



Request for Information (RFI)

RFI # 2020-0612-TW
< This is NOT a Bid Solicitation >

The Virginia Department of Transportation (VDOT) is soliciting information and feedback from the industry on state-of-the-art solutions for delivering the Regional Multi-Modal Mobility Program (RM3P). Based on the information gathered from this RFI, VDOT will refine its procurement strategy and initiate one or more formal competitive procurement solicitations at a later date.

Issue Date: June 12, 2020
Project Title: Regional Multi-Modal Mobility Program (RM3P)
Commodity Codes: 20969, 55090, 92032, 95877, 95891

Contract Officer: Tiffany Winfrey
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PHONE: (804) 692-0455
All Clarification Questions will only be received via email. All questions are due by **June 25, 2020 at 5:00PM EST.**

Responses Due: No later than **July 9, 2020 at 5:00PM EST.**

Also see Page 6, Item #6 – SUBMITTAL INSTRUCTIONS

Name and Address of Firm:	
Name	Date
Address	By: Signature in ink
	Print Name and Title
eVA # of DUNS #	Phone
E-Mail	

NOTE: This public body does not discriminate against faith-based organizations in accordance with the *Code of Virginia, § 2.2-4343.1* or against a bidder because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.



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1. DISCLAIMER

This RFI is issued solely for information and planning purposes and does not constitute a solicitation.

Requirements for protecting trade secrets and proprietary information from disclosure: Do not submit trade secret, proprietary, or confidential information in the RFI response unless absolutely necessary. All information submitted to VDOT is subject to disclosure under the Virginia Freedom of Information Act (2.2-3700 *et seq.* of the Code of Virginia) unless a specific exclusion applies. To claim an exclusion under the Virginia Public Procurement Act (2.2-4300 *et seq.* of the Code of Virginia), for data and materials submitted as part of a procurement transaction or prequalification application that you believe are trade secrets or proprietary information, you must:

- 1) File a written request, either before or at the time the data or materials are submitted, that:
 - Invokes the protection of §2.2-4342 of the Code of Virginia;
 - Identifies the specific data or other materials you seek to exclude and protect by using some distinct method such as highlighting or underlining. (Only identify the specific words, figures, or paragraphs that are claimed to be trade secrets or proprietary information; the identification of an entire document is not acceptable and may result in rejection of the claim for protection); and
 - States the reasons why protection is necessary; and
- 2) Submit a redacted copy of your response that deletes or blocks all data or material which is identified as a trade secret or proprietary information in the written request in MS WORD or .pdf in accordance with RFI Section 6 – SUBMITTAL INSTRUCTIONS.
- 3) Provide a summary of any proprietary information using the Attachment A, Proprietary/Confidential Information Summary Form that is attached to this RFI.

Responses to the RFI will not be returned. In accordance with Code of Virginia §2.2-4300, also known as the Virginia Public Procurement Act, responses to this notice are not offers and cannot be accepted by the Commonwealth of Virginia or VDOT to form a binding contract. Respondents are solely responsible for all expenses associated with responding to this RFI.

2. PURPOSE

The Virginia Department of Transportation (VDOT) is releasing this RFI to (1) inform potential private-sector respondents of the Regional Multi-Modal Mobility Program, (2) encourage interest in the program, and (3) invite respondents to share comments and insights, thoughts on innovation, limitations and constraints, etc. in the delivery of the RM3P. Other goals of this RFI include:

- a. Communicate to potential private-sector partners the objectives of the RM3P.
- b. Receive input from industry practitioners on existing capabilities and emerging trends and areas of innovation in the delivery of a cloud-based data lake/data store, AI-based decision support system, parking information system, data- and scenario-driven mobility analytic dashboard, and opportunities for dynamic incentivization.

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- c. Identify respondents who are potentially interested in submitting proposals for procurement of RM3P systems and services.
- d. Provide opportunity for practitioners to identify best-practice solutions delivery, approaches to operations and maintenance, strategies for obsolescence management of the deployed solutions, etc.

