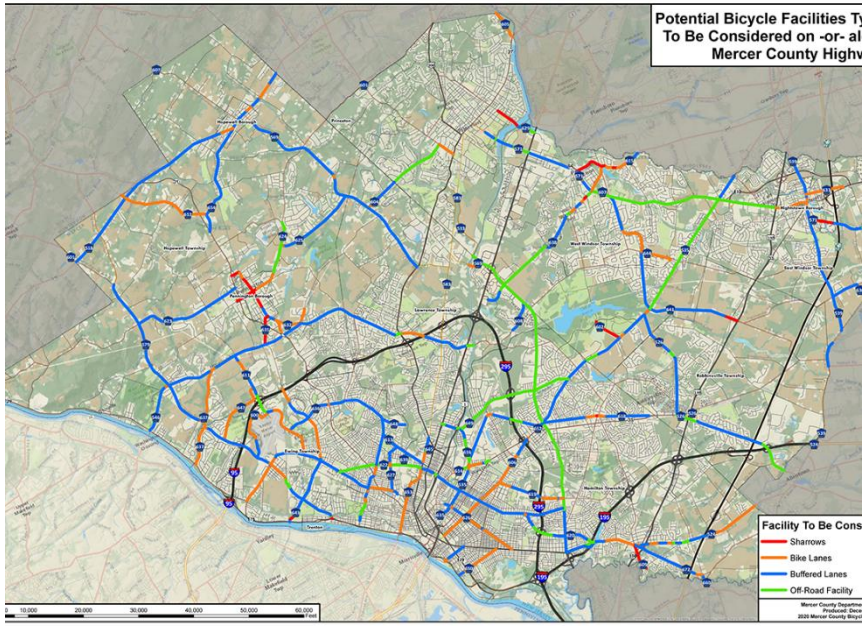
Bicycle-Friendly Resurfacing in Mercer County

OVERVIEW OF INNOVATION

Mercer County's Bicycle Friendly Resurfacing Program integrates bicycle facilities into resurfacing projects and ensures that bicycle facilities are considered during routine road maintenance, reconstruction, construction, and land development reviews to create a network in alignment with the County's Complete Streets Policy.

The Mercer County Bicycle Master Plan describes factors for analysis of County Roads such as cartway width, environmental constraints, crashes records involving bicycles, network connectivity, Level of Traffic Stress (LTS), Annual Average Daily Traffic, truck volumes, existing bus routes, existing and proposed speed limits, bicycle travel demand modeling and 8-80 Design.

Some routes require simple striping and others will require more intensive work such as road widening or intersection redesign that may involve drainage or right-of-way issues for example. The County prioritizes roadways that are in need of repaving, and only need additions of epoxy paint or thermoplastic and signage to define the bicycle facility, and continues to plan for more complicated segments.



Source: Mercer County 2020 Bicycle Master Plan

BENEFITS

Bicycle infrastructure is integrated into the repaving program to conduct all work at one time which increases efficiency and cost savings.

The addition of bicycle infrastructure increases safety for all road users.

The integration of bicycle facilities into resurfacing projects advances a multimodal network in alignment with the County's Complete Streets Policy.

FIND OUT MORE . . .

2020 Mercer County Bicycle Plan Element
http://www.mercercounty.org/departments/planning/2019-bicycle-master-plan

NJ STIC Innovation Spotlight: Bicycle-Friendly Resurfacing Program
https://www.njdottechtransfer.net/bike-friendly-resurfacing

FHWA's Incorporating On-Road Bicycle Networks into Resurfacing Projects
https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/resurfacing/

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Safety, Planning, Pavement, Maintenance

EXAMPLE - Collaborative Hydraulics: Advancing to the Next Generation of Engineering (CHANGE)

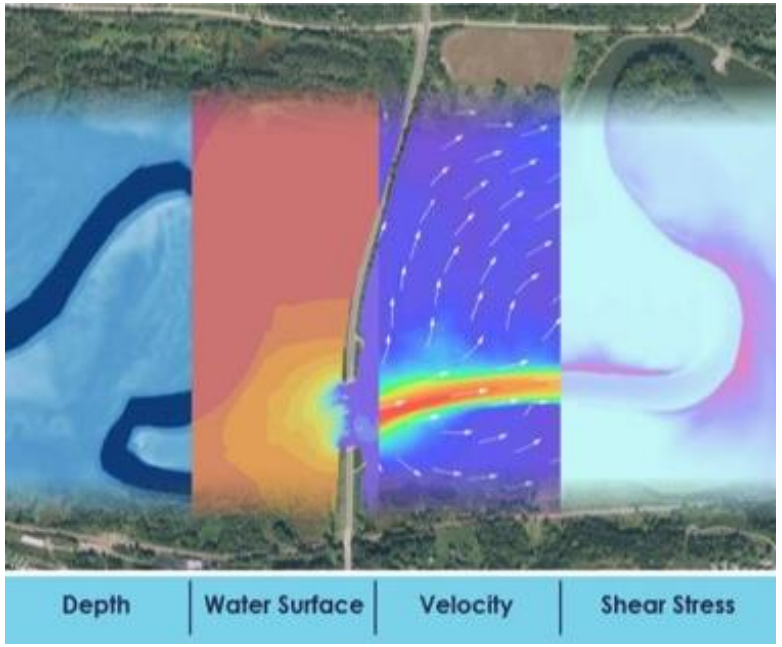
OVERVIEW OF INNOVATION

Next-generation hydraulic tools improve the understanding of complex interactions between river or coastal environments and transportation assets, enabling better design, enhanced communication, and more efficient project delivery.

Two-dimensional (2D) hydraulic modeling software, graphical interfaces, and supporting resources are now available that can be applied to infrastructure design to improve understanding of the complex interactions between river or coastal environments and transportation assets. Recent advances in computer hardware, modeling software, Geographic Information Systems, and survey practices have made 2D modeling very efficient, intuitive, and accessible to engineers and designers.

Because 2D models avoid many of the limiting assumptions required by 1D models, the results can significantly improve the ability of highway agencies to design safer, more cost-effective, and resilient structures on waterways.

In addition, the 3D visualization capabilities of these modeling tools aid in communicating design results and implications to a variety of stakeholders through intuitive and visually rich graphical output.



Source: FHWA

BENEFITS

The benefits of using CHANGE include Improved Quality and Resiliency, Enhanced Collaboration, and Streamlined Delivery.

In the past 3 years, the Colorado DOT saved more than $14 million using 2D hydraulic modeling to develop more detailed analyses of bridges, culverts, and roadways than with 1D modeling.

FIND OUT MORE . . .

CHANGE Website
https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/change2.cfm

FHWA Hydraulics Website
https://www.fhwa.dot.gov/engineering/hydraulics/

Colorado DOT Video https://youtu.be/C-_c8UTpbSo

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Process, Hydraulics