Beechurst Avenue Corridor Study

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Project Introduction

Existing Conditions and Proposed Alternatives

VISSIM Model
Project Site. Transportation Network
WV DOH Beechurst Ave Study (2003)
Falling Run and Beechurst Ave Connection Study

WV 705 Connector – Falling Run Corridor – Beechurst Avenue
Detailed Traffic Operations Analysis

May 14, 2008
Project Site
Project Site. Land Use
Project Site. Traffic Volume (AADT)

- EB:
  - 22,788
  - 7,265
  - 20,361
  - 19,281
  - 23,150
  - 22,810

- WB:
  - 0
  - 20
  - 40
  - 60
  - 80
  - 100

- SB:
  - 0
  - 100
  - 200
  - 300
  - 400

- NB:
  - 0
  - 10
  - 20
  - 30
  - 40
  - 50
  - 60
  - 70
  - 80
  - 90
  - 100
## Project Site: Crash

### Crash Types by Intersections

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<th>Intersection</th>
<th>Total Crashes</th>
<th>Crash Rates</th>
<th>Number of Injury</th>
<th>Injury Rate</th>
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- **Head On**
- **Angle (Front to Side) Opp. Direction**
- **Rear End**
- **Right Angle**
- **Sideswipe, Same Direction**
- **Sideswipe, Opposite Direction**
- **Single Vehicle Crash**
- **Other**
Project Site. Pedestrian & Transit
Project Site. Land Use

Beechurst Ave Corridor Study
Existing Land Use and Zoning Map

Beechurst Ave Corridor Study
Existing Land Use Activity Map
Project Site. Past Planning Effort
Project Site. Past Planning Effort

Beechurst Ave Corridor Study
Review of Past Planning Efforts

- MMMPO Metropolitan Transportation Plan (2013)
  - Focus on improving connectivity and accessibility
  - Improve transportation networks
  - Enhance economic development opportunities
  - Enhance public transit service

- University Ave Complete Street Study (2015)
  - Enhance safety and connectivity
  - Improve pedestrian and bicycle facilities

- Beechurst Ave Improvement Study (2005)
  - Improve drainage and stormwater management
  - Enhance traffic safety

- Sunnyvale Up Comprehensive Plan (2008)
  - Enhance connectivity and accessibility
  - Improve pedestrian and bicycle facilities

  - Improve safety and connectivity
  - Enhance pedestrian facilities

- Sunnyvale Brownfields Redevelopment Plan (2017)
  - Improve safety and connectivity
  - Enhance economic development opportunities

- City of Morgantown Comprehensive Plan (2012)
  - Focus on improving connectivity and accessibility
  - Enhance pedestrian and bicycle facilities

- Morgantown Paved Pathway Study (1998)
  - Enhance pedestrian and bicycle facilities

- Midland Avenue Complete Street Study (1998)
  - Enhance safety and connectivity

- Beckley Avenue Complete Street Study (1998)
  - Enhance safety and connectivity

- Cranesville Road Complete Street Study (1998)
  - Enhance safety and connectivity

- Kanawha Boulevard Complete Street Study (1998)
  - Enhance safety and connectivity

CITY OF MORGANTOWN
U.S. EPA BROWNFIELDS ASSESSMENT PROJECT
Sunnyvale Neighborhood Brownfields Area Redevelopment Plan

May 2017
Project Site. Existing Operation
Project Site. Existing Lane Configuration
Key Issue

Corridor Capacity
• Northbound through movement
• Intersection configuration

Multi-model Transport
• Trail connection
• Transit and pedestrian facility
• PRT Station Transfer

Land Use
• Infill/Redevelopment
• Neighborhood Development
• University Development
Alternative Development

- Segment Alternatives
- Intersection Alternatives
- Scenarios
Alternative Development, Segment
Alternative Development, Segment
Alternative Development, Intersection
Alternative Development, Intersection
Alternative Development, Intersection

- Provide crosswalk at current frequent jay-walk location
- Prohibit vehicle traffic on bidirectional
- Two NB through lanes
- Potential Pedestrian Plaza
- Traffic signal coordination

- Improved "T" Intersection at Wiley
- Brick Crosswalks

- Potential Pedestrian Plaza
Alternative Development, Intersection
Alternative Development, Scenarios

Scenario I, Minimum Impact

Scenario II, Minimum Impact + Intersection Improvements

Scenario III, ROW Impact + Intersection Improvements

Scenario IV, ROW Impact + Significant Intersection Improvements

Scenario V, 4 lanes-3 lanes Mix + Intersection Improvements
Scenario I, Minimum Impact

No left-turn when opposing traffic is on green
Scenario II, Minimum Impact + Intersection Improvements
Scenario III, ROW Impact + Intersection Improvements

1. Pleasant St
2. Fayette St
3. Foundry St
Scenario IV, ROW Impact + Significant Intersection Improvements

1. Pleasant St
2. Fayette St
3. Foundry St
4. 8th St
5. 6th St
6. 3rd St
Scenario V, 4 lanes-3 lanes mix + Intersection Improvements

1. 

2. 

3. 

Campus Dr

Fayette St

Pleasant St

Foundry St
What is VISSIM?

- VISSIM is a microscopic, time step, and behavior based traffic simulation computer program

- VISSIM models urban traffic and public transit operations

- VISSIM can analyze traffic (cars, trucks, pedestrians) and transit (buses, trains, trams) operations under constraints such as lane configuration, traffic composition, traffic signals, transit stops, etc.
VISSIM Microsimulation Applications

- Junction Geometry
  - Signal control
  - Traffic-actuated signal control
  - Multimodality

- Multimodal Systems
- Motorway Traffic
- Active Traffic Management
- Public Transport
  - Distribution-based dwell time
  - Public transport priority

- Emissions Modelling
- Mesoscopic and Hybrid Simulation
- Virtual testing of autonomous vehicles
**Beechurst Ave Study** - Existing & Future Scenarios

**Existing Condition**
- Morning Peak network development
  - Geometric data - used Google Maps and field data
  - Volume data - MMMPO provided
  - Speed, travel time data, signal timing - MMMPO provided
- Evening Peak

**Future Scenarios**
- Scenarios - *(1)* to *(6)*
Simulation Procedure

1) **Model Development**
2) **Initial System Evaluation**
3) **Model Calibration**
   - System Calibration
   - Operational Calibration
4) **Model Evaluation**
5) **Model Validation**
Morning Peak Simulation Run
Comparison between *Existing* scenario & *Proposed Improvement* scenarios

**Performance Measurers**

- Corridor Travel time
- Corridor Delay
- Queue length at intersection approaches
Questions?

Thank You!

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