



# Regional Multi-Modal Mobility Program (RM3P)

TRANSFORMATION BY TRANSPORTATION | #ITSWC2022

In Partnership With:



Built By:



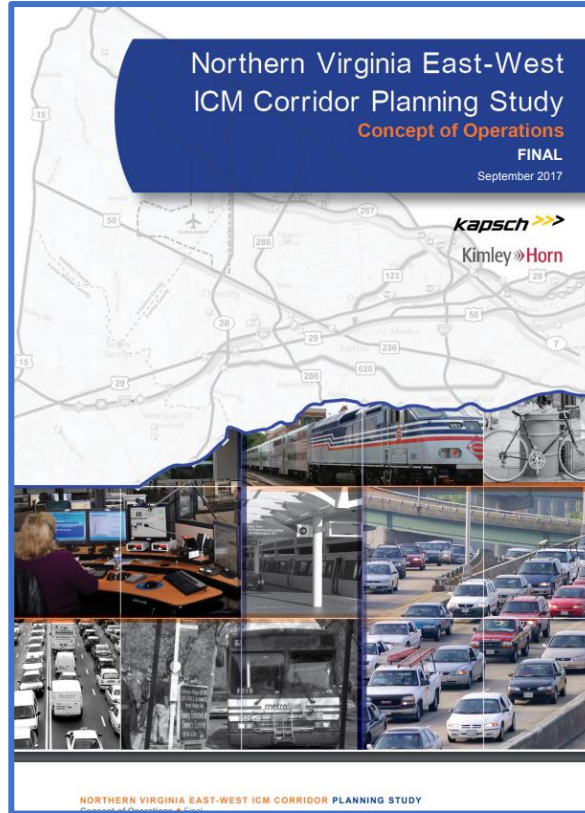
In the business of building businesses

# Agenda



- History of VDOT's Northern Virginia ICM
- Regional ICM/RM3P
- Program Element Next Generation
  - Data-Exchange Platform
  - AI-Based Decision Support System
  - Dynamic Incentivization
  - Commuter Parking Information System
- Program Status Summary

# History of VDOT's Northern Virginia Integrated Corridor Management (ICM)



In Partnership With:



Built By:



# History of VDOT's Northern Virginia ICM

- **ICM Plans**

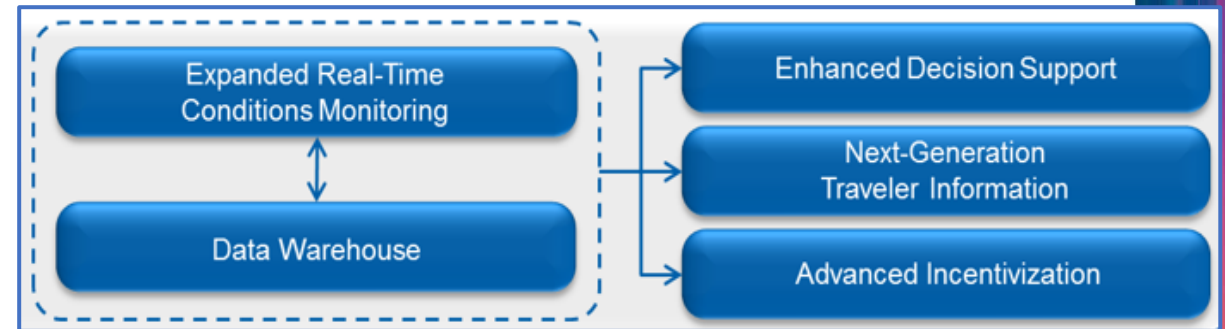
- North-South ICM Corridor Concept Plan – 2012
- East-West ICM Corridor Concept & Implementation Plan – 2017

- **Foundational Initiatives:** Real-time condition monitoring, data store/lake/warehouse, enhanced decision support, next-gen traveler information, & advanced incentivization.

- **Key ICM Precepts:** Manage at a corridor level, operate multi-modally, and balance the load.

- **Change:** Infrastructure-light/free.

- **Conceptual shift** from “Corridors” to “Region”.



# Regional ICM: Regional Multi-Modal Mobility Program (RM3P)



In Partnership With:



Built By:



In the business of building businesses

# Regional ICM/RM3P

- The *RM3P Mission* is to leverage the collaborative use of real-time data, to improve travel safety, reliability, and mobility; as well as to give public the tools to make better informed travel choices.
- Regional ICM/RM3P –
  - Builds on prior VDOT studies on ICM.
  - NVTA identifies ICM as important to meeting the vision of its long-range regional plan, TransAction.
  - NVTA and Commonwealth developed a plan for RM3P and obtained \*Innovation Funding.
  - RM3P is led by VDOT, NVTA, and DRPT.
  - Federal ATCMTD grant allows expansion of geographic scope into Metropolitan Fredericksburg.