Attending the virtual Industry Day Webinar is not mandatory, but is strongly recommended. However, submitting a response to this RFI is a required precondition to participating in one-on-one discussions with VDOT and the RM3P Team. The Industry Day Webinar is scheduled for **June 25, 2020** and registration will be required. Subsequent one-on-one discussions will be scheduled during the **week of July 27, 2020**. Because of COVID19 restrictions, one-on-one discussions will be conducted virtually. RFI respondents will be notified about the schedule for one-on-one discussions in early July.

VDOT has contracted with Kapsch TrafficCom USA, Inc. to furnish program management support for the RM3P initiative. As the management consultant to VDOT, Kapsch is not eligible to bid on or directly deliver RM3P solutioning services.

3. PROGRAM DESCRIPTION

The Northern Virginia Regional Multi-Modal Mobility Program (RM3P) initiative is a collaborative program to improve safety, mobility, and reliability for travelers in Northern Virginia. The program was jointly launched by the Northern Virginia Transportation Authority (NVTA), the Virginia Department of Transportation (VDOT), and the Virginia Department of Rail and Public Transportation (DRPT). The initiative has also enlisted the support and participation of public agencies across the region. RM3P builds on prior studies involving multi-modal corridor planning on the East-West Corridor, with I-66 as its anchor, and on the North-South Corridor, with I-95/395 at its center. The Northern Virginia RM3P initiative may serve as a model for the development of similar programs throughout the Commonwealth.

RM3P is based on the concept of Integrated Corridor Management (ICM). RM3P expands the notion of “corridor” to “region,” as indicated in Figure 1. It combines the East-West and North-South corridors into a single, integrated “mega-region.” RM3P will be deployed, operated, and managed at a regional level.

The new program emphasizes the following salient features:

- Infusing technological innovation and a can-do approach in a region characterized by long-standing transportation gridlock.
- Advancing multi-modalism further in a region already supporting exceptional transit utilization.
- Using stakeholder champions to promote buy-in to the program and gain real-world insights and solutions.
- Utilizing Capability Maturity Modeling to target achievable capabilities and identify concrete actions for realizing those capabilities.
- Using infrastructure-light solutioning (i.e., solutions that minimize deployment of field equipment) to take advantage of new technologies that foster sustainability.
- Establishing a vision for integrated mobility management in the regional long-range plan and a blueprint for program rollout.
- Implementing a program-level governance structure for long-term sustainability.

Administrative Services
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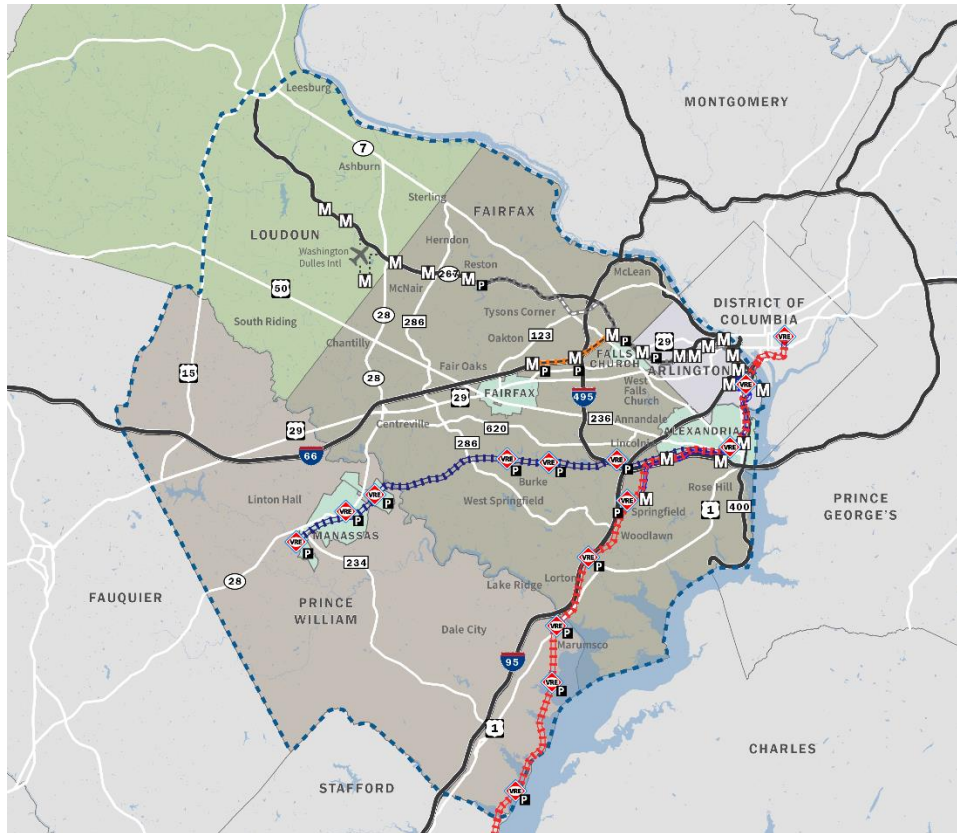


