State of Rhode Island

Department of Administration
Division of Purchases
One Capitol Hill
Providence, RI 02908

REQUEST FOR PROPOSAL (RFP) – BID# 7606825

PAVEMENT MANAGEMENT SYSTEMS CONSULTANT SERVICES

SUBMISSION DEADLINE: August 04, 2020 at 11:30 am

PRE-BID CONFERENCE: ☒ **NO**
☐ **YES** _____

Mandatory: ☐ **NO**
☐ **YES:** Any vendor who intends to submit a bid proposal in response to this solicitation must have its designated representative attend the mandatory pre-bid conference. The representative must register at the pre-bid conference and disclose the identity of the vendor whom he/she represents. Because attendance at the pre-bid conference is mandatory, a vendor's failure to attend and register at the pre-bid conference shall result in disqualification of the vendor's bid proposal as non-responsive to the solicitation.

Buyer Name: **Marisa DelFarno**
Title: **Buyer I**

QUESTIONS Prospective bidders are hereby notified that all questions pertaining to this contract must be submitted to the Department of Transportation in writing through its website at http://www.dot.ri.gov/contracting/bids by accessing the questions & answers menu located within the 'contracting', then 'bidding opportunities' link. Response to the submitted questions will also be posted under this link as an addendum as appropriate. Phone calls will not be accepted.

SURETY REQUIRED: **NO**

BOND REQUIRED: **NO**

DISK BASED BID: ☒ **NO**
☐ **YES:** See attached Disk Based Bidding Information

NOTE TO VENDORS:
Vendors must register on-line at the Rhode Island Division of Purchases website at www.ridop.ri.gov. Offers received without the completed four-page Rhode Island Vendor Information Program (RIVIP) Generated Bidder Certification Cover Form attached may result in disqualification.

THIS IS NOT A BIDDER CERTIFICATION FORM

State of Rhode Island
Department of Administration / Division of Purchases

One Capitol Hill, Providence, Rhode Island 02908-5855

Tel: (401) 574-8100 Fax: (401) 574-8387

COVID-19 EMERGENCY PROTOCOL FOR BID OPENINGS

RFP# 7606825 at August 04, 2020 at 11:30 am

Vendors and the public are advised that due to Covid-19 emergency social distancing requirements bid openings at the Division of Purchases shall be conducted via live streaming on the ZOOM website/application . Vendors and the public shall not be permitted to enter the Division of Purchases to attend bid openings. Vendors and the public who attend bid openings via live streaming shall be required to identify themselves and a record of all such attendees shall be maintained by the Division of Purchases. Vendor bid proposals shall be opened and read aloud at the date and time listed herein. The results of bid solicitations requiring a public copy for public works projects shall be posted on the Division of Purchases website as soon as possible after the bid opening. For RFP solicitations only vendor names shall be read aloud at the opening.

Vendors and the public are further advised that visitor access to the Powers Building at One Capitol Hill, Providence, RI requires pre-screening at the entrance to the building. In accordance with the Governor's Executive Order(s) and Department of Health emergency regulations all visitors to the Powers Building must wear a cloth mask which covers the nose and mouth. Vendors delivering bid proposals to the Division of Purchases should allow sufficient time for the pre-screening process. The Division of Purchases assumes no responsibility for delays caused by the screening process or any other reason. Vendors are solely responsible for on time delivery of bid proposals. The Division of Purchases shall not accept late bids for any reason.

Division of Purchases is inviting you to a scheduled Zoom meeting.

Topic: 7606825
Time: Aug 4, 2020 11:30 AM Eastern Time (US and Canada)

Join Zoom Meeting
https://zoom.us/j/93516039926?pwd=R3I1MUFXMFRWdG1JcnBBaXgwU2xTZz09

Meeting ID: 935 1603 9926
Password: 028010
One tap mobile
+13126266799,,93516039926#,,,,0#,,028010# US (Chicago)
+16465588656,,93516039926#,,,,0#,,028010# US (New York)

Dial by your location
+1 312 626 6799 US (Chicago)
+1 646 558 8656 US (New York)
+1 301 715 8592 US (Germantown)
+1 346 248 7799 US (Houston)
+1 669 900 9128 US (San Jose)
+1 253 215 8782 US (Tacoma)
877 853 5247 US Toll-free
888 788 0099 US Toll-free
833 548 0276 US Toll-free
833 548 0282 US Toll-free
Meeting ID: 935 1603 9926
Password: 028010
Find your local number: https://zoom.us/u/aQe1xA7Bk

CONSULTANT SERVICES TO EVALUATE RIDOT'S PAVEMENT MANAGEMENT SYSTEM

Rhode Island Department of Transportation
Two Capitol Hill
Providence, RI 02903

July 17, 2020

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RHODE ISLAND DEPARTMENT OF TRANSPORTATION
Asset Management
CONSULTANT SERVICES TO EVALUATE RIDOT'S PAVEMENT MANAGEMENT SYSTEM
Request for Technical Proposals
DBE Goal: 12%
Solicitation # 7606825

A. INTRODUCTION

The Rhode Island Department of Administration/Division of Purchases, on behalf of the Rhode Island Department of Transportation (RIDOT) is soliciting proposals from qualified firms to provide Pavement Management System (PMS) Consultant Services. The selected Consultant will conduct preliminary investigations, analyze, document, and recommend proposed alternatives, review RIDOT's PMS methodology, including the processes and procedures for collection of pavement condition information, perform an internal quality assurance review, review pavement condition information processing, storage and use, perform future condition forecasting, and develop treatment recommendations. Included in this analysis will be review of the existing PMS dTIMS© 9.5 software capabilities and recommendations on how to maximize software capability and/or alternative software systems recommendations.

It is the intent of RIDOT to contract with a professional technical firm familiar with and experienced in pavement engineering, pavement management, pavement life cycle planning, pavement data collection, pavement asset management software and systems, project cost estimating, Geographic Information Systems, and FHWA performance measures requirements. The aforementioned experience elements require a knowledge of engineering rather than an engineering consultant firm with knowledge of these elements. The selected consultant should have a minimum of 10-years work experience in pavement management and pavement engineering with a State DOT or other large pavement network administrator. Additionally, the selected firms shall be familiar with Federal Highway Administration (FHWA) pavement performance measures requirements and have knowledge and experience with the AASHTO Mechanistic Imperial Pavement Design Guide. Firms not possessing the required technical qualifications will be deemed non-responsive under this solicitation.

This is a request for Proposals, not a Request for Quotes. Responses will be evaluated based upon qualifications and the merits of the proposals in addition to cost. There will not be a public opening and reading of the responses received by the Division of Purchases pursuant to this solicitation other than to name those vendors who have submitted proposals. Respondents are instructed to submit a Technical Proposal along with a separately sealed Cost Proposal, both described in detail herein. RIDOT, in its sole discretion, may conduct interviews, seek written clarifications and conduct discussions on the Proposals during the evaluation and selection process. RIDOT reserves the right to conduct an independent investigation of all submitted information including but not limited to prior experience and project references.

