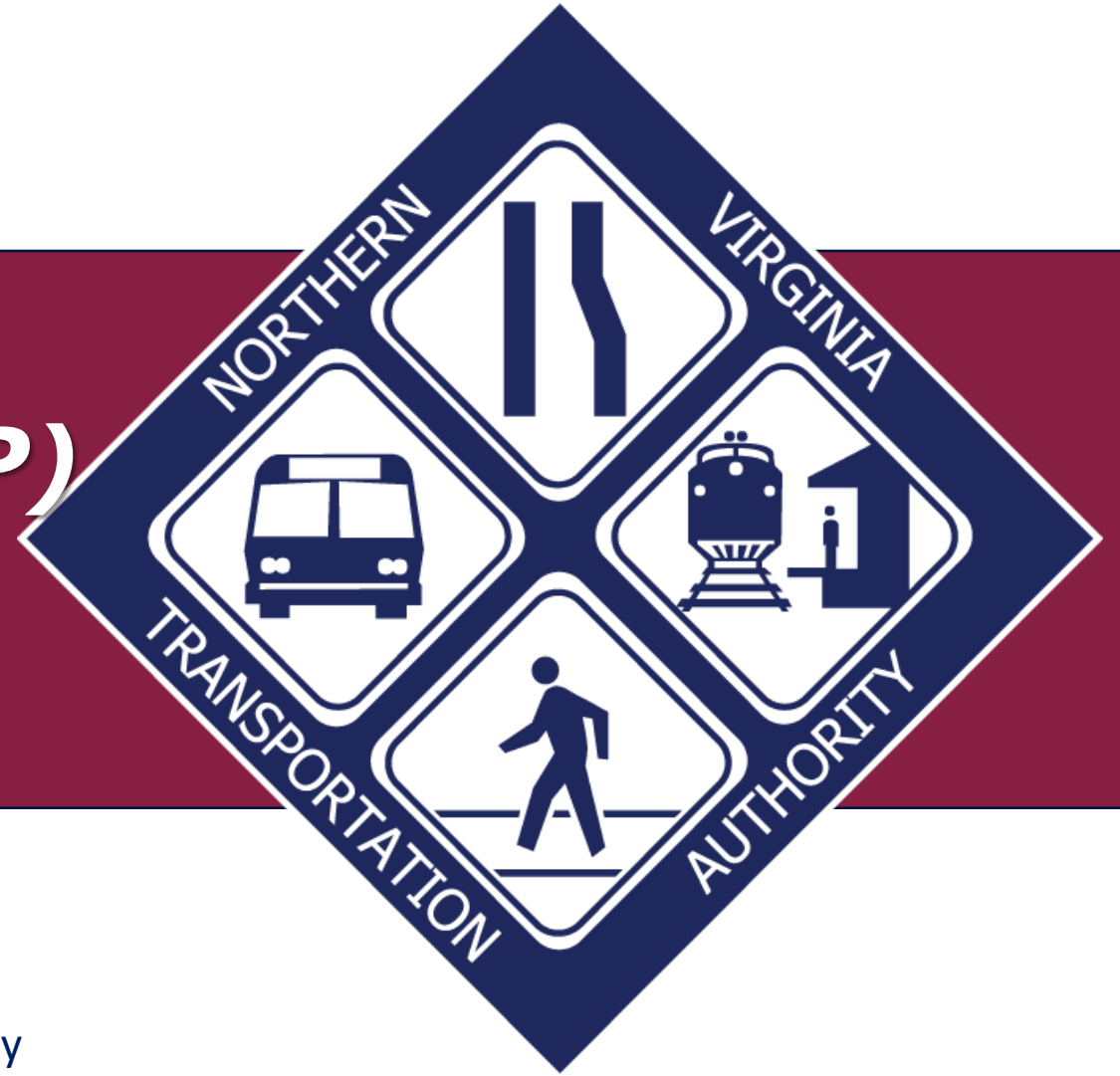


Regional Multimodal Mobility Program(RM3P)