Figure 1: Program Location Map

RM3P will implement key foundational technologies intended to optimize performance of the existing transportation infrastructure, enhance travel-time reliability for regional commuters, and support on-demand, multi-modal trip options/choices for travelers. The foundational technologies include mechanisms for the efficient exchange of information between stakeholders, as well as tools to support structured operational decision-making. Additional public-facing technologies and strategies will incentivize positive changes in commuter choices and behaviors, particularly under adverse travel conditions. RM3P is envisioned as a holistic, tightly integrated technology initiative.

The five foundational technologies -- or “program elements” – comprising the RM3P initiative are:

- **Data Lake/Data Store:** A cloud-based central repository used by regional partners and third-party providers to capture, process, aggregate, and exchange information in real-time, multi-modal travel conditions. The Data Store serves as the program’s foundational component and will share its data with the other four RM3P program elements.
- **Artificial Intelligence-Based Decision Support System (DSS):** An automated tool for transportation operators that uses historic and real-time travel data to predict emerging conditions and recommends plans for coordinated, multi-agency operational responses to congestion, incidents, and events.

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- **Commuter Parking Information System:** Provides commuters with reliable, expected parking space availability for lots serving rail, bus, and vanpool/carpool commuters. Information is made available to consumers using established third-party applications.
- **Mobility Gap Dashboard:** A data analytical tool that identifies “gaps” in the transportation service network and enables mobility providers to better meet demand by showing those areas that are overserved or underserved.
- **Dynamic Incentivization:** A data-driven system enabling regional agencies and third-party providers to offer commuters incentives intended to modify travel choices and behaviors in response to real-time traffic conditions. These include strategies to avoid crashes, work zones, and other predicted congested conditions.

This RFI seeks respondents’ inputs on one or more of these five program elements to help solidify understanding of the industry’s capabilities and to provide essential insights as VDOT finalizes its scopes, needs, features, high-level requirements, architectures, and procurement strategy.

4. CONTRACTING APPROACH/STATEMENT OF NEEDS

VDOT intends to deliver the Program using available contract options that conform to Virginia Information Technology Agency (VITA) requirements and VDOT procurement rules and guidelines. It is anticipated that multiple procurement vehicles may be used to deliver, manage, integrate, and maintain the five program elements. With a short-duration delivery schedule, suitable contract vehicles from VITA, VDOT, the GSA Schedule, etc. are being examined for eligibility and applicability.

5. ANTICIPATED PROGRAM SCHEDULE

The overall solution delivery is scheduled to be completed between January 2021 and October 2022, including incremental deliverables throughout this period, using an agile development process.