CONTRACT TERM / CONDITIONS: The initial contract term will be three (3) years. At the exclusive option of the State, the contract may be extended for up to two additional one-year terms. If this contract is extended for any additional one-year terms, then prior to that extension, the parties will agree upon additional compensation terms.

B. SCOPE OF WORK

The selected firm will review RIDOT's Pavement Management System (PMS), the processes, procedures and systems the Department uses to analyze current pavement conditions; project future pavement conditions and recommend pavement treatments to preserve and/or improve pavement conditions. This project will be coordinated and managed under the direction of RIDOT's Planning Pavement Engineering Section in accordance with Federal and State Regulations.

Consultant firms must demonstrate a minimum of TEN (10) YEARS related Pavement Management Systems experience and possess a working knowledge of applicable State and Federal Transportation laws, RIDOT'S design and construction policies, procedures and standard specifications. The Consultant must also be familiar with the FHWA State DOT Data Quality Management Plan (DQMP), Highway Performance Monitoring System (HPMS), https://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/, RI State Transportation Improvement Plan, Federal Highway Transportation Performance and Reporting Targets and the dTIMS© Enterprise Pavement Management System software written by Deighton Associates, Ltd. The dTIMS© software currently acts as a library to house the state's pavement condition data.

TECHNICAL REQUIREMENTS AND DELIVERABLES

In general, performing preliminary investigations; and analyzing, documenting, and recommending alternatives.

1. The CONSULTANT will be required to use existing and future technology such as the PMP, VueWorks, dTIMS©, Scoping Application/Project Intake Tool, Roads & Highways, BRM, Lidar, MIRE Data, etc. The Consultant shall be responsible for any cost associated with the purchase of software required to perform the requested services.

2. For pavements, preliminary work may involve, but may not be limited to review of current conditions, limits and scope of improvements; review of information concerning handicapped ramps including existing conditions, sidewalk, curbing and guardrail; project future pavement conditions and recommend pavement treatments to preserve and/or improve pavement conditions.

3. For RIDOT Data Quality Management Plan (DQMP) published in May 2018, to comply with FHWA quality assurance requirement for the same, consultant shall review the DQMP and provide recommendations for improvement. Improvements may include refinements to the existing DQMP or recommendations for an alternative approach to data quality management while ensuring FHWA Acceptance.

4. For Automated Pavement Data Collection System, the CONSULTANT shall review the vendor contract and make recommendations for improvement and/or an alternative pavement data

collection methodology. The CONSULTANT shall also evaluate the method by which RIDOT receives the data and make recommendations for improvement and/or process simplification.

5. For Pavement Management System Software and Software Operation, the Consultant shall review the current dTIMS© software database setup in detail and provide recommendations on how to improve and/or simplify function of the system. The dTIMS© software currently acts as a library to house the state's pavement condition data. The review will include, but not be limited to the following:

    a. Evaluate existing database structure including database labeling and recommend improvements and/or software alternatives.

    b. Evaluate all processes and procedures used for the acquisition and import of all data used by the system and provide recommendations for improvement.

    c. Evaluate pavement data transformations, workflows, analysis sets, deterioration modeling, pavement treatment trigger expressions, condition resets and cost expressions and provide recommendations for improvement.

    d. Evaluate system analysis variables and recommend improvements.

    e. Evaluate economic analysis parameters including cost expressions and recommend improvements.

    f. Evaluate pavement condition forecasting methodology and recommend improvements or alternative methodologies.

    g. Evaluate pavement program formulation methodology and recommend improvements or alterative methodologies.

    h. Evaluate all associated workflows and make recommendations for improvement.

    i. Assist RIDOT as needed in implementing suggested recommendations or improvements.

    j. Consultant shall do other related work for pavement management and operations/support.

6. For GIS interface the CONSULTANT shall review and make recommendations on how GIS may be further and more efficiently integrated into both the HPMS and PMS. The review will include consideration of RIDOT's ongoing effort to migrate GIS into a single Authoritative Linear Reference System (ALRS), aka Roads & Highways.

7. For the Capitol Program, Transportation Improvement Program (TIP) programming process, the CONSULTANT shall review and provide recommendations for improvement or modification of the current activities and methodology associated with this capital programming to include:

    a. Developing and documenting the long-range pavement conditions projections.

    b. The methodology used to formulate annual capitol programs by defining selected treatments, estimating costs, and defining projected project development and construction schedules.

c. Establishing required ancillary activities such as required or desired ADA and storm water improvements to establish base scope, schedule and cost of pavement projects.

8. For Performance Measures: The CONSULTANT shall provide best practice review and recommendations for improvement of pavement management system, pavement condition forecasting methodology, gap analysis, and target setting and make recommendations for improvement or alternative methodologies. The review should be comprehensive and consistent with any recommendations for improvements to other components of the PMS. The Consultant shall review current RIDOT process and methodologies of the development of our pavement performance forecasting and target setting process for:

   a. State Performance Measures
   b. Federal Performance Measures (limited to National Highway System (NHS) roads only)
   c. State Reporting
   d. Federal Reporting

9. Submission of monthly progress reports to RIDOT will be required. Monthly progress reports must outline workhours, costs expended, and a statement as to whether there are sufficient work hours remaining to complete the project, Requisitions shall be processed for payment only if the required monthly progress reports are current.

10. The Consultant shall electronically submit all collected data and/or input it into the Department's various database systems, as required.

11. The Consultant may be required to assist in the writing/drafting /developing/documenting Standard Operating Procedures.

12. The Consultant shall permit RIDOT to review, at any time, all work performed under the terms of this Contract and agrees to conform to all instructions and directives issued by RIDOT.

13. The Consultant shall conform to State and Federal policies, manuals, publications, standards, forms and data required to carry out the work under the terms of this Contract.

C. PROCUREMENT SCHEDULE

RIDOT currently anticipates conducting this procurement in accordance with the following milestones. This schedule is subject to revision and RIDOT reserves the right to modify this schedule as it deems necessary and at its sole discretion.

Advertise RFP	July 17, 2020
Deadline for Questions	August 9, 2020
Proposal Due Date	August 18, 2020
Contract Award	Fall of 2020

D. INSTRUCTIONS AND NOTIFICATIONS TO BIDDERS

1. Potential vendors are advised to review all sections of this RFP carefully and to follow instructions completely, as failure to make a complete submission as described elsewhere

herein may result in rejection of the proposal.

2. Alternative approaches and/or methodologies to accomplish the desired or intended results of this RFP are solicited. However, proposals which depart from or materially alter the terms, requirements, or scope of work defined by this RFP may be rejected as being non-responsive.

3. Proposals are considered to be irrevocable for a period of not less than 180 days following the opening date, and may not be withdrawn, except with the express written permission of the State Purchasing Agent.

4. It is intended that an award pursuant to this RFP will be made to a prime vendor, or prime vendors in the various categories, who will assume responsibility for all aspects of the work. Subcontracts are permitted, provided that their use is clearly indicated in the vendor's proposal and the subcontractor(s) to be used is identified in the proposal.

5. The purchase of goods and/or services under an award made pursuant to this RFP will be contingent on the availability of appropriated funds.

