2040 Long Range Transportation Plan

UVA’s Master Planning Council
October 2nd, 2013

Charlottesville-Albemarle MPO,
MPO Program Manager, Sarah Rhodes
Purpose of 2040 LRTP
Process Overview

1. Develop Goals
2. Establish Performance Measures
3. Identify Transportation Deficiencies
4. Project Scenarios
5. Scenario Analysis
6. Preferred Scenario
7. Non-Capacity Projects
8. Draft Project List
9. Fiscal-Constraint Process
10. Final Project List
# Performance Measures

## Performance Measures: Categories and Descriptions

<table>
<thead>
<tr>
<th><strong>Mobility</strong></th>
<th><strong>Community</strong></th>
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<tbody>
<tr>
<td>Congestion</td>
<td>Land Use</td>
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<tr>
<td></td>
<td>The total percentage of roads that will have a level of service grade E or F in 2040.</td>
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<tr>
<td>Delay</td>
<td>Environmental Justice and Title VI: Transit Access</td>
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<tr>
<td></td>
<td>The total daily hours of delay that congestion will cause in the year 2040.</td>
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<tr>
<td>Mode Share</td>
<td>Environmental Justice and Title VI: Impacts</td>
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<tr>
<td></td>
<td>The percentage of trips across the four main travel modes (auto, transit, bike, and ped) for 2040.</td>
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<tr>
<td>Vehicle Mobility</td>
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<tr>
<td></td>
<td>The total system-wide vehicle miles traveled for 2040.</td>
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<tr>
<td>Vehicle Crashes</td>
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<tr>
<td></td>
<td>The total system-wide crashes for 2040.</td>
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<tr>
<td>Bicycle Connectivity</td>
<td></td>
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<td></td>
<td>The total percentage of bikable roads in the urban area.</td>
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<tr>
<th><strong>Environment</strong></th>
<th><strong>Economic Development</strong></th>
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<tbody>
<tr>
<td>Habitat</td>
<td>Access to Jobs</td>
</tr>
<tr>
<td></td>
<td>The aggregate impact of projects on natural resources and habitats within 500 foot buffer of project.</td>
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<tr>
<td>Air Quality</td>
<td>Transit Accessibility</td>
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<tr>
<td></td>
<td>The percent change in air quality gases and particulates in tons per year.</td>
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<tr>
<td>Water Quality</td>
<td></td>
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<tr>
<td></td>
<td>The percent change in the amount of stormwater pollutants in tons per year.</td>
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<tr>
<td>Flood Plain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The total acreage of flood plain within a 500 foot buffer of the projects.</td>
</tr>
<tr>
<td>Historical/Archeological sites</td>
<td>The total number of historic or archeological sites within a 500 foot buffer of these projects.</td>
</tr>
</tbody>
</table>
# Performance Measures

## Performance Measures: Analysis Tools Usage

<table>
<thead>
<tr>
<th>MPO’s 2040 Travel Demand Model</th>
<th>ArcGIS Mapping Analysis</th>
</tr>
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<tbody>
<tr>
<td>• A series of mathematical models that attempt to simulate travel behavior based on the choices travelers make in response to the system of highways, transit and transportation policies.</td>
<td>• ArcGIS is a mapping program that allowed MPO staff to analyze the scenarios in a variety of ways. Most notably by proximity and connectivity.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>MPO’s Regional Eco-logical Framework Tool</th>
<th>Motor Vehicle Emissions Simulator (MOVES)</th>
</tr>
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<tbody>
<tr>
<td>• A mapping tool, developed by the TJPDC, that allows visual analysis of ecological impacts at a regional scale.</td>
<td>• MOVES is an emissions modeling system that estimates emissions for mobile sources covering a broad range of pollutants.</td>
</tr>
</tbody>
</table>
Scenario Development Process

Scenario Analysis → Project Scenarios

Transportation Deficiencies

Candidate Project List

Cost Estimation Project List

Round 1: Test Round Scenario Analysis

Round 2: Preliminary Round Scenario Analysis

Third Round Scenario Analysis

Preferred Scenario
DRAFT Preferred Scenario

- Berkmar Dr Ext.
- Multimodal US 29
- US 29/250 Widening
  Reevaluating
- Crozet Commuter Route
- I-64/US 29 Interchange
  Reevaluating
- I-64/US 250 Interchange
- US 250 Widening
  Shadwell
- Transit Access 29 Corridor
- Route 10 Transit Options
Next Steps

- Performance measure analysis of DRAFT Preferred Scenario.
- **PUBLIC OUTREACH EVENT:** October 23rd, gather input about DRAFT Preferred Scenario and Non-Capacity Project Lists.
- Work with CHART Citizen Advisory Committee, Planning Commissioners, MPO Technical Committee, and MPO Policy Board to develop final Preferred Scenario and Non-Capacity Project Lists. This will be the DRAFT project list.
- Implement Fiscal-Constraint Analysis.
- **PUBLIC OUTREACH EVENT:** Winter 2014, fiscal-constraint prioritization.
- Work with CHART Citizen Advisory Committee, Planning Commissioners, MPO Technical Committee, and MPO Policy Board to develop Final Fiscally-Constrained Project List.
- Two **PUBLIC HEARINGS** will be held in March and May to review final 2040 LRTP Project List and Report.
Non-Capacity Projects

- Bicycle Connectivity
- Pedestrian Infrastructure
- Bridge Connections
- Intersection Improvements
Questions?