6. SUBMITTAL INSTRUCTIONS

Respondents to this RFI must adhere to the following instructions:

- 6.1 Provide information in response to the questions listed in Section 7, as well as any other information that respondents deem to be useful and informative to VDOT. The response is limited to twenty-five (25) pages (not including Attachment A, the signed cover page, and supporting documentation) and have a font size of 10 or above using one-sided, letter-size (8 1/2 x 11 inch) paper. Brevity and conciseness are encouraged.
- 6.2 Responses to this RFI must be submitted by 5:00PM EST on **July 9, 2020**. VDOT encourages vendors to submit responses prior to the due date and time.
- 6.3 Responses to this RFI should be submitted electronically through eVA or to the email address shown on the front of this RFI document, marking attachment as ORIGINAL and/or REDACTED, and must include a copy of the cover page of this RFI signed by a duly authorized representative of the vendor evidencing that the vendor agrees to be bound by the terms and conditions described herein.

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6.4 Responses submitted by email that include any confidential information must be sent as a secure message by the Respondent using a secure messaging tool owned by the Respondent.

NOTE: Solution deployments under RM3P will need to comply with VITA's SEC 501 Information Security Standard and the NIST 800-Series at the federal level. RFI respondents who are potentially interested in the RM3P future procurement should be cognizant of these requirements and plan accordingly.

7. RFI RESPONSE

VDOT requests information and suggestions from industry to support the development of anticipated formal procurement documents. VDOT is interested in obtaining a response to the questions below. Written responses will be accepted up until the deadline shown in the RFI schedule. As part of the response to this RFI, please include additional comments, insights, and suggestions that you believe will be helpful to VDOT. Keep in mind that VDOT seeks to maximize innovation and creativity from the private sector, while at the same time realizing best value.

Respondents are required to provide responses to all non-program-specific Items 1 - 6, below. In addition, respondents should select those program elements relevant to their businesses and answer the applicable questions (Items 7 - 11) within those elements.

RESPONSE CONTENT

- 1. Company Introduction.** Introduce your company in one or two paragraphs. Provide your company website link and public agency reference contacts, where available. Please indicate what existing contracts the company has with VITA, VDOT, DRPT, and GSA.
- 2. Overview of Capabilities.** The RM3P Team is particularly interested in exploring contracting opportunities with organizations able to offer solutions under multiple program elements. Please provide a description of your experience, thoughts, and approaches to providing such solutions on similar projects, including how those projects were procured, scoped, contracted, and implemented. Please also indicate which program element(s) your company does not currently support and your feedback about the anticipated delivery schedule.
- 3. Planning Cost Information.** While the overall budget for the RM3P program is fixed, the allocation to these five elements is being determined based on planning cost estimates and activity priorities set by the RM3P Executive Committee. Please advise whether a commercial price list is available on relevant systems for any or all of the five program elements; if so, please furnish.
- 4. General Delivery Approach.** Provide your insights and perspectives on the optimal approach to developing and delivering RM3P. Should the five program elements be procured and deployed individually, or should they be bundled into one or two procurement packages? Are there commercial-off-the-shelf (COTS) products that can potentially be configured to address RM3P needs, or will solutions need to be custom-developed? Please furnish additional guidance and recommendations as appropriate.