6. Vendors are advised that all materials submitted to the Division of Purchases for consideration in response to this RFP may be considered to be public records as defined in RIGL § 38-2-1, et seq. and may be released for inspection upon request once an award has been made. Any information submitted in response to this RFP that a vendor believes are trade secrets or commercial or financial information which is of a privileged or confidential nature should be clearly marked as such. The vendor should provide a brief explanation as to why each portion of information that is marked should be withheld from public disclosure. Vendors are advised that the Division of Purchases may release records marked confidential by a vendor upon a public records request if the State determines the marked information does not fall within the category of trade secrets or commercial or financial information which is of a privileged or confidential nature.

7. The Vendor will be required to have an active registration in SAM^{SM} (System for Award Management) prior to contract award. Respondents are encouraged to register as part of the procurement process. The System for Award Management is an official website of the U.S. government and there is no cost to use SAM^{SM}.

8. Potential Respondents are instructed to peruse the Division of Purchases website http://www.purchasing.ri.gov/bidding/BidSearch.aspx regularly as additional information relating to this solicitation may be released in the form of an addendum.

9. By submission of proposals in response to this RFP vendors agree to comply with R. I. General Laws § 28-5.1-10 which mandates that contractors/subcontractors doing business with the State of Rhode Island exercise the same commitment to equal opportunity as prevails under Federal contracts controlled by Federal Executive Orders 11246, 11625 and 11375.

10. Vendors are required to ensure that they, and any subcontractors awarded a subcontract under this RFP, undertake or continue programs to ensure that minority group members, women, and persons with disabilities are afforded equal employment opportunities without discrimination on the basis of race, color, religion, sex, sexual orientation, gender identity or expression, age, national origin, or disability.

11. Vendors and subcontractors who do more than $10,000 in government business in one year are prohibited from engaging in employment discrimination on the basis of race, color, religion, sex, sexual orientation, gender identity or expression, age, national origin, or disability, and are required to submit an "Affirmative Action Policy Statement."

12. Vendors with 50 or more employees and $50,000 or more in government contracts must prepare a written "Affirmative Action Plan" prior to issuance of a purchase order.

    a. For these purposes, equal opportunity shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, termination, and rates of pay or other forms of compensation.

    b. Vendors further agree, where applicable, to complete the "Contract Compliance Report" (http://odeo.ri.gov/documents/odeo-eeo-contract-compliance-report.pdf), as well as the "Certificate of Compliance" (http://odeo.ri.gov/documents/odeo-eeo-certificate-of- compliance.pdf), and submit both documents, along with their Affirmative Action Plan or an Affirmative Action Policy Statement, prior to issuance of a purchase order. For public works projects vendors and all subcontractors must submit a "Monthly Utilization Report" (http://odeo.ri.gov/documents/monthly-employment-utilization-report-form.xlsx) to the ODEO/State Equal Opportunity Office, which identifies the workforce actually utilized on the project.

E. ADMINISTRATIVE REQUIREMENTS AND NOTIFICATIONS

1. Proposals received shall be in accordance with guidelines as outlined in this request and the State's General Conditions of Purchase which may be accessed through the Rhode Island Vendor Information Program "RIVIP" at http://www.ridop.ri.gov.

2. All Respondents must register online at the Rhode Island Vendor Information Program (RIVIP) @ http://www.ridop.ri.gov. The RIVIP Bidder Certification Cover Sheet must accompany each Technical Proposal. The document must be downloaded from the RIVIP website. Call (401) 574-8100 and request the RIVIP Help Desk for assistance. Office Hours: 8:30 am – 4:00 pm.

3. The Rhode Island Department of Transportation, in accordance with Title VI of the Civil Rights Act of 1964, 42 U.S.C. §§ 2000d - 2000d-4 and 49 C.F.R. Part 21, Nondiscrimination in Federally-Assisted Programs of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964, issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, Disadvantaged Business Enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, national origin, age, or disability in consideration for an award.

4. All pricing submitted will be considered to be ***firm* and *fixed*** unless otherwise indicated herein.

5. Responses misdirected to other State locations or which otherwise are not received by the State Division of Purchases by the established due date for any cause will be determined to be late and will not be considered. The office clock, for the purpose of registering the arrival of a document, is in the reception area of the Department of Administration (DOA), Division of Purchases, One Capitol Hill, Providence, Rhode Island.

6. Respondents must possess a working familiarity with the guidelines outlined in the *Rhode Island Standard Specifications for Road and Bridge Construction, 2004 edition amended March 2018* and all subsequent revisions. http://www.dot.ri.gov/business/bluebook.php

7. In accordance with RI Gen. Laws 7-1.1-1401, no **foreign corporation** (a corporation not established in Rhode Island) has the right to transact business in this State until it has procured a Certificate of Authority to do so from the Office of the Secretary of State https://www.sos.ri.gov/. If applicable, a copy of the Vendor's Certificate of Authority must be provided prior to contractaward.

8. A proposal may be withdrawn at any time prior to the proposal due date by means of a written request signed by the authorized representative of the Proposer. Such written request shall be delivered to the RI Department of Administration at the address cited below. The withdrawal of a Proposal will not prejudice the right of a Proposer to file a new Proposal provided that it is received before the time due on the Proposal due date.

9. There will be no stipend offered to Respondents who are not selected to provide the requested services. All costs associated with developing or submitting documents in response to this solicitation and/or in providing oral or written clarification of its content shall be borne by the Respondent. All materials received in response to this RFP shall become the property of the State and shall not bereturned.

10. All Proposals submitted to the State become the property of the State and are subject to the disclosure requirements of the Rhode Island Access to Public Records Act (APRA). Respondents are advised to familiarize themselves with the provisions of this Act to ensure that documents identified as confidential will not be subject to disclosure under APRA. In no event shall the State, the Director, or RIDOT be liable to a Respondent for the disclosure of all or a portion of a Proposal submitted pursuant to this request not properly identified as confidential.

F. DISADVANTAGED BUSINESS ENTERPRISE(S) GOAL

This project has been assigned a twelve percent (12%) Disadvantaged Business Enterprise (DBE) Goal. The goal applies to the total contract value, i.e., it shall include Contract Change Orders. Firms will receive credit toward the DBE goal only when a DBE performs a Commercially Useful Function (CUF). A DBE performs a Commercially Useful Function when it is responsible for execution of the contract work or a distinct element of the work by actually performing, managing and supervising the work involved. In addition, DBE firms must perform those services for which the firm has been approved for based upon the Primary North American Industry Classification System (NAICS).

A list of current Rhode Island State certified DBE firms may be obtained at the Rhode Island Office of Diversity, Equity & Opportunity website http://odeo.ri.gov/ DBE firms must be certified at the time the Proposal is submitted. A detailed disclosure of RI certified DBE firm(s} and proposed task assignment(s} to be performed must be included in the Technical Proposal along with a copy of current state certification letter(s). Questions regarding the program may be directed Sheree Gomes, RIDOT Office of Civil Rights at 401-563-4691. The Consultant will be required to submit a Monthly DBE Utilization Report utilizing RIDOT's Civil Rights software, currently PRISM. There is no cost for the software. If your firm or Sub-Consultants require training on this software, please contact Nathan Shapiro at 401-563-4410.

