

- Use utility work communications as a "dry run" for upcoming detour work
- Conduct detour to replicate Stage 2 of the Alexander Road reconstruction project, with extensive outreach by NJDOT on days when detour is operational: » 9:30 to 3 pm trial period
- » Use Variable Message Boards on US 1 when operational
- » No detour during inclement weather, incidents, excessive queuing times
- » Use specially fabricated NJDOT signs to advertise businesses are open



TEMPORARY DETOUR FROM POINTS NORTH TEMPORARY DETOUR FROM POINTS SOUTH