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- 5. Operations and Maintenance.** In addition to the development and deployment of these systems, the RM3P Team is interested in learning about best practice in sustaining these systems. Please provide a description of your experience with O&M, anticipated financial and labor resources needed to operate and maintain the systems, and specific O&M recommendations.
- 6. VITA Qualifications.** Indicate whether your firm is currently pre-qualified to offer solutions through existing VITA contract mechanisms. If so, please identify all active VITA contract vehicles and the services/capabilities for which you are pre-qualified. If not, has your firm applied for VITA qualification? What is the current status of your application, and when is the process expected to be completed?
- 7. Cloud-Based Data Lake/Data Store.** The RM3P Team is interested in a sophisticated cloud-based Data Lake/Data Store solution to support the storage and exchange of pertinent transportation information among the multi-modal partners across the region. Acceptable solutions will need to comply with the rules and guidelines prescribed by VITA in procuring cloud-based solutions.
- a. Describe your experience implementing real-time data storage and processing solutions for the transportation industry.
 - b. Briefly describe a theoretical technology solution that addresses the following use case and your experience implementing similar solutions for other clients:
 - A set of employee-facing applications need near real-time (< 1 second) access to a single data feed that provides consistent, curated, and authoritative data generated by combining real-time streams from more than twenty unique and independently operated traffic signal systems.
 - The independent traffic signal systems may have similar data fields and types, but they may also have values and headers that will need to be modified to create the single data feed. For example, one system might have a field called “STATUS” with values of “green, yellow, and red” and another might have a similar field called “Indicator” with values of “1, 2, and 3” that align with the green, yellow, and red status.
- Note: The theoretical solution should support location and geo-spatial data fields and transformations in real-time. It should also allow for the storage of archival data.
- c. Describe your experience developing and implementing real-time and near real-time data curation services – such as data quality, data mastering, data fusion, etc. – in support of a centralized Data Lake/Data Store.
- 8. AI-Based Decision Support System.** The RM3P Team is interested in a multi-modal Decision Support System (DSS) with machine-learning capabilities that will recommend and continuously improve response plans to include incident prediction.
- a. Summarize your experience developing and implementing decision support systems, including those for the transportation industry. Describe specific DSS solutions and where they have been implemented.

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- b. One potential technology being considered is a predictive analytics engine to predict incidents and congestion risks within the RM3P region. Based on your experience, what data is needed and how many days of data do you normally expect in order to train a prediction engine to reliably predict both risk of an incident and risk of congestion? How large of a geographic area should be considered in a prediction engine?
- c. Another area of interest is the use of modelling to develop and evaluate response plans. The Northern Virginia region currently has several macroscopic models for planning purposes, and a handful of mesoscopic models to support specific projects within the region. What is your experience in using modeling to develop and analyze multi-modal response plans? Based on your experience, is developing a regional mesoscopic model feasible for the size of the RM3P region and, if so, how long would you estimate it will take to develop and calibrate such a mesoscopic model?
- d. What is your experience with developing new incident response plans by combining existing agency plans, working with stakeholder groups to develop new multi-modal/multi-agency plans, and evaluating those response plans for expected benefits? What approach would you recommend for developing multi-agency, multi-modal response plans? What is your experience and recommended approach to improving response plans over time?

9. Commuter Parking Information System. The RM3P Team is interested in infrastructure-light solutions that minimize field device installation and allow for dissemination of parking information through third-party providers.

- a. Please describe parking solutions that meet these key criteria: (1) use data analytics (e.g., crowdsourcing, probe, and historic parking data) to determine parking occupancy, (2) minimize the need for field device installation, manual data resets, and maintenance in the parking lots, and (3) disseminate parking information and data through third-party providers.
- b. Describe specific parking solutions that you have implemented. How have these solutions addressed the criteria above? At what locations have the system(s) been deployed? Who are the clients? Do standards or specifications for these solutions exist?
- c. How accurate is the technology?
- d. Does your system provide the ability to integrate parking data from – and disseminate parking data to – third-party entities? Please describe current partnerships with third-parties such as distributors of navigation apps, search engines, trip planners, crowdsourcing platforms, etc.

10. Mobility Gap Dashboard. The RM3P Team is interested in a non-real-time data-driven, user-friendly, scenario-based analytical tool to assist mobility providers (primarily transit agency planners and road network operators) in assessing/planning the resources necessary to meet multi-modal customer demand. This tool is expected to be used to support planning collaboration across agencies.

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- a. Please describe the data sources and modeling techniques you recommend for supporting this initiative.
- b. Describe (and give examples) of user interfaces you recommend for assisting transportation professionals with these planning tasks that will not require knowledge or experience with modeling. Please include screen shots of example user interfaces.
- c. Identify and describe projects you have performed that are similar to the Mobility Gap Dashboard.

11. Dynamic Incentivization. The RM3P Team is interested in the capability of dynamically triggering, in real-time, traveler incentive offers based on pre-determined rules in response to current traffic and transportation network conditions. Additionally, periodic challenges, a loyalty program, and/or gamification features are desired to help sustain customers' interest and promote long-term behavioral changes.