G. QUESTIONS

There will be no point of contact at RIDOT who will directly answer questions either in person, through e-mail, or by telephone. Questions regarding this solicitation shall be posted at RIDOT'S "Bidding Opportunities" web page accessible at: www.dot.ri.gov. Follow the link to Doing Business → Contractors and Consultants →Bidding Opportunities → Select the question mark "?" next to the applicable project to submit questions. Questions will not be accepted after noon on August 9, 2020. Upon the close of questions, all questions and responses posted by RIDOT will be subsequently posted as an addendum at www.ridop.ri.gov and incorporated into the contract.

H. DUE DATE, TIME AND LOCATION

Proposals may be submitted utilizing U.S.P.S., express delivery service, or hand delivered. Packages must be in a sealed envelope or box marked "***RFP# 7606825 Consultant Services to Evaluate RIDOT's Pavement Management System***" and submitted by August 18, 2020 at 11:30 am to:

RI Department of Administration
Division of Purchases (2nd floor)
One Capitol Hill
Providence, RI 02908-5855

Be advised that visitor access to the Powers Building at One Capitol Hill requires pre-screening at the building entrance. In accordance with Governor Raimondo's Executive Order(s) and Dept of Health emergency regulations all visitors to the Powers Building must wear a cloth mask that covers the nose and mouth. Respondents delivering proposals to the Division of Purchases should allow sufficient time for the pre-screening process. The Division of Purchases assumes no responsibility for delays caused by the screening process. Respondents are solely responsible for on-time delivery of bids. Late Bids will not be accepted for any reason.

REQUIRED FORMS: The following forms must be included each submission package

Required Forms		
Required Forms (except for W-9) are attached	Prime	Subs
W-9 Form available @ https://www.ridop.ri.gov	✓	
RIVIP	✓	
Debarment Form	✓	✓
Lobbying Form	✓	✓
Conflicts Disclosure Form-for Board of Directors, key personnel and anyone who has a potential conflict to disclose	✓	✓

Certification for Title VI Assurance	✓	✓
DBE Special Provision	✓	

I. INSURANCE

The VENDOR must procure at their own expense and maintain for the contract term the required insurance coverages as defined in the State's General Conditions of Purchase, Addendum A - General Requirements- Schedule A2- Professional Services; https://www.ridop.ri.gov/documents/general-conditions- addendum-a.pdf. The State of Rhode Island shall be included as Additional Insureds on a Primary and Non-Contributory basis on the Commercial General Liability and Automobile Liability policies. In addition, Waiver of subrogation in favor of the State shall apply to the Commercial General Liability, Automobile Liability, and Workers Compensation coverages. Waiver of Subrogation shall apply to the Professional Liability insurance to the extent the Contract Party is not impaired. Respondents are not required to provide Certificates of Insurance with the Technical Proposal.

J. INSTRUCTIONS FOR PROPOSALS

Submit seven (7) copies of the Technical Proposal that are GBC or spiral bound in a single volume. The Proposal shall be printed on 8½" x 11" paper sequentially numbered. The Technical Proposal shall contain a Table of Contents that cross-references each requirement with specific pages in the technical submission. Each Proposal shall also include a searchable electronic (pdf) version clearly labeled on a CD-R attached to the inside cover of each Proposal. Thumb or flash drives are not acceptable. Submit three (3) copies of the Cost Proposal at the same time as the Technical Proposal but in a separately sealed envelope marked as such. The Cost Proposal must be submitted on the form provided with this solicitation.

Technical Proposals must include, at a minimum, the following information for review:

1. ***Letter of Transmittal***: A Letter of Transmittal shall accompany each response signed by an owner, officer, or other authorized agent of the firm.

2. ***RIVIP Bidder Certification Form***: The form shall be included with each copy of the Technical Proposal. Failure to make a complete submission of this document may result in disqualification.

3. ***Company Introduction:*** Respondents are to include a complete description of their organizational structure and other relevant information documenting the firm's professional practice and areas of specialization.

4. ***Prior Experience:*** Respondents shall have a minimum of 10-years work experience in pavement management and pavement engineering and be able to demonstrate the successful completion of a minimum of two Pavement Management System projects with State Departments of Transportation or other large pavement network administrators. Respondents shall submit samples of previous work product on CD-R or provide hyperlinks.

5. ***Client References*:** Names, addresses, and telephone numbers of at least THREE (3) previous clients who are familiar with the services provided by your firm shall be included. By so listing, specific permission is granted to RIDOT to contact said individuals to verify the satisfactory performances of the services provided Respondent acknowledges that RIDOT is granted specific permission to discuss past performance of Respondent and any of its proposed team members on any projects.

6. ***Existing Workload:*** Respondents are to include a current listing of all projects contracted to perform along with estimated completion dates.

7. ***Staff Qualifications*:** Key personnel assigned shall demonstrate a minimum of ***FIVE (5) YEARS relevant Pavement Management System experience.*** Respondents are to include the qualifications of qualified personnel including resumes, staff assignments and concentration of effort for each staff member identified. Respondents must demonstrate adequately trained staff necessary to complete the scope of services in a timely manner. Respondents shall include any applicable certification(s) and/or professional registration(s) which are pertinent to this project initiative.

8. ***Project Approach:*** Respondents shall provide a detailed technical synopsis of their proposed services based on the SOW requested including any technical issues or challenges that may be confronted at each stage of the project. Proposed approach will be assessed for its feasibility, responsiveness to the SOW, effectiveness and thoroughness.

9. ***Work Plan:*** Proposal must describe in detail the methodology proposed to accomplish the required work. This should include: task identification, activity milestones, and description of delivered work products.

10. ***Samples of Previous Work*:** Submit at least 2 samples of previous work. Samples may be submitted on a CD-R, DVD or provide links to websites.

K. EVALUATION CRITERIA

EVALUATION CRITERIA:		
1.	**FIRM'S CAPABILITY, CAPACITY, AND STAFF QUALIFICATIONS** a. Firm's experience providing similar services of similar scope, technical expertise and significance b. Project Personnel's experience in evaluating Pavement Management systems, technical expertise and significance c. Firm's professional focus on analysis of pavement Management Systems	**0-10 POINTS** **0-10 POINTS** **0-10 POINTS**
2.	**SAMPLES OF PREVIOUS WORK** (submitted on CD-R or hyperlinks provided	**0-20 POINTS**
3.	**APPROACH TO SCOPE AND PROJECT METHODOLOGY** a. Proposer's demonstration of a clear understanding of the project requirements b. Quality of the project work plan and proposed schedule/timeline	**0-10 POINTS** **0-10 POINTS** **70 TECHNICAL POINT MAX**
Technical Proposals receiving scores of less than 55 POINTS out of the 70 eligible POINTS will NOT be scored for cost and will be disqualified.		