*July 10, 2019
Transportation Technology Committee*

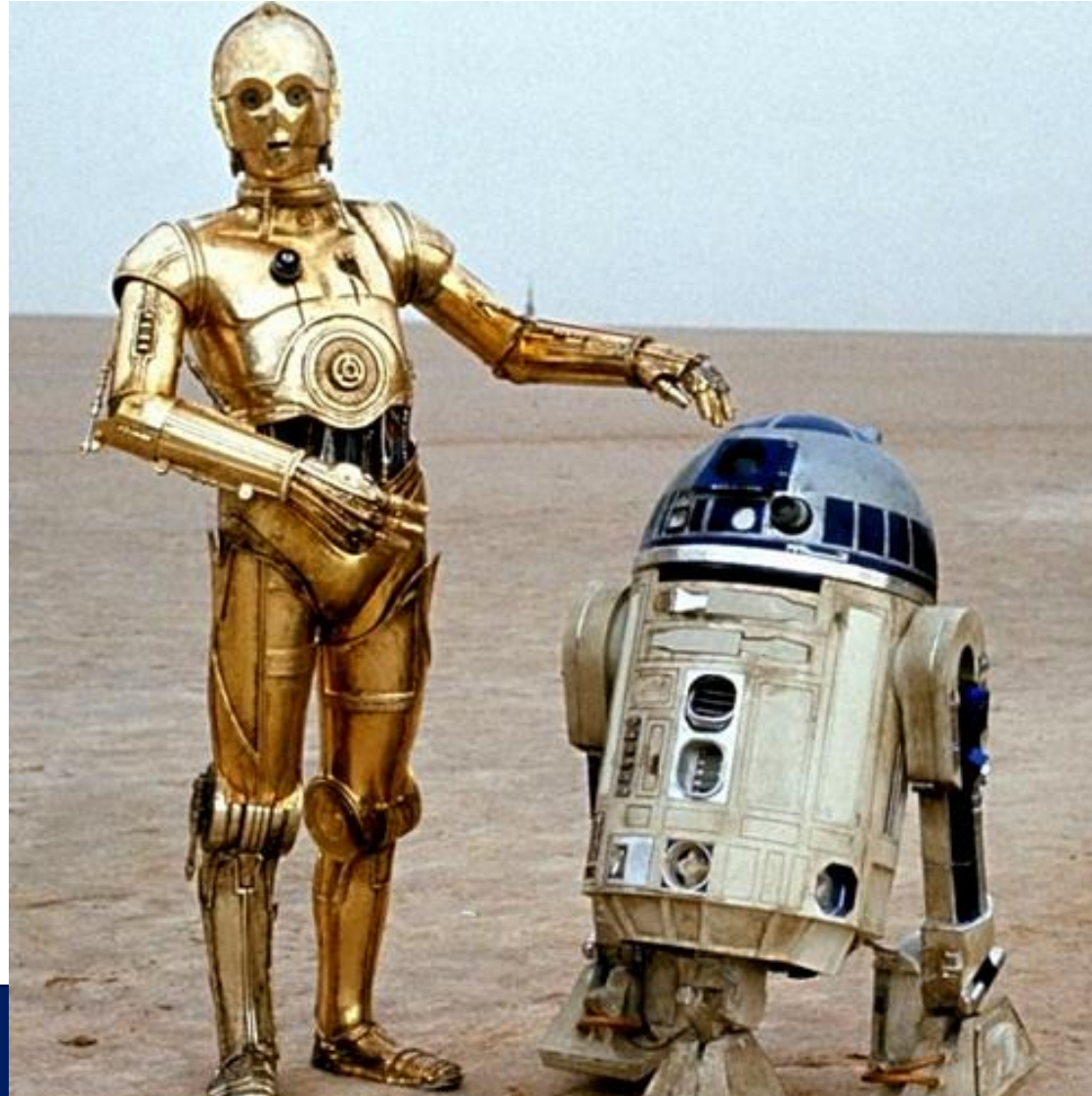


Presented by:
Keith Jasper, Principal, Northern Virginia Transportation Authority



RM3P – Futuristic, but not to be confused with...

C3P-O



R2-D2



What is RM3P?

- RM3P is a collaborative initiative between NVTA, VDOT and DRPT that will explore the potential for technology to complement traditional infrastructure approaches to address the Authority's vision for TransAction, as approved in December 2015:
 - "In the 21st century, Northern Virginia will develop and sustain a **multimodal transportation system** that enhances quality of life and supports economic growth. Investments in the system will provide effective transportation benefits, promote areas of concentrated growth, manage both demand and capacity, and **employ the best technology**, joining rail, roadway, bus, air, water, pedestrian, and bicycle facilities into an **interconnected network** that is fiscally sustainable."
- RM3P will use information and communications technologies to provide travelers, commuters, service providers and transportation system operators with tools that:
 - Optimize system performance
 - Improve travel time reliability
 - Support on-demand multimodal trip options



What is the History of RM3P?