- a. Please summarize your experience with incentivization programs. Provide examples of specific projects, whether they were pilot projects or full deployments, and identify key lessons learned. What advice do you have on developing a sustainable incentivization program?
- b. The team is interested in a system which will allow a common back-end to create incentive offers which can be presented to the public using multiple apps. The goal would be to give consumers options, so they can choose their preferred apps for managing incentives. Figure 2, below, shows a sample architecture with a shared back end and two different public-facing apps. Please comment on the feasibility of this architecture and describe the major opportunities and challenges it presents.

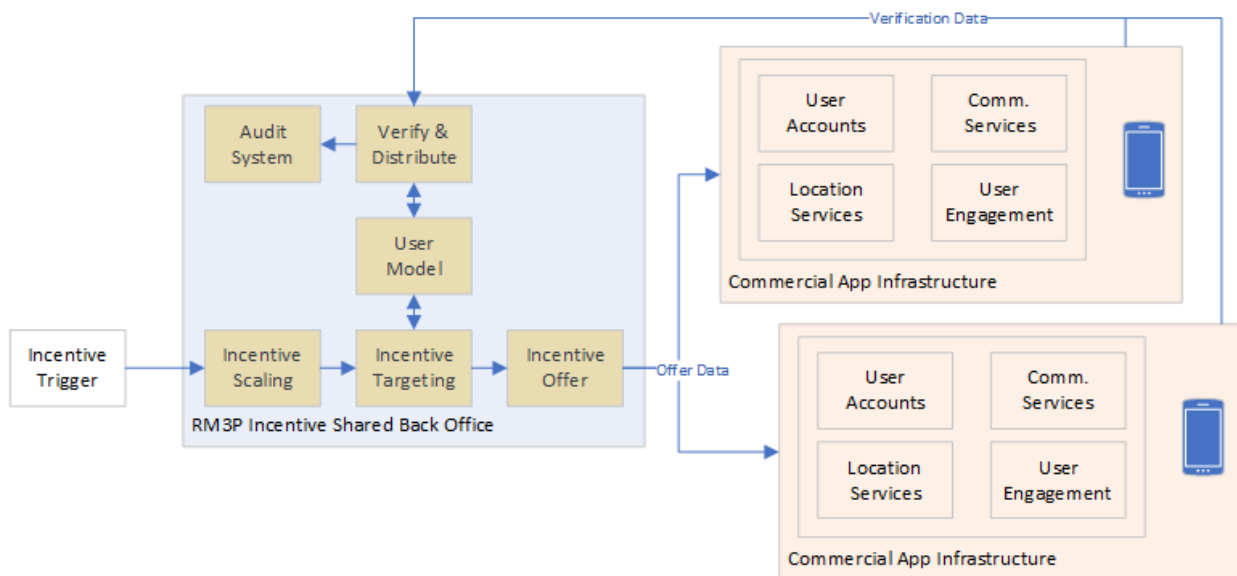


Figure 2: Incentivization App – Architecture Agnostic

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- c. Please comment on factors which contribute to widespread adoption and consistent usage of incentivization systems. Include issues such as program goals, structure, marketing and outreach, and make specific suggestions where possible.
- d. Provide insights and experience on how best to balance between customer privacy protection and being able to verify that incentive requirements have been met. If possible, discuss this in the context of the aforementioned multi-app environment.
- e. Please describe any experience your firm has in dynamically generating incentives in response to current traffic conditions and events. Include discussion on tools used by triggering mechanisms (traffic models, artificial intelligence, etc.), as well as the environment (geographic coverage) and results (reliability, accuracy). You may include work concepts that have not yet been deployed, but please distinguish between what is conceptual vs. research vs. production.
- f. Please describe your experience and recommendations for working with third parties that provide incentives to customers. Include discussion on recruiting incentive providers, managing the value distribution process, and determining what types of incentives work best in specific situations. Provide a discussion on funding strategies that were observed or initiated.
- g. Please describe any current partnerships for reward offerings and/or managing the “loyalty” components of incentivization programs.