4.	**COST PROPOSAL (Evaluated separately)**	**30 COST POINT MAX**
	MAXIMUM TOTAL SCORE	**100 POINTS**

Technical and **Cost Proposals** will be evaluated separately. **Cost Proposals** will remain sealed until the technical scoring evaluation has been completed. ***Technical Proposals receiving scores of less than 55 POINTS out of the 70 eligible POINTS will NOT be scored for cost and will be disqualified.***

Cost Proposals will be scored and ranked as follows:

1. The Respondent submitting the lowest Cost Proposal will be awarded the maximum of thirty (30) points.
2. The next-lowest Price Proposal will be awarded points based on the product of: (a) the ratio of the lowest Price Proposal divided by the next-lowest Price and multiplied by thirty (30) points.
3. The process will continue for each of the remaining Price Proposals, with points being awarded based on the product of: (a) the ratio of the lowest price divided by the respective Respondent's price Proposal; and multiplied by Thirty (30) points (i.e., the points awarded for the lowest Price Proposal), with such product rounded up to the nearest one hundredth (0.01) of a point.

FOR EXAMPLE:

PROPOSER A = $100,000.00 — 100,000 / 100,000 x 30 MAX = 30 Points

PROPOSER B = $150,000.00 — 100,000 / 200,000 x 30 MAX = 15 Points

PROPOSER C = $200,000.00 — 100,000 / 300,000 x 30 MAX = 10 Points

L. METHOD OF PAYMENT

Respondents shall provide a fully inclusive hourly rate for every Personnel Category listed in the Cost Proposal sheet provided with the solicitation. Rates must include profit and overhead. These rates shall be the only eligible costs payable to the Consultant except for reimbursable expenses which require pre-approval from RIDOT.

M. CONFLICTS OF INTEREST

Each Respondent shall require its proposed team members to identify potential conflicts of interest or a real or perceived competitive advantage relative to this procurement. Respondents are notified that prior or existing contractual obligations between a company and a federal or state agency relative to the Project may present a conflict of interest or a competitive advantage. RIDOT, in its sole discretion, will make a determination relative to potential organizational conflicts of interest or a real or perceived competitive advantage, and its ability to mitigate such a conflict. Failure to abide by RIDOT's determination in this matter may result in a proposal being declared non-responsive. Conflicts of interest and a real or perceived competitive advantage are described in state and federal law.

N. REQUIREMENT TO KEEP TEAM INTACT

The team proposed by the Respondent shall remain for the duration of the procurement process and for the duration of the contract. If circumstances require a proposed change, it must be submitted in writing to RIDOT. The Department will determine whether to authorize a change. Unauthorized changes to the Respondent's team at any time during the procurement process may result in the elimination of the Respondent from further consideration.

O. INTERNAL CONTROL SYSTEMS

All Respondents must have internal control systems in place that meet federal requirements for accounting. These systems must comply with requirements of 48 CFR 31*, "Federal Acquisition Regulations, Contract Cost Principles and Procedures."*

P. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

The Vendor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 *et seq*. and US DOT regulations, "Program Fraud Civil Remedies" 49 CFR Part 31 apply to its actions pertaining to the Project. Upon execution of the underlying contract, the Vendor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or cause to be made, pertaining to the underlying contract or the FHWA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Vendor further acknowledges that if it makes, or causes to be made, a false, fictitious or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Respondent to the extent the Federal Government deems appropriate. The Vendor also acknowledges that if it makes, or causes to be made, a false, fictitious or fraudulent claim, statement,, submission, or d certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FHWA under the authority of 49 U. S. C. Chapter 53, the Government reserves the right to impose the penalties of 18 U S C § 1001 and 49 U S C § 5323(I) on the Vendor, to the extent the Federal Government deems appropriate.

The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal Assistance provided by FHWA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

Q. NO FEDERAL GOVERNMENT OBLIGATION TO THIRD PARTIES

The Vendor acknowledges and agrees that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or ward of the underlying Contract, absent the express written consent of the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to the Recipient, Vendor or any other party (whether or not a party to that Contract) pertaining to any matters resulting from the underlying Contract. The Vendor agrees to include the above clause in each subcontract financed in whole or in part with Federal Assistance provided by FHWA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

R. AMERICANS WITH DISABILITIES ACT

In accordance with Section 504 of the Rehabilitation Act of 1973, as amended 29 U.S.C. § 794, the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12101 *et seq*., the Architectural Barriers Act of 1968, as amended, 42 U.S.C. § 4151 *et seq*., the Vendor agrees that no qualified handicapped person shall, on the basis of handicap, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity which receives Federal financial assistance.

S. FEDERAL EQUAL EMPLOYMENT OPPORTUNITY (EEO) REQUIREMENTS

These include but are not limited to:

a. Nondiscrimination in Federal Public Transportation Programs:

   41 CFR 60-4.3 prohibits discrimination on the basis of race, color, religion, national origin, sex (including sexual orientation and gender identity), disability, or age, and prohibits discrimination in employment or business opportunity.

b. Prohibition against Employment Discrimination: Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e, and Executive Order No. 11246 "Equal Employment Opportunity", September 24, 1965, as amended, prohibit discrimination in employment on the basis of race, color, religion, sex or national origin.

T. TERMS AND CONDITIONS

1. Vendor firms shall permit RIDOT to review, at any time, all work performed under the terms of this Contract at any stage of the work, and to conform to all instructions and directives that may be issued by RIDOT.

2. In its Statement of Qualifications, each Proposer shall identify Key Personnel that will be assigned to the project. Those identifications will be deemed a binding commitment that if the Proposer should receive a Contract, those Team Members identified will in fact fulfill the designated role. Proposers are precluded from substituting, replacing, or removing any of the Key Personnel without the written consent of RIDOT to do so. This applies for entire contract term.

3. Vendor firms shall be responsible for the proper performance of the functions, duties, and services under this Contract, to furnish in such numbers at such time, and in such manner as RIDOT shall require, the services of personnel experienced in the pertinent technical fields described in the Scope of Work together with administrative and clerical personnel. Any person who, in RIDOT's opinion, is considered to be inexperienced, uncooperative, or whose services are not needed, or whose separation from the work would be in RIDOT's best interest, shall be removed from the project payroll immediately upon RIDOT request.

4. Vendor firms, upon request by RIDOT, shall furnish statements as to the experience record of any person employed under this Contract and the anticipated or actual duties to be performed by that person.

5. The Vendor must notify RIDOT of changes in personnel and submit the required credentials for approval. The proposed employee shall not begin work until approval has been granted by RIDOT.

6. All field notes, records, computations, work sheets, drawings, data, correspondence, and all other property resulting from the Vendor's services under this Contract will be the permanent property of RIDOT. RIDOT reserves the right to withhold the final payment to the Vendor until all property is transferred to RIDOT.

7. In conformance with RIDOT TAC-0255, "Financial Statements for Professional Services Contracts," for contracts valued at $500,000 or greater, the selected Vendor will be required to submit a Financial Review Report to RIDOT for review. All financial documentation submitted will be kept confidential and on permanent file in the Contract Administration Office.

