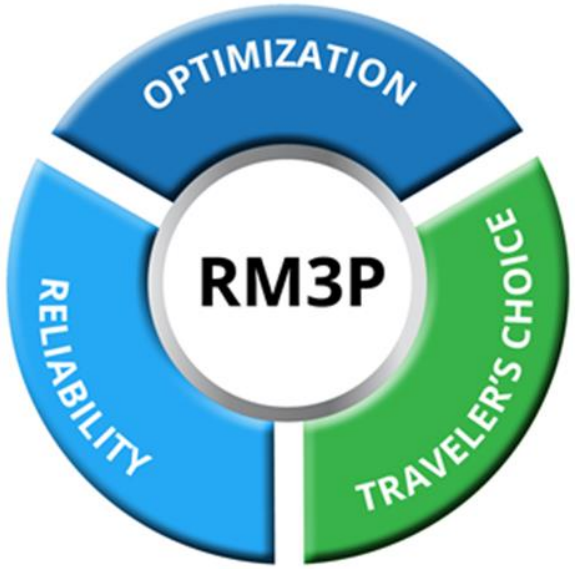
Travel Decisions Powered by Data

Artificial Intelligence-Based Decision Support Coming to Northern Virginia

Regional Multi-Modal Mobility Program



Regional Multi-Modal Mobility Program

OUTLINE

- RM3P Overview
- AI-Based DSS
- A Cohesive TSMO
- RM3P Summary

RM3P Overview

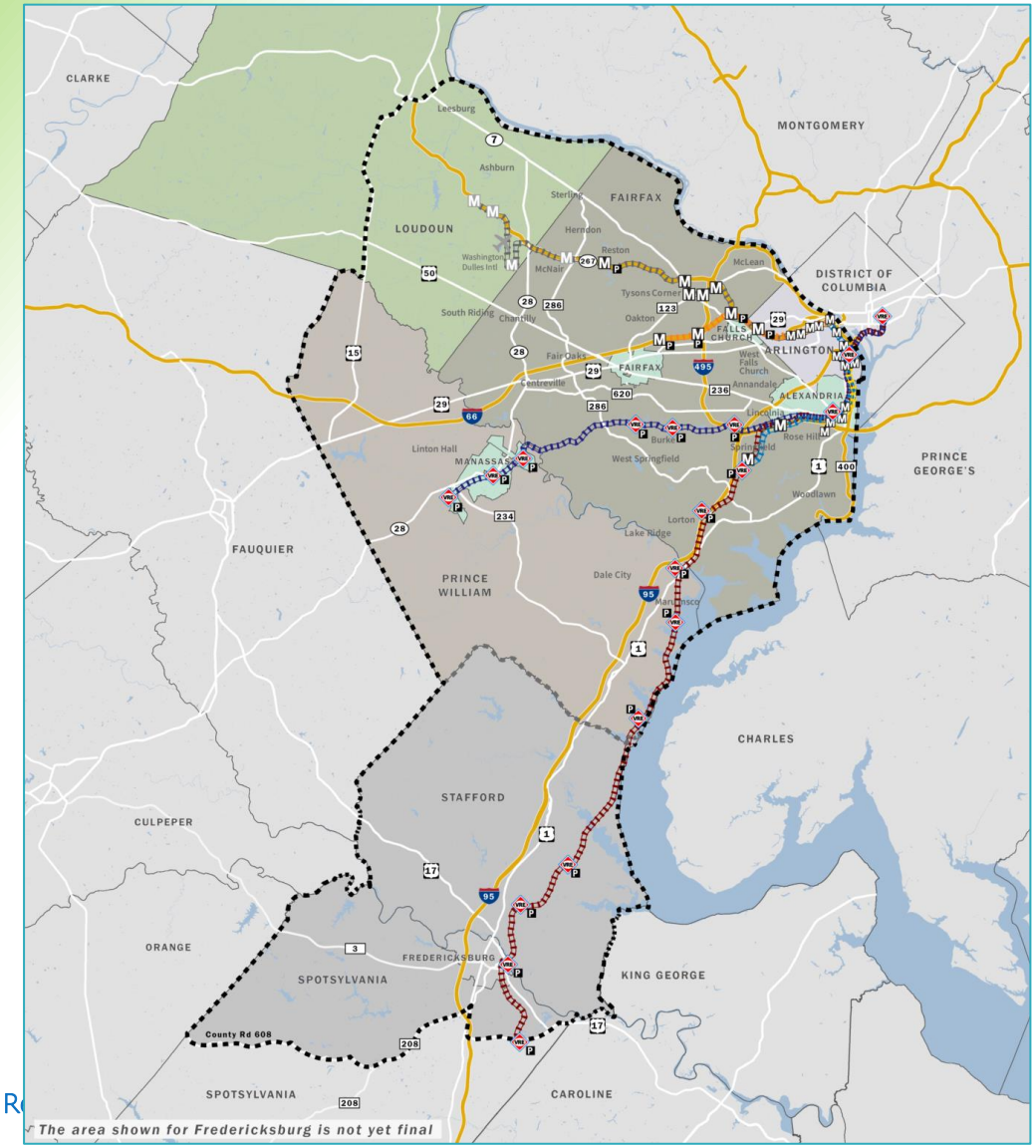
RM3P's Mission is to leverage the collaborative use of real-time data to improve travel safety, reliability, and mobility; as well as to give the public effective tools to make better informed travel choices.