8. RFI CLARIFICATION QUESTIONS

E-mail any clarification questions regarding this RFI by the deadline shown in the RFI schedule, below, to the VDOT Contract Officer on the title page. Include the following:

- Name
- Organization
- Email address
- Telephone number
- Detailed question
- Reference page number of RFI related to the question

Written responses to questions received by the deadline for submission for RFI clarifications will be published on www.eva.virginia.gov.

NOTE: For those queries submitted prior to the deadline for questions submittal, every effort will be made to respond to those questions during the Industry Day Webinar.

9. RFI SCHEDULE

The RM3P Request for Information (RFI) will include an Industry Day Webinar followed by one-on-one discussion conference calls with individual respondents to the RFI. The following represents VDOT’s current estimated schedule:

ACTIVITY/KEY MILESTONE	DATE	TIME (EST)
Issue the RFI Document	June 12, 2020	
Deadline to register for Industry Day Webinar	June 19, 2020	5:00 PM
Industry Day Webinar	June 25, 2020	12:30 PM
Deadline to submit clarification questions	June 25, 2020	5:00 PM
Deadline to submit RFI response	July 9, 2020	5:00 PM
One-on-One discussions – 30 min. for one topic, 45 min. for two topics, 60 min. for three or more topic	Week of July 27, 2020	TBD

10. INDUSTRY DAY WEBINAR

An Industry Day Webinar will be conducted to provide an overview of RM3P, including overall goals and objectives, general background, anticipated scope, and schedule. Vendors who are interested in attending the Industry Day Webinar must register prior to the deadline for registration shown in the RFI schedule.

While it is not mandatory that respondents to this RFI participate in the Industry Day Webinar, they are strongly encouraged to do so.

To register for the Industry Day Webinar, send an email to the VDOT Contract Officer on the title page of this document. The Webinar log-in information will be sent to participants after they register.

Registration must include:

- Full names of each participant
- Organizational affiliation of each participant
- Email address of each participant
- Telephone number of each participant

The presentation slides for the Industry Day Webinar are attached (**Exhibit 1**). The slides include additional background information on RM3P and important details about the five program elements.

11. ONE-ON-ONE DISCUSSIONS

Those firms that respond to this RFI will be invited to participate in one-on-one discussions with VDOT and the RM3P Team. The one-on-one sessions will be conducted virtually. (Only respondents to the RFI will be eligible to attend the one-on-one sessions.)

RFI respondents will be notified of the schedule for one-on-one sessions in mid-July. Respondents will then be responsible for confirming their assigned one-on-one time slots.

12. DISCLOSURE OF SUBMISSION MATERIALS

Vendors agree that by responding to this RFI they are granting a license to VDOT for all data, materials, and documentation originated and prepared for VDOT pursuant to the RFI. Except for, copyrighted or trademarked materials, such data, materials and documentation shall be subject to public inspection in accordance with the Virginia Freedom of Information Act unless submitted as proprietary/confidential via Attachment A.

13. GENERAL TERMS AND CONDITIONS

The Commonwealth of Virginia General Terms and Conditions are hereby incorporated into this RFI by reference. A copy of these General Terms and Conditions may be obtained by contacting the Contract Officer whose name appears on the front of this RFI, or by visiting www.eva.virginia.gov.

ATTACHMENT A

PROPRIETARY/CONFIDENTIAL INFORMATION

SUMMARY FORM

SECTION/TITLE	PAGE NUMBER(S)	REASON(S) FOR WITHHOLDING FROM DISCLOSURE*

* Identify the reason for withholding from disclosure in accordance with the Code of Virginia § 2.2-4342F

EXHIBIT 1

INDUSTRY DAY WEBINAR PRESENTATION

(File name: 20200612 RM3P Industry Day.pdf)



**Regional Multi-Modal Mobility Program
(RM3P) Initiative**

EXHIBIT 1: INDUSTRY DAY WEBINAR PRESENTATION

Regional Multi-Modal Mobility Program



June 25, 2020