8. RIDOT may terminate the entire Contract, or any portion thereof, when the Vendor is prevented from proceeding with the prescribed work for any of the following reasons:

   a. An Executive Order of the President of the United States with respect to the prosecution of war; in the interest of national defense; or any civil emergency or natural disaster.
   b. An Executive Order of the Governor of the State with respect to a natural disaster or civil emergency.
   c. Court orders relating to energy consumption, and orders or injunctions obtained by third party action resulting from national or local environmental protection laws.
   d. Discovery of unanticipated archaeological artifacts of a significant nature that would require extensive and time-consuming delays in the work for the purposes of identification, evaluation, and possibly recovery.
   e. Occurrence of an unanticipated environmental situation of a significant nature that would require extensive and time-consuming delays in the work for the purposes of identification, evaluation, and possibly mitigation.
   f. Any other circumstances beyond the control of either the Department or the Contractor that precludes the orderly prosecution or completion of the work and that is in the public interest.

COST PROPOSAL
Consultant Services to Evaluate RIDOT's Pavement Management System
SOLICITATION # 7606825

Vendor Name: _____

Street Address: _____

City: _____

State/Zip Code: _____

Personnel Category	Name	Hourly Rate	Project Hrs	Cost
Project Manager			70	$0.00
Sr. Pavement Analyst			280	$0.00
Pavement Analyst			360	$0.00
Sr. Pavement Systems Analyst			170	$0.00
Pavement Systems Analyst			100	$0.00
Administrative Assistant			20	$0.00
			Average Hourly Rate =	$0.00

Signed: _____

Print Name: _____

Offerors shall provide a fully inclusive, lump sum Hourly Rate for every Personnel Category. Rates must include profit & overhead. These shall be the only eligible costs payable to the Consultant except for reimbursable expenses which require Pre-Approval from RIDOT.

Offerors shall designate one Project Manager. However, multiple individuals may be proposed for the other personnel categories provided their qualifications are included in the Tech Proposal.

The hourly rates shall be effective for the initial three year contract term. If this contract is extended for any additional one-year terms, then prior to that extension, the parties will agree upon additional compensation terms.

Project Hours are included in the Average Hourly Rate calculation to account for the estimated level of effort for each Personnel Category. Actual Hours to complete the project will be higher.

The Average Hourly Rate is calculated as follows: Hourly Rate x Project Hours = Cost. Sum of the costs divided by 1000 = Average Hourly Rate.

Offerors that do not utilize this Cost Proposal sheet may be disqualified from further consideration.

CONSULTANTS

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS PRIMARY COVERED TRANSACTIONS FOR PRIME CONSULTANTS AND LOWER TIER PARTICIPANTS (SUBCONSULTANTS ETC.)

Appendix B - - certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions

INSTRUCTIONS FOR CERTIFICATION:

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, ineligibility And Voluntary Exclusion - - Lower Tier Covered Participants

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS PRIMARY COVERED TRANSACTIONS

In accordance with the code of Federal Regulations, Part 49 CFR Section 29.510, the prospective primary participant _____ (name of Authorized Agent), _____ (Title), being duly sworn (or under penalty of perjury under the laws of the United States), certifies to the best of his/her knowledge and belief, that its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a pubic (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statues or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification;

d. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall list exceptions below.

Exceptions will not necessarily result in denial of award, but, will be considered in determining contractor responsibility. For any exception noted, indicate below to whom it applies, the initiating agency, and the dates of the action. Providing false information may result in criminal prosecution or administrative sanctions. If an exception is noted the contractor must contact the Department to discuss the exception prior to award of the contract.

_____

_____

_____

_____ _____

Signature of Authorized Agent Date

Certification for Federal-Aid Construction/Consultant Contracts

IN ACCORDANCE WITH PUBLIC LAW 101-1210 SECTION 319 (DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES) THE PROSPECTIVE PARTICIPANT CERTIFIES, BY SIGNING AND SUBMITTING THIS BID OR PROPOSAL, TO THE BEST OF HIS/HER KNOWLEDGE AND BELIEF, THAT:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

(R.I.D.O.T. APPENDIX C)

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to Title 31, U.S.C. Section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract, grant, or loan award number, the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.
    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).

11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.

12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.

13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.

14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity,not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.

15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.

16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any o her aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (03-48-00-46), Washington, D.C. 20503.

Approved by
03-48-0046

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352 - 0348-0046
(see reverse for public burden disclosure)

1. Type of Federal Action: ☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	2. Status of Federal Action: ☐ a. bid/offer/application b. initial award c. post-award	3. Report Type: ☐ a. initial filing b. material change For Material Change Only: year _____ quarter _____ date of last report _____
4. Name and Address of Report Entity: ☑ Prime ☐ Subawardee Tier ___, if known: Congressional District, if known:	5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime: Congressional District, if known:	
6. Federal Department Agency:	7. Federal Program Name/Description: CFDA Number, if applicable: _____	
8. Federal Action Number, if known:	9. Award Amount, if known: $	
10. a. Name and Address of Lobbying Entity: (if individual, last name, first name, mi):	10. b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, mi):	
11. Amount of Payment (check all that apply) $_____ ☐ actual ☐ planned	13. Type of Payment (check all that apply): ☐ a. retainer ☐ b. one-time fee ☐ c. commission ☐ d. contingent fee ☐ e. deferred ☐ f. other; specify:	
12. Form of Payment (check all that apply): ☐ a. cash ☐ b. in-kind; specify: nature _____ value _____		
14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contracted, for Payment indicated in Item 11 (Attach Continuation Sheet(s) SF-LLL-A, if necessary):		
15. Continuation Sheet(s) SF-LLL-A attached: ☐ yes ☑ no		
16. Information requested through this form is authorized by title 31 U.S.C. section 1352. this disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No: _____ Date: _____	
For Federal use Only:	Authorized for Local Reproduction Standard Form – LLL-A	

Approved by
03-48-0046

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____

Authorized for Local Reproduction
Standard Form - LLL-A

CONFLICTS DISCLOSURE POLICY

To ensure that the Rhode Island Department of Transportation (RIDOT) maintains the continued confidence and trust of the people of Rhode Island in carrying out its mission, prospective vendors must disclose any family (or other personal) relationships, associations or connections that the vendor, its affiliates, or employees, may currently have with any RIDOT employee. A Conflicts Disclosure Statement shall be submitted to RIDOT from the following:

- Owners;
- Directors;
- Principals;
- Officers, board members, or individuals with corporate authority;
- If the vendor is a partnership, the applicant's partners;
- If the vendor is a limited liability company, its members and managers;
- Employees with decision-making authority, including executive directors, managers or individuals in a similar position with corporate authority; and
- Shareholders with a controlling interest.

RIDOT 12/27/07

CONFLICTS DISCLOSURE STATEMENT

RE: _____

_____

I, _____ **hereby certify as follows:**

I am employed as a _____ **of** _____
[TITLE] **[COMPANY]**
and to the best of my knowledge:

PLEASE CHECK THE APPROPRIATE BOX:

☐ **I have no family or personal relations currently employed either on a full-time or part-time basis at the Rhode Island Department of Transportation.**

☐ **I do have family or personal relations currently employed at the Rhode Island Department of Transportation. Please list their name(s), title(s), and RIDOT Division(s) (if known):**

NAME	TITLE	RIDOT DIVISION

If necessary, please add any additional names as attachments hereto.