- RM3P evolved from the East-West Integrated Corridor Management (ICM) project
- VDOT-led initiative during 2016 and 2017, funded by FHWA, to develop an operational concept and deployment plan
- ICM takes a multi-modal, multi-agency approach to dynamically manage travel conditions and traveler behavior through a corridor, including:
 - Route choice
 - Mode choice
 - Temporal choice
- Complements an earlier ICM study in the I-95/I-395 corridor
- Unsuccessful VDOT/DRPT/NVTA request for federal funding in summer 2017
- NVTA submitted a SMART SCALE application for region-wide RM3P project in August 2018
- NVTA was awarded ITTF Funding to implement RM3P



How Will RM3P be Funded?

- Commonwealth's Innovation and Technology Transportation Fund (ITTF):
 - \$15M using FY2020 and FY2021 revenues
- ITTF provides funding specifically for the purposes of funding pilot programs and fully developed initiatives pertaining to high-tech infrastructure improvements with a focus on:
 - Reducing congestion
 - Improving mobility
 - Improving safety
 - Providing up-to-date travel data
 - Improving emergency response
- Projects are evaluated based on:
 - Contribution to innovation
 - Potential for transferability
 - Applicability across modes
 - Anticipated benefit
 - Acceptability of risk



How Will RM3P be Managed?



- Led by Cathy McGhee, Commonwealth's Director of Transportation Innovation and Research
- Project activated in July 2019
- Day-to-day management by NVTA, VDOT and DRPT staff
- Kick-off with Regional Stakeholders in Fall 2019, including:
 - Local and regional governments and agencies
 - Transportation and micro-mobility service providers (public and private sectors)
 - Transportation system operators
 - Travel demand management programs
 - Transportation Management Associations
 - Military and other large employment centers
- Completion Fall 2022



What Will RM3P Deliver?

- **Enhanced Commuter Parking Data.** This task will target/prioritize parking lots along multiple corridors, serving commuter bus, rail, and other high demand locations. By communicating parking availability in real time, this task will facilitate carpooling, enhance access to transit, increase shared vehicle use, and reduce congestion;
- **Mobility as a Service (MaaS) Dynamic Service Gap Dashboard.** Targeted at transportation/mobility providers, this task will encourage multi-modal travel by identifying service gaps, incentivizing MaaS activity, and facilitating first/last mile services;
- **AI-Based Decision Support System with Prediction.** This task will use real time conditions and historic data to predict incidents and their impacts. This information will enable transportation system operators to better respond to incidents, reducing mobility impacts across the transportation system; and
- **Data-Driven Tool to Incentivize Customer Mode and Route Choice.** This task will customize existing tools such as the free incenTrip application (developed by UMD), providing customers a range of multi-modal transportation choices. Incentives will influence travel behaviors such as route, mode, and temporal choices, balancing travel demand during both recurrent and non-recurrent congestion.



Other NVRTA Transportation Technology Initiatives

- ITS Project Investments
- Annual Northern Virginia Transportation Roundtable
- Transportation Technology Committee
- Driven by InNoVation
- TransAction Scenario Analysis



Transportation Technology Committee (TTC)

Work Plan (July 12, 2019)

Purpose of TTC Work Plan

- To advise the Northern Virginia Transportation Authority (NVTA) Executive Director on multi-modal transportation technologies and related transportation trends that support (or endanger) the vision of the Authority as stated in its current Five-Year Strategic Plan;
- To make specific recommendations for consideration by the NVTA Executive Director related to the development of TransAction, the regional, multi-modal, long-range transportation plan for Northern Virginia, and the development of updates to the Authority's Six Year Program. Such recommendations may include the use of transportation technologies to complement traditional transportation infrastructure and enhance the operation and performance of the regional transportation system; and
- To develop an evidence-based body of knowledge that will educate and inform regional policy makers on multi-modal transportation technologies and related transportation trends.

