SYSTEMIC SAFETY IMPROVEMENTS

Projects being done along County Routes in Cumberland County

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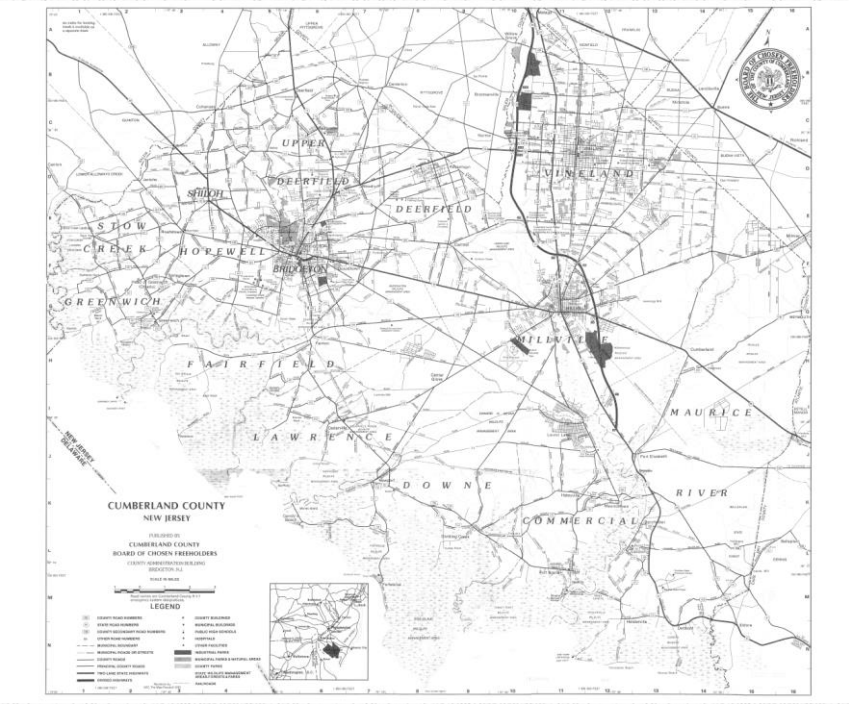
Cumberland County Engineering Department

Engineering office with:

- Staff of 7
  (5 full-time; 2 part-time)
- Managing infrastructure including:
  - 540 miles of County Roads
  - 50 traffic signals and 19 flashers
  - 54 bridges and 169 minor bridges
  - Provide assistance to remaining Public Works divisions (Roads, Mosquito Control, Traffic Safety) on an as-needed basis



The department's annual construction budget has averaged $8 million per year, but with the reauthorization of the Transportation Trust Fund, it has increased to $12.5 million annually:

about $9.3 million, State Aid
about $2.2 million, Federal Aid
about $1 million, County bonds

In addition, the county receives additional funding (HSIP, CMAQ, LAIF) on an individual project basis.

Highway Safety Improvement Program (HSIP)

- HSIP is a core Federal-Aid program with the purpose to achieve a significant reduction in highway fatalities and serious injuries on all public roads and requires a data-driven, strategic approach to improving highway safety with a focus on performance.

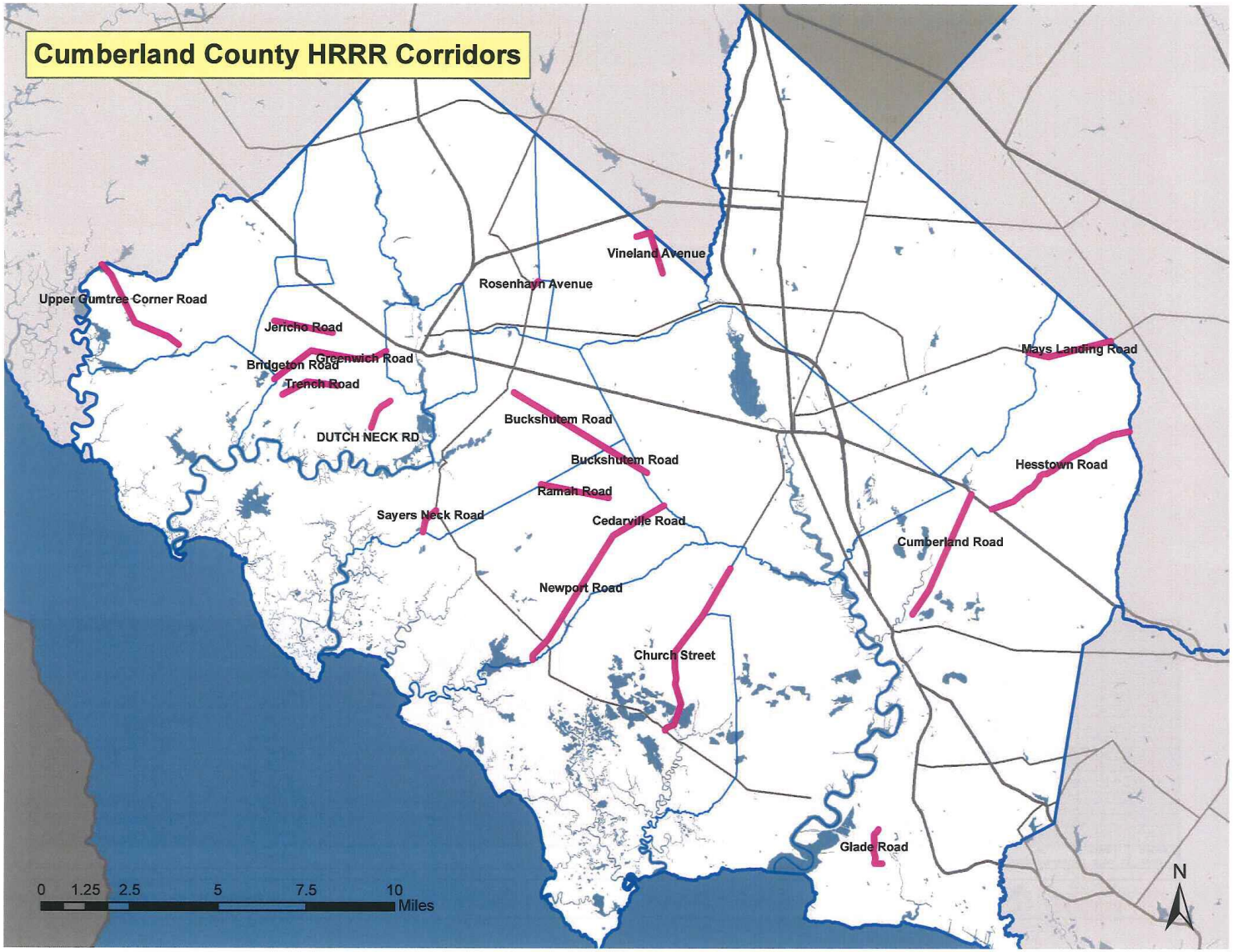
- Cumberland County's approach to HSIP is to focus on both "hot-spot" and systemic projects:
  - The "hot-spot" projects require more in-depth data collection and analysis to determine appropriate site specific improvements related to the crash history.
  - The systemic projects apply a given improvement type over a large number of applicable locations to counteract more "random" crash events.