FOR ILLUSTRATIVE PURPOSES, FAMILY RELATIONS SHALL INCLUDE, WHETHER BY BLOOD, ADOPTION OR MARRIAGE, ANY OF THE FOLLOWING RELATIONSHIPS:

Father, Mother, Son, Daughter, Brother, Sister, Grandfather, Grandmother, Grandson, Granddaughter, Father-In-Law, Mother-In-Law, Brother-In-Law, Sister-In-Law, Son-In-Law, Daughter-In-Law, Stepfather, Stepmother, Stepson, Stepdaughter, Stepbrother, Stepsister, Half-Brother Or Half-Sister, Niece, Nephew, And Cousin

❖ *If you are unsure whether a relationship, association, or connection you have may need to be disclosed, please consult with RIDOT's Legal Office at (401) 222-6510.*

_____

SIGNATURE **DATE**

By signing this form you: (1) certify that the information contained in this form is complete and accurate to the best of your knowledge; and (2) acknowledge your continuing obligation to complete and submit a new Disclosure form when there is any change in your family or personal relations during the course of this Contract.

This document is used for internal RIDOT purposes only in order to address and avoid any potential conflicts at the inception of the contract process and to avoid any impropriety or the appearance of impropriety during the contract process. Any disclosures made hereto will not prejudice prospective vendors from selection.

USDOT Standard Title VI/Nondiscrimination Assurances for Contractors DOT Order 1050.2A

I, _____ _____, _____, a duly
authorized representative of _____
do hereby certify that the organization affirmatively agrees to the provisions set forth by *U.S. DOT Order 1050.2A, DOT Standard Title VI Assurances and Non-Discrimination Provisions (April 11, 2013)*

_____
Signature

_____
Date

APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions**: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

<u>Pertinent Non-Discrimination Authorities:</u>

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq*.), (prohibits discrimination on

the basis of sex);

- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq*.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq*.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq*).

Last Update: November 2017

DBE SPECIAL PROVISION

DISADVANTAGED BUSINESS ENTERPRISE AFFIRMATIVE ACTION CERTIFICATION FOR CONTRACTORS AND CONSULTANTS

With respect to the above numbered project, I hereby certify that I am the _____ and duly authorized representative of _____ whose address is _____ _____.

I do hereby certify that it is the intention of the above organization to affirmatively seek out and consider Disadvantaged Business Enterprises to participate in this contract as contractors, subcontractors and/or suppliers of materials and services. I agree to comply with the requirements of the U.S. Department of Transportation's regulations 49 CFR Part 26.

I understand and agree that any and all contracting in connection with this contract, whether undertaken prior to or subsequently to award of contract, will be in accordance with this provision. I also understand and agree that no contracting will be approved until the State Department of Transportation has reviewed and approved the affirmative actions taken by the above organization.

DEFINITIONS:

A "Broker," for purposes of this provision, is a DBE that has entered into a legally binding relationship to provide goods or services delivered or performed by a third party.

A "DBE Contractor" or "DBE Subcontractor," for purposes of this provision, is a DBE that has entered into a legally binding relationship with an obligation to furnish services, including the materials necessary to complete such services.

"Disadvantaged Business Enterprise" or "DBE," for purposes of this provision, means a for-profit small business concern certified by the Rhode Island Department of Administration, under U.S. Department of Transportation certification guidelines (a) that is at least 51 percent owned by one or more socially and economically disadvantaged individuals or, in the case of any corporation, in which 51 percent of the stock is owned by one or more such individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

A "Joint Venture," for purposes of this provision, is an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

A "Manufacturer," for purposes of this provision, is a DBE that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the contract and of the general character described by the specifications.

A "Regular Dealer" is a DBE that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the

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public in the usual course of business. In the sale of bulk items, such as cement, asphalt, steel and stone, a DBE firm may be considered a "regular dealer" if it owns and operates the distribution equipment used to deliver its products. Any additional equipment used by a regular dealer shall be through long-term lease agreements rather than on an ad hoc or contract-by-contract basis.

"Race conscious" measures (goals) or programs are those that are focused specifically on assisting DBEs.

"Race neutral" measures (goals) or programs are those that are, or can be, used to assist all small businesses, including DBEs.

"Small Business Concern" means, with respect to firms seeking to participate as DBEs in DOT-assisted contracts, a small business concern as defined pursuant to Section 3 of the Small Business Act and Small Business Administration regulations implementing it (13 CFR part 121), and that does not also exceed the cap on average annual gross receipts specified in 49 CFR 26.65(b).

"Socially and economically disadvantaged individual" means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who has been subjected to racial or ethnic prejudice or cultural bias within American society because of his or her identity as a member of a group and without regard to his or her individual qualities. The social disadvantage must stem from circumstances beyond the individual's control.

1. Any individual who a recipient finds to be a socially and economically disadvantaged individual on a case-by-case basis.
2. Any individual in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:
    a. "Black Americans," which includes persons having origins in any of the Black racial groups of Africa;
    b. "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South America, or other Spanish or Portuguese culture or origin, regardless of race;
    c. "Native Americans," which includes persons who are enrolled members of a federally or State recognized Indian Tribe[1], Alaska Natives, or Native Hawaiians;
    d. "Asian-Pacific Americans," which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), Republic of Northern Marianas Islands, Macao, Fiji, Tonga, Kirbati, Tuvalu, Nauru, Federated States of Micronesia, or Hong Kong;
    e. "Subcontinent Asian Americans," this includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal, or Sri Lanka;
    f. Women; and
    g. Any additional groups whose members are designated as socially and economically disadvantaged by the Small Business Administration (SBA), at such as time as the SBA designation becomes effective.
3. Being born in a particular country does not, standing alone, mean that a person is necessarily a member of one of the groups listed in this definition.

[1] A "tribally-owned concern" means any concern at least 51 percent (51%) owned by an Indian tribe as defined in 49 CFR 26.5.

I. GENERAL REQUIREMENTS AND SANCTIONS:

A. Failure by the Contractor to demonstrate every good faith effort in fulfilling its DBE commitment during the construction period will result in the reduction in contract payments by the amount determined by multiplying the awarded contract value by the established DBE percentage (listed in Section II. A. below), and subtracting the dollar value of the work actually performed by DBE contractors. This action will not preclude RIDOT from imposing sanctions or other remedies available as specified in paragraphs below.

B. Contractors and subcontractors are advised that failure to carry out the requirements of this provision shall constitute a breach of contract and, after notification by the Department, may result in termination of the agreement or contract by the Department, or such remedy as the Department deems appropriate. Greater detail of the rules and regulations regarding DBE utilization can be found in the Rules and Regulations for RIDOT DBE Program.

C. Brokering of work by DBEs is not allowed and is a contract violation unless DBE is a certified DBE broker. A DBE firm involved in brokering of work may have their certification removed or suspended and shall be subject to the sanctions stated herein. Any firm that engages in willful falsification, distortion or misrepresentation with respect to any facts related to the project shall be subject to sanctions described in paragraph (B) above and referred to the U.S. Department of Transportation's Office of the Inspector General for prosecution under Title 18, USC Section 1001.