TTC Scope and Horizons

While the TTC's advice shall be NoVA-focused, the TTC should consider broader regional, national and international trends while embracing local transportation preferences wherever possible.

The TTC will address transportation technologies and related trends that are occurring on multiple, overlapping timelines:

- Today, e.g. Intelligent Transportation Systems (ITS) technologies, shared mobility
- During the next couple of years, e.g. enhanced ITS technologies, Mobility as a Service (MaaS)
- Multi-decadal basis, e.g. Connected, Autonomous, Shared, Electric (CASE) vehicles

Proposed Deliverables

Four initial deliverables are proposed. Drafts will be developed by NVTA staff, in collaboration with staff from other entities where appropriate. Deliverable format will be white papers and/or presentations. Review and finalization of deliverables is expected to take up to three months for each deliverable. Deliverables will identify areas that can be directly addressed by NVTA, but will not be limited to these.

The deliverables will support the development of a Transportation Technology Strategic Plan, identifying strategies and actions that support the deployment of appropriate transportation technologies to address regional transportation needs.

Deliverables are categorized as either 'action-oriented' or 'supporting'. The former category incorporates initiatives related to how technologies will address the region's transportation needs, identifying associated policy considerations that support the Authority's vision while mitigating any potentially negative impacts. The latter category of deliverables will provide relevant regional transportation context, and identify appropriate research and communications initiatives that support the Transportation Technology Strategic Plan.

Action-oriented deliverables

1. Appropriate Role of Technology, Challenges/Opportunities (draft September 2019)

- Define linkages between needs and technology, e.g.:
 - Reduce congestion, first/last mile options
 - Improve accessibility to jobs, healthcare, etc.
 - Improve safety/enhance emergency management
 - Reduce emissions/build resilience
- Identify moral/ethical and other implications related to technology deployment, and identify options to address including:
 - Equity for vulnerable populations
 - Privacy
 - Cyber Security
- Identify technology related scenarios (alternate futures) for analysis during TransAction development, e.g.:
 - Impact of travel behavior changes arising from RM3P build-out
 - Impact of travel behavior changes related to CASE vehicles
- Consider the operations and maintenance implications and costs of different types of technology deployments, and identify sustainable approaches to funding
- Explore opportunities for public/private partnerships, and barriers to entry for the private sector
- Adequately prepare for future technology disruptions, highlighting the need to adapt to changing circumstances and timelines
- Consider future enhancements to RM3P, and interoperability with other tools

2. Regional Technology Policy Development Needs (draft October 2019)

- Necessary institutional infrastructure
- Incentivize increased vehicle occupancy across all modes
- Variable use-based pricing for AVs
- Facilitate development of EV infrastructure
- Data (sharing/security/privacy) policies
- Equitable distribution of technology benefits
- Guidelines for funding future technology deployments, recognizing the likely life cycles for technology development through obsolescence
- Mitigation of potentially negative impacts
- Curb and parking management strategies

Supporting deliverables

3. NVT/NoVA Transportation Primer (draft November 2019)

- Summarize regional transportation needs;
- Provide TTC members with a better understanding of TransAction vision, goals, performance measures, etc.;

- Summarize region's current transportation technology activities, e.g. Connected Corridor, RM3P, TSP, data-sharing, EV infrastructure and private sector initiatives¹;
- Identify potential funding sources for future technology ('soft infrastructure') deployments; and
- Identify existing and potential roles of public and private sectors, and opportunities for partnership.

4. Research/Outreach/Education (draft December 2019)

- Better understand Northern Virginians' level of awareness, concerns, and desires with respect to technology
- Using facts rather than 'hype', develop appropriate messaging for multiple target audiences:
 - Authority members; policy development, investment strategies
 - Member jurisdiction and agency staff; technical education, skill needs/gaps, encourage 'big thinking'
 - Regional stakeholders, including the business community; collaboration opportunities, synergies
 - Northern Virginians; technology awareness, safeguards, impacts, advantages, disadvantages, and value for money
 - Private sector; partnership opportunities
- Incorporate 'trigger points' into NVTa staff annual reports on transportation technologies and emerging trends

Role of TTC members

- Review draft deliverables and provide feedback;
- Where appropriate, suggest additional work plan deliverables; and
- Inform the TTC on matters relevant to the TTC Work Plan.

¹ Could include regional initiatives in Maryland, The District or elsewhere that are of interest to NoVA