Visit [www.tjpdc.org/lrtp](http://www.tjpdc.org/lrtp) for more information.
MASTER PLANNING COUNCIL

October 2013

Ivy Road Planning Studies
Office of the Architect
Existing & Proposed Program Development
Review uses, facilities condition Index, code issues, existing leases and development of program for each proposed stakeholder/use
Planning Team

Site Information
Analyze opportunities /constraints of land systems, historic preservation/archeology issues, infrastructure systems, transportation, context and leasing structure suitability
Office of the Architect

Plan Alternatives
Alternatives evaluation includes multiple scenarios, site context, feasibility, financing structure, fiscal impact and phasing of uses
Team

Selected Alternative and Final Plan
Office of the Architect

Evaluation Criteria
UVa Siting Criteria
LEED Neighborhood Development
Envision Sustainable Infrastructure ASLA
Sustainable Sites, Living Building Challenge
OAU, FM, EHS, P &T

Planning Process Diagram
• The Brandon-Monroe area is a key asset, providing a 7.5 acre redevelopment opportunity in the heart of Grounds.

• Capitalize on opportunities to engage Brandon-Monroe area as part of the Central Grounds through connections to existing academic, research and housing.

• Recognize the opportunities for a model redevelopment zone to demonstrate UVa’s commitment to sustainability.

• Guidelines ensure the Brandon-Monroe mixed use zone emulates the qualities of Central Grounds and integrates green space.
During the mid-1800s, this area was known as Canada, an African-American community providing a variety of services for the University.

In 2005, in preparation for the Grounds Plan, a 2-day workshop addressed the potential relationship to the Central Grounds.

With the recent acquisitions along Brandon Avenue completed, the University reengaged in the planning process for this area in 2012.

Outline of relationship to Health System Area Plan and the greenbelt opportunities.
The relatively high density and recent University development in this area provides a pedestrian-friendly environment with good access to the Health System and to Grounds.

- **Pedestrians:** The sidewalk and pedestrian path network throughout Central Grounds will be extended to Brandon Avenue.
- **Bicycles:** Bicycles paths and lanes from Central Grounds and along Jefferson Park Avenue (JPA) will be extended with provision of bicycle lanes along Brandon and through the Parkway Street.
- **Transit:** This district is transit-rich with routes provided by both the University Transit System (UTS) and the Charlottesville Area Transit (CAT).
- **Vehicles:** Vehicles will have access along Brandon Avenue and around the Plaza.
- **Parking:** Adequate provision of parking will allow for service and community needs while empathizing a pedestrian priority district.
The Brandon/Monroe area is a ridge sloping down from Brandon Avenue to the east, west and south. The area is an urban environment with green spaces at South Lawn / Monroe pond park

- **The Plaza** will be a distinctive place of identity on the rise of Brandon Avenue – forming a central green /urban plaza
- **The Parkway Street** forms a curvilinear greenway corridor connection for pedestrians, bicycles and vehicles
- **Courtyards** will be integrated into each building developed to provide common green spaces for building uses
- **Green Roofs** will be integrated on buildings for insulation, to harvest stormwater and enhance the views
- **Stormwater** will be managed through the use of green space systems: the parkway street, green roofs on buildings, and the stormwater pond
- **Riparian Buffers** have been established throughout the site area
The concept of mixed use today is analogous to the Jeffersonian idea of the Academical Village - UVA’s historic pattern of development has been to intersperse housing, academic and related uses

- **FAR**: Consistent with the South Lawn complex, this district is planned for a net FAR of .6 to .7
- **Building Height**: Buildings are planned for four floors facing Brandon Avenue/ five floors as the buildings step to the east and west
- **Setbacks**: Minimum setbacks of 25’ along Brandon Avenue to ensure prime sites frame the street – setbacks increase to 55’ around the Plaza
- **Existing Buildings**: Several UVa and private buildings will be retained
- **Street Edges**: Form an active street life with mixed use on the ground floor, building transparency along the street, and provisions for a pedestrian priority streetscape
- **Critical Slopes**: Have been established throughout the site area
BMA will support a range of 400,000 - 500,000 GSF of new construction, envisioned as a mix of academic, residential and related space - further programming will determine the blend.

The site allows for flexible mixing of space. As the illustrations to the left show, space can be mixed vertically or horizontally (or both) to achieve the desired program for the district. This mixture of space will energize the Brandon Monroe area with 24/7 uses, creating a vibrant living/learning and working environment.

The mixture of space will energize the Brandon Monroe area with 24/7 uses, creating a vibrant living/learning and working environment.
Office of the Architect
for the University

GIS Analysis to Develop Suitability

Existing Site Layers
- Existing Forest Canopy
- Slope Condition
- Solar Exposure
- Utility Easements
- Building Footprints

Guideline Layers
- Riparian Buffer (30')
- Critical Slope Buffer (>25%)
- Building Setback (30')
- Circulation

Proximity Layers (100-foot Intervals)
- Distance to Internal Roads
- Distance to Electric Lines
- Distance to Gas Lines
- Distance to Sanitary Lines
- Distance to Water Lines
Suitability Analysis
Suitability Analysis

Development Suitability | Acreage | GSF @ .35 FAR
(Typical GAC @ .2)
---|---|---
No Development | 7.8 | 0
Less Suitable | 0.7 | 0
Moderately Suitable | 8.4 | 127,129
Highly Suitable | 6.1 | 93,329
Total | 23.0 | 
Suitable Total | 14.5 | 220,458
Ivy Corridor Site Constraints