D. The Disadvantaged Business Enterprises Directory or other available resources may be obtained at the Rhode Island Department of Transportation Office of Civil Rights (OCR), 2 Capitol Hill, Providence, RI 02903, or at http://odeo.ri.gov/.

E. The utilization of Disadvantaged Business Enterprises is in addition to all other equal opportunity requirements of this contract. The Contractor shall keep such records as are necessary to determine compliance with its Disadvantaged Business Enterprises Utilization obligations. The records kept by the Contractor shall include:
   1. The number of DBE contractors, subcontractors and suppliers; and the type of work, materials or services being performed on or incorporated in this project.
   2. The progress and efforts being made in seeking out DBE contractor organizations and individual DBE contractors for work on this project.
   3. Documentation of all correspondence, contacts, telephone calls, etc. necessary to obtain the services of DBEs on this project.
   4. Copies of canceled checks or other documentation that substantiates payments to DBE firms.
   5. All such records must be maintained for a period of three (3) years following acceptance of final payment and will be available for inspection by RIDOT and the Federal Highway Administration.

F. A contractor for a construction contract will not be eligible for award of contract under this invitation for bids unless such contractor has submitted, at the time of the Bid Opening, this Certification. A Consultant will be required to sign this Certification at the time of the contract execution or the award of contract will be nullified.

II. PRE-AWARD REQUIREMENTS:

A. Prior to contract award and within five (5) days from the opening of bids, the contractor/consultant shall, at a minimum, take the following actions to meet the race-conscious goal established by OCR, hereinafter referred to as the 'contract goal,':
   1. Appoint an EEO Officer to administer the Contractor's DBE obligations.
   2. Submit to the RIDOT Construction Section for approval any subcontractor and/or supplier, and submit executed subcontract agreement(s)/purchase orders, including a detailed description of the

work and price, between the contractor and the qualified DBE to be utilized during the performance of work. In the case of consultant contracts, the consultant shall submit the above DBE obligation as stated in the Scope of Work. This DBE obligation shall be included in the proposal submission to the Design Section, and include the name of the DBE, scope of work, and the actual dollar value.

3. Each construction subcontract submitted shall be accompanied by a completed "DBE Utilization Plan" that specifies the items of work to be performed and the contractor's commitment to complete each subcontract entered into with a DBE pursuant to meeting the contract goal stated herein.
4. Any subcontract for materials or supplies provided by a DBE broker, or for other services not provided directly by a DBE firm, shall be accompanied by the RIDOT Broker Affidavit form.

B. In the event that the cumulative percentages submitted do not equal or exceed the contract goal, RIDOT will conduct a good faith effort (GFE) review to determine the extent of the prime contractor's efforts to seek out DBEs and afford adequate subcontracting opportunities to meet the contract goal. Evidence in support of the prime's actions must be submitted using RIDOT's Good Faith Effort Form (GFEF). This form contains examples of the types of evidence set forth in 49 CFR Part 26, Appendix A. RIDOT will consider this and other relevant evidence in making its GFE determination.

1. Where RIDOT has determined that the prime contractor made every good faith effort to meet the contract goal, the contract shall be awarded.
2. Where RIDOT has determined that the prime contractor failed to make every good faith effort in meeting the contract goal, the contract shall not be awarded, and an opportunity for administrative reconsideration shall be provided.

III. CONSTRUCTION PERIOD REQUIREMENTS:

A. Counting of Participation and Commercially Useful Function (CUF)

The total dollar value of a prime contract awarded to a DBE will be counted toward the DBE requirement. Likewise, all subcontract work performed by a DBE will count toward the DBE requirement.

The allowable value of a subcontract with DBE participation will be treated as the commitment of the prime contractor toward meeting the contract goal. The specific rules for crediting DBE participation toward contract goals are as follows:

1. When a DBE participates in a contract, RIDOT will consider only the value of the work actually performed by the DBE toward DBE goals. RIDOT includes the entire amount of that portion of a construction contract (or other contract not covered by paragraph (3) of this section) that is performed by the DBE's own forces. RIDOT credits the cost of supplies and materials purchased or leased by the DBE subcontractor for the work of the contract. However, supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate are not counted toward participation.
2. RIDOT credits the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a USDOT-assisted contract, toward DBE goals, provided the fee is determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.
3. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.
4. When a DBE performs as a participant in a *joint venture*, RIDOT will count a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces toward DBE goals.

RIDOT will count expenditures to a DBE contractor toward DBE goals only if the DBE is performing a commercially useful function (CUF) on that contract.

1. A DBE performs a CUF when it is responsible for execution of the work of the contract, and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, RIDOT evaluates the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors. Even if a DBE is performing pursuant to normal industry practices, if those practices, in fact, erode the ability of the DBE to control its work and remain independent, the practice may affect how much can be credited toward the DBE goal and may raise questions about the DBE eligibility.
2. Suppliers: A supplier is considered to perform a CUF when it packages, i.e. takes quotes from several manufacturers, and/or sells from its own inventory in order to provide one or more items to a contractor. A supplier may own a franchise and/or may be a factory representative to one or more manufacturers. Consistent with a contractor's probable needs, a supplier, not a contractor, may place orders for production with manufacturers.
3. "Pass through" supply operations occur when the contractor decides what items shall be bought from what sources and/or agrees directly with the manufacturer, or other non-DBE party, to schedule delivery and/or directs adjustments and/or routes payments and purchase orders through the DBE. Pass through operations are not commercially useful functions and will not be counted toward contract goals.
4. Management: The DBE must manage the work that has been contracted to its firm. The DBE owner must supervise daily operations, either personally, or with a full-time, skilled and knowledgeable superintendent employed by and paid wages by the DBE. The superintendent must be present on the job site and under the DBE owner's direct supervision. The DBE owner must make all operational and managerial decisions for the firm. Mere performance of administrative duties is not considered supervision of daily operations.
5. Workforce: In order to be considered an independent business, a DBE must keep a regular workforce. DBEs cannot "share" employees with non-DBE contractors, particularly the prime contractor. The DBE shall perform its work with employees normally employed by and under the DBE's control, see paragraph 9 of this section. The DBE must be responsible for payroll and labor compliance requirements for all employees performing on the contract and is expected to prepare and finance the payrolls. Direct or indirect payments by any other contractor are not allowed.
6. Trucking: RIDOT will consider the following factors in determining whether a DBE trucking company is performing a CUF. The DBE must manage and supervise the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.
    a. The DBE itself must own and operate at least one fully licensed, insured, and operational vehicle being used on the contract.
    b. The DBE must receive compensation for the total value of the services it provides on the contract using vehicles it owns, insures, and which are operated by drivers it employs.
    c. The DBE may lease vehicles from another DBE firm, including an owner-operator who is certified as a DBE. The DBE which leases vehicles from another DBE shall receive credit for the total value of the services the lessee DBE provides on the contract.