\*Innovation Funding = Innovation and Technology Transportation Fund



In Partnership With:



Built By:



In the business of building businesses

## Data-Exchange Platform



The Data-Exchange Platform (DEP) will be a reliable, continuously updated, cloud-based data storage and exchange system. It will be used by regional partners and third-party providers to capture, process, and exchange information on real-time and historic multi-modal travel conditions. This platform will feed necessary data to other RM3P program elements and disseminate value-added and full-grown data produced by these elements.

## AI-Based Decision Support System



The AI-Based Decision Support System (AI-DSS) will help predict the impact of disruptions to the transportation network and provide coordinated response options to agencies. The automated tool for operators will use travel data to monitor emerging conditions and recommend plans for coordinated, multi-agency responses to congestion, incidents, and events.

## Commuter Parking Information System



The Commuter Parking Information System (CPIS) will provide historical, real-time, and predicted parking availability information; including reliable information about parking space availability at lots serving bus, vanpool, and carpool commuters.

## Dynamic Incentivization

Dynamic Incentivization (DI) will be a data-driven system offering the public incentives to modify their travel choices and behaviors in response to real-time travel conditions. The incentives offered will aid in redistributing travel by dynamically managing demand.



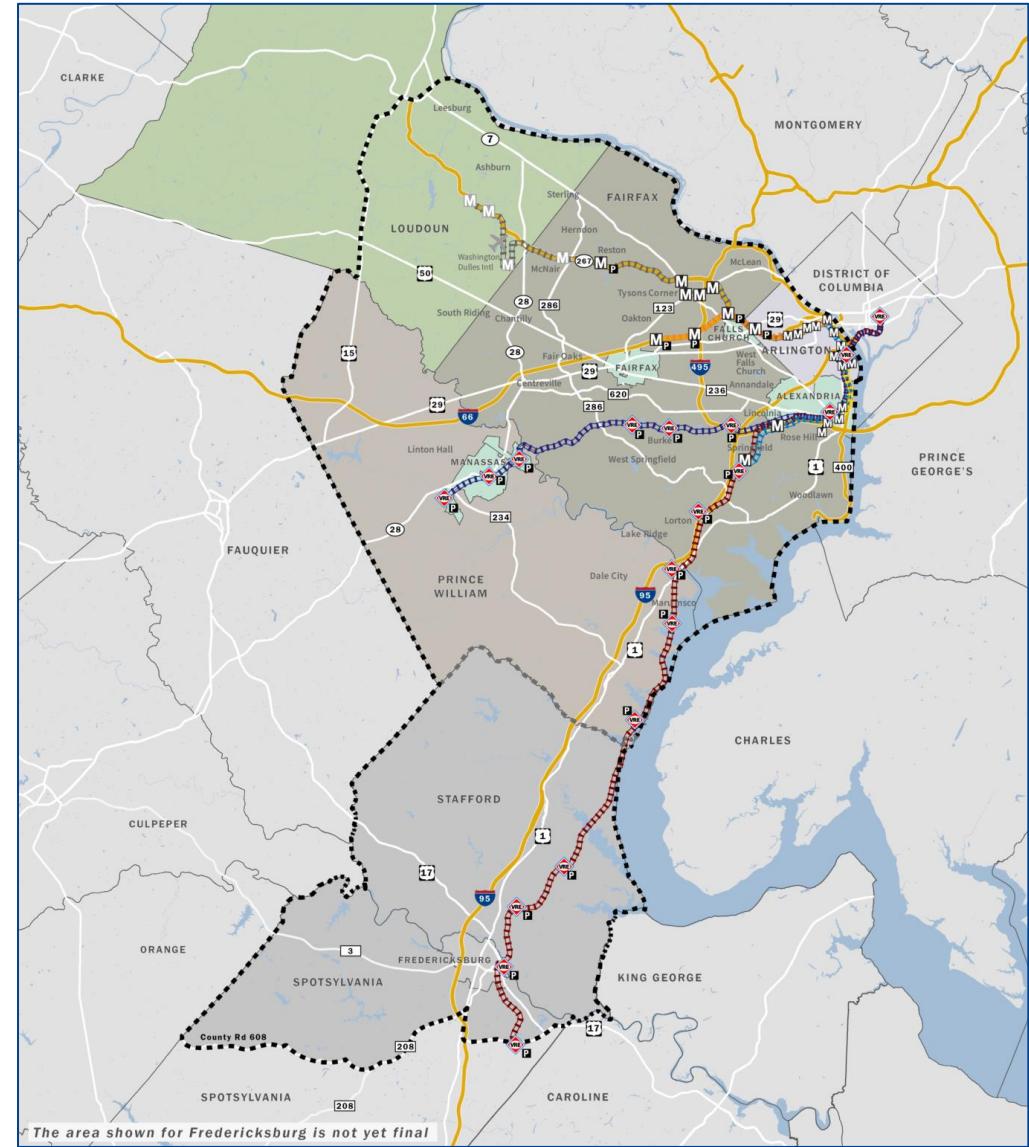
Candice Gibson,  
RM3P Deputy Program  
Manager