Regional ICM

- Builds on prior VDOT studies on ICM.
- The Northern Virginia Transportation Authority (NVTA), responsible for project planning and funding in Northern Virginia, identified ICM as key to meeting the vision of *TransAction,* its long-range strategic plan.
- NVTA and VDOT jointly developed a plan/approach for RM3P and obtained Innovation Funding.*
- RM3P is led by VDOT, NVTA, and the Virginia Department of Rail and Public Transportation (DRPT).
- Federal funding (ATCMTD grant) enabled the expansion of selected RM3P functions southward to Fredericksburg.

* The Innovation and Technology Transportation Fund is funded

RM3P Overview – Geographic Dimension



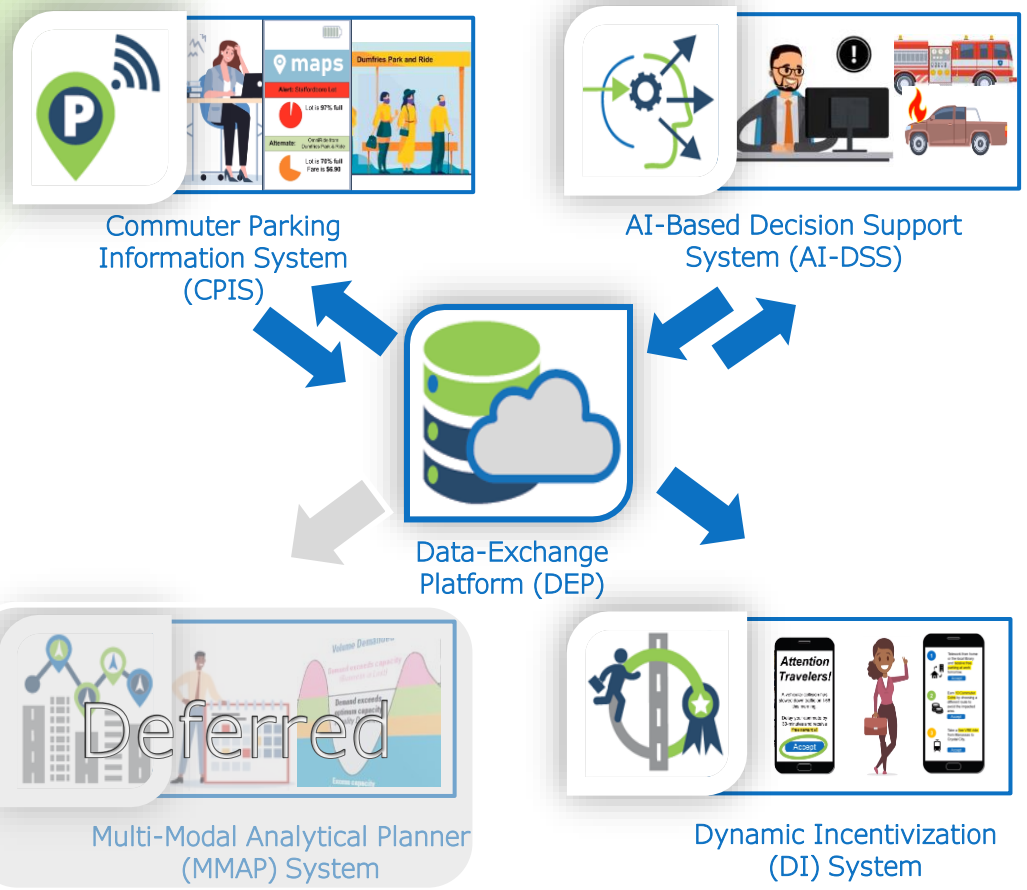
This *data-driven*, *multi-modal* mobility program, serving Northern Virginia and Metropolitan Fredericksburg, is comprised of 4 active projects:

