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Project Decision Tree Example

PALM BEACH COUNTY LOCAL ROAD SAFETY PLAN DEVELOPMENT

Rural Segment
Palm Beach County Route 717 (Muck City Road)
Observed Severe Injury Hotspot
Site Overview

Aerial View of CR-717 with three fatal crashes located.
Image Courtesy of Google Earth, accessed 10/29/2018
Site Overview

- 3 Fatal Crashes (2011-2014)
  - All single vehicle, roadway departure
  - No other severe crashes along corridor
- No grade or curvature present
- AADT 3,172 ([Palm Beach County, 2016](#))
- Site is 2 lanes with no shoulders
- Approximately 5.6 miles long
Rural Segment Decision Tree

Clear Zone or Roadside Hazards?

**YES**
- Clear Zone, Roadside Hardware, Roadside Design Improvements

**NO**
- History of Severe Crashes Along Curves?
  
  **YES**
  - History of Severe Head On Crashes?
    - **YES**
      - Multilane Divided; Edge/Shoulder Rumbles; AND/OR Shoulder Treatments
    - **NO**
      - Noise Sensitive?
        - **NO**
          - Traffic Volume
            - **>15,000 vpd**
              - Yes – Includes Wet Weather Crashes
            - **1,000 - 15,000 vpd**
              - Pavement Texturing (Grooving/Tining, Overlay/High Friction Surface Treatment)
            - **<1,000 vpd**
              - Chevrons/Delineation; Advanced Warning and Speed Advisory; Lighting
        - **YES**
          - Paved Shoulder?
            - **YES**
              - Enhanced 6” or 8” Edgelines
            - **NO**
              - Thermoplastic Edgeline AND Shoulder Treatments; + Thermoplastic Centerline Markings

  
  **NO**
  - Traffic Volume
    - **>15,000 vpd**
      - Yes – Includes Wet Weather Crashes
    - **1,000 - 15,000 vpd**
      - Pavement Texturing (Grooving/Tining, Overlay/High Friction Surface Treatment)
    - **<1,000 vpd**
      - Chevrons/Delineation; Advanced Warning and Speed Advisory; Lighting
  
  **History of Severe Crashes Along Curves?**

  **YES**
  - History of Severe Head On Crashes?
    - **YES**
      - Multilane Divided; Edge/Shoulder Rumbles; AND/OR Shoulder Treatments
    - **NO**
      - Noise Sensitive?
        - **YES**
          - Pave 2 ft + Edge/Shoulder Rumbles AND/OR Shoulder Treatments; + Centerline Rumbles
        - **NO**
          - Thermoplastic Edgeline AND Shoulder Treatments; + Thermoplastic Centerline Markings

  **NO**
  - Traffic Volume
    - **>15,000 vpd**
      - Yes – Includes Wet Weather Crashes
    - **1,000 - 15,000 vpd**
      - Pavement Texturing (Grooving/Tining, Overlay/High Friction Surface Treatment)
    - **<1,000 vpd**
      - Chevrons/Delineation; Advanced Warning and Speed Advisory; Lighting
  
  **Paved Shoulder?**

  **YES**
  - Enhanced 6” or 8” Edgelines
  
  **NO**
  - Thermoplastic Edgeline AND Shoulder Treatments; + Thermoplastic Centerline Markings

Project Decision Tree Example
Rural Segment
Route 717 (Muck City Road)
Step 1 – Clear Zone/Roadside Hazards

- Shoulders have gentle slope
- Fixed objects, like telephone poles, are set back from the roadway ~25’
- No barriers or equipment in clear zone
- Clear zone, roadside hardware, and roadside design improvements are NOT recommended at this site

Typical view of CR-717. Image Courtesy of Google Street View, accessed 10/29/2018
Step 2 – Severe Crashes Along Curves

- **History of Severe Crashes Along Curves?**
  - **YES** – Includes Wet Weather Crashes
  - **NO** – Does Not Include Wet Weather Crashes

  - **Pavement Texturing** (Grooving/Tining, Overlay/High Friction Surface Treatment)
    - **YES** – Does Not Include Wet Weather Crashes
    - **NO** – Includes Wet Weather Crashes

  - **Chevrons/Delineation; Advanced Warning and Speed Advisory; Lighting**

**Project Decision Tree Example**
- **Rural Segment Route 717 (Muck City Road)**

- **There are no curves along the route. Therefore, there are no severe crashes along curves.**

- **Pavement texturing, chevrons/delineations, advanced warning and speed advisory signs, and lighting are NOT recommended for this site.**
Steps 3 and 4 – Traffic and Noise Considerations

- Traffic Volume
  - >15,000 vpd
  - 1,000 - 15,000 vpd
  - <1,000 vpd

- Noise Sensitive?
  - YES
  - NO

- Thermoplastic Edgeline AND Shoulder Treatments; + Thermoplastic Centerline Markings

- Most recent traffic volume for the section was approx. 3,100 vpd—the middle path will be followed.
- The western end of the corridor is close to residential properties which may be sensitive to noise. Otherwise, noise is not an issue.
- Recommend NOT pursuing noise-sensitive applications. The majority of the corridor is not a noise-sensitive location and installing pavement markings that vary along the corridor could cause confusion.
- Also, there is currently no shoulder to improve, which is addressed further down the “NO” branch.

Aerial View of residences along CR-717 at State Market Road. Image Courtesy of Google Earth, accessed 10/29/2018
Steps 5 – Shoulder Presence

- There is no shoulder along the corridor.
- **Recommend to install paved 2-foot shoulder with edge/shoulder rumble strips.**

**Recommend to install centerline rumble strips**
- Requires repainting of centerline to acceptable standards

Final Recommendations

- The final recommendation is the installation of a 2-foot paved shoulder on both sides of the roadway with shoulder and centerline rumble strips.

- Approximate project cost = $330,400
  - Shoulder rumble strips $6,000 per mile x 5.6 miles = $33,600
  - Centerline rumble strips (with restriping) $4,000 per mile x 5.6 miles = $22,400
  - 2 foot paved shoulder (both sides) $49,000 per mile x 5.6 miles = $274,400