# RM3P Area of Influence



- 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's (CPIS)



In Partnership With:



Built By:



In the business of building businesses



# THE NEXT GENERATION



In Partnership With:



Built By:



In the business of building businesses

# RM3P Data-Exchange Platform



- **Description:**

- **Data Storage:** Reliable, continuously updated, cloud-based data storage & exchange system. Capture, process, & exchange information.
- **Type of Data:** Historic and real-time, multi-modal travel condition data.
- **Who will utilize DEP:** Regional partners, third-party providers & the other three RM3P program elements (one-stop shop that can be scalable statewide).

- **Current Practice:** Travel condition data stored in different ways, depending on who collects & owns the data. In addition, existing data-sharing dissemination systems, encompass different degrees of data availability & usage rules.

- **With RM3P:** Data will be acquired, processed, stored, & shared with the right recipients at the right time to enable data-driven decision-making. Data management & sharing capabilities will provide a functional data ecosystem & democratize application developments.



In Partnership With:

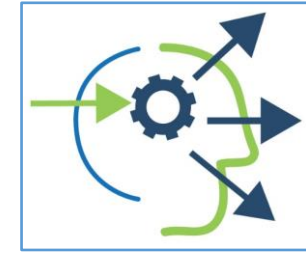


Built By:



In the business of building businesses

# RM3P Artificial Intelligence Based Decision Support System



- **Description:**

- **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.

- **AI-DSS 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.**



In Partnership With:



Built By:



In the business of building businesses

# RM3P Dynamic Incentivization



- **Challenge:**

- **Traveler Information:** Handled by the private sector.
- **Traditional Travel Demand Management (TDM) Program:** Commit long-term, ad-hoc not accommodated
- **What's missing:** How to get people to switch modes, routes, time of travel.

- **Our solution:**

- **Real-time / Ad-hoc TDM:** Real-time & dynamic incentives.
- **Combine:** Traditional TDM & DI via challenges & loyalty incentive programs.
- **Open Backend:** Incentive Apps can interface with DI.
- **Game Changer:** Combine Traditional TDM & Corridor Management.



In Partnership With:



Built By:



In the business of building businesses

# RM3P Commuter Parking Information System



- **Parking Data Challenges:**

- Keeping data up-to-date.
- Highly accurate data: Sensor heavy means cost and maintenance challenges.
- Less costly approach: In and out counting – less accurate with operational challenges.
- Information in various places: Commuter parking lot information in different places (e.g. VRE website, WMATA website, VDOT website)

- **Our solution:**

- Procure data broad license (occupancy & lot status).
- Encourage optimal counting methods per parking lot.
- Historical data supports pre-trip planning, real-time/near real-time predicted data supports pre-departure & enroute applications.
- Outreach to agencies and 3<sup>rd</sup> party providers to share parking information with users w/out installing/maintaining a lot of electronic signs.



In Partnership With:



Built By:



In the business of building businesses

# Program Status Summary



In Partnership With:

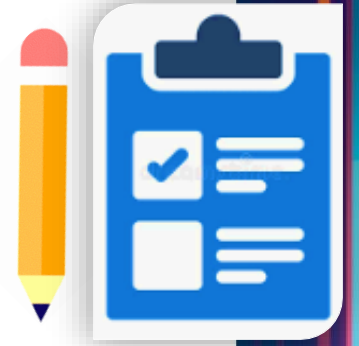


Built By:



In the business of building businesses

# RM3P Program Status Summary



- The **Data-Exchange Platform (DEP)** is under development with significant data already ingested and outputs readied for data users.  
<https://rm3p.ritis.org/>
- With Virginia IT Agency's approval, three RM3P program elements moved forward with service vendor procurement & are all in active status.
  - **Artificial Intelligence-Based Decision Support System (AI-DSS)** –
    - RFP Release Date February 2, 2022
    - Expected Contract Execution in early 2023
  - **Dynamic Incentivization (DI)** –
    - RFP Release Date March 4, 2022
    - Expected Contract Execution end of 2022
  - **Commuter Parking Information System's (CPIS)** –
    - RFP Release Date June 29, 2022

Regional agency partners and stakeholders actively guided and helped shape plans for RM3P service delivery and cooperative agreement framework.



In Partnership With:



Built By:



In the business of building businesses

# Thank You!

Candice D. Gibson, P.E.  
VDOT, Office of Strategic Innovations

[Candice.Gibson@VDOT.Virginia.gov](mailto:Candice.Gibson@VDOT.Virginia.gov)

[rm3pvirginia.org](http://rm3pvirginia.org)



In Partnership With:



Built By:



In the business of  
building businesses