- Data-Exchange Platform (DEP)
- Artificial Intelligence-Based Decision Support System (AI-DSS)
- Dynamic Incentivization (DI)
- Commuter Parking Information System (CPIS)

RM3P

RM3P Overview – the Cutting Edge Concept

RM3P is about working together as a community across modes, jurisdictions, and agencies.



- Lean, Agile, Data-Driven
- Transforms notion of partnership
- Active stakeholder engagement & ownership at all levels of the program
- Embracing existing / emerging technologies
- Utilizes infrastructure-light footprint
- Combines System and Demand Management

Artificial Intelligence-Based Decision Support System

Travel Data:

Monitor emerging conditions.

Data-Informed Plans:

Solve multi-modal transportation challenges by providing coordinated incident response options to transportation agencies in the region.

Artificial Intelligence:

Predict the occurrence and impact of disruptions to the transportation network.

Objectives:

Improve effectiveness of real-time integrated transportation information.

Reduce congestion by improving mobility and travel time, and enhancing travel time reliability.

Improve safety by reducing traffic crashes.

Shift from reactive to proactive operations for optimized response time and performance.

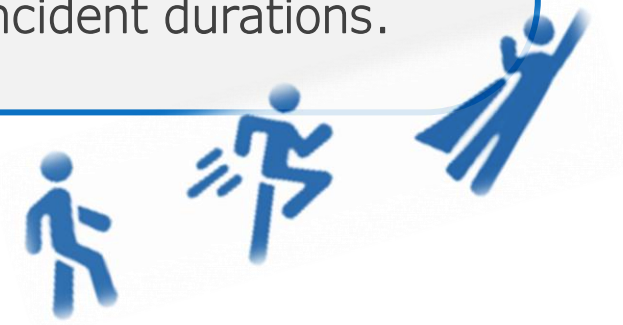
RM3P

AI-Based DSS Coming to Virginia

AI & Multi-Modal

Current

- **Reactive-based**
  single agency, single mode response plans.
- **Ad-hoc**
  multi-agency & multi-modal manual collaboration, often causing longer response times and longer incident durations.



Future

- Data-infused multi-agency, multi-modal coordination.
- Optimized rules for formulating intelligent response plans that are acted upon in real-time.
- AI prediction – proactive, rather than reactive, in incident response.
- Proactive-based responses to prevent or mitigate predicted issues.
- Agency interface is adapted to agencies' capabilities.

A Cohesive TSMO

Dynamic Demand Mgmt

Dynamic Incentivization

- **Empowers commuters** to contribute to the solution.
- Next-generation TDM – **real-time & dynamic incentives.**
- Reinforce with **challenges** and **loyalty** incentive programs.
- **Open back-end** – enables multiple apps, giving commuters choices on how they access incentives.
- Emphasizes **financial sustainability.**

RM3P uses AI to predict the impact of disruptions on the transportation network and share coordinated multi-modal response options with agencies.

RM3P also applies a data-driven incentivization system to dynamically manage demand on the network.

Together these initiatives result in a better coordinated, more cohesive TSMO experience.

Game Changer: Combine TDM and Corridor Management

A Cohesive TSMO

Data, Data, Data

- Build on existing platform - RITIS
- Scalable data storage and exchange
- Capture, process, and exchange real-time and historic multi-modal travel conditions
- Harmonize data and make available via APIs
- Build in API Authentication

Single authoritative source of transportation data for supporting RM3P

Data-Exchange Platform (DEP), a ***reliable, continuously updated, cloud-based data storage and exchange system*** *as the RM3P foundation, harnesses transportation data to* ***support improved responses and multi-modal decision-making*** *both by public agencies and commuters.*

RM3P Concept Summary

Data-Exchange Platform is open incrementally to data users.

Artificial Intelligence-Based Decision Support & Dynamic Incentivization Coming to Northern Virginia.

Look out for the upcoming innovative Commuter Parking Information System.

RM3P

Travel Decisions Powered by Data

THANK YOU

RM3Pvirginia.org

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