The Systemic Approach
Starting from Scratch – Network Screening Lists

- The network screening lists shown below were provided to Cumberland County – these took crash information for a given timeframe and determined weighted "scores" for each location based on a number and severity of crashes:
  - Pedestrian intersection hot spots.
  - Pedestrian corridor hot spots.
  - Intersections hot spots.
  - High Risk Rural Roads (HRRR) hot spots.

  - Roadways Eligible for Centerline Rumble Strips

Cumberland County HRRR Locations



FHWA Proven Safety Countermeasures

- Roundabouts
- Corridor Access Management
- Backplates with Retroreflective Borders
- Road Diet
- Medians and Pedestrian Crossing Islands in Urban & Suburban Areas
- Pedestrian Hybrid Beacon
- Longitudinal Rumble Strips and Stripes on Two-Lane Roads
- Safety Edge SM
- Enhanced Delineation and Friction for Horizontal Curves

Centerline Rumble Strips

- NJDOT criteria
  - Twenty (20) foot minimum pavement width.
  - Speed Limit of 35 miles per hour or greater.
  - Two-lane Urban or Rural Roadways.
- Cumberland County criteria
  - “New” asphalt roadways (10 years old or less).
  - Limit installation areas due to residential density.

❑ Approximately 150 miles selected across eleven municipalities.

Actual Construction and After

- Night time construction
  - Less Traffic to impact
  - Safer for construction workers & inspectors
  - Short duration – several miles constructed nightly
- Lessons Learned
  - Age of existing asphalt
  - Seal Coating
  - Complaints / Questions:
    - ✓ Residential - Noise
    - ✓ Roadway Users
    - ✓ Centerline versus white line
    - ✓ Why?

High Friction Surface Treatment (HFST)

- Pros:
  - Proven Safety Measure
  - Safe for all Vehicle Types
  - Durability
- Cons:
  - High Unit Cost
  - Specialized Trade
    - Currently no contractors located within the region installing
    - Improper installation limits usefulness and life expectancy

Current Application – HFST at Curves

- Installation of High Friction Aggregate on Existing Asphalt Surface with Epoxy Binder:
  - Greatly increases the Friction between Roadway Surface and Vehicle Tires.
  - Durable – life expectancy equal to or exceeding the asphalt pavement itself.
- As part of the project, update and upgrade existing safety features:
  - Review signage at each site and update as needed:
    - Retroreflectivity
    - Size
    - Location
    - Spacing

Selecting the Locations

- HRRR Screening List
- Other Locations “Known” to Engineering Department
  - Crash History
  - Municipalities
  - Residents
  - Geometry
- Existing or Proposed Pavement Condition
  - Only as durable as the asphalt it is placed on.
  - Similar to rumble strips, only “recent” pavement locations selected.
- Original 28 locations has been expanded to 39 locations in final application (18 HRRR; 21 non-HRRR)

Ongoing Topics for Discussion

- Network Screening Lists
  - Aging of Data (current list: 2011 through 2013)
  - Completed project locations still on Current List
- Project Delivery
  - Timeline from application to construction substantial:
    - ✓ Rumble Strips – 22 months from application submission to construction Notice to Proceed.
    - ✓ HFST – 16 months so far…
    - ✓ This extended period limits flexibility to update the construction to latest information (seal coating).
  - Centralized review process eliminates interactions with the Local Public Agency – the entity not only selecting the project locations, but having the most detailed knowledge of them.
- Separate HRRR & non-HRR projects

Discussion / Questions?

Thanks:

- Cumberland County Board of Chosen Freeholders
- Federal Highway Administration
- New Jersey Department of Transportation
- South Jersey Transportation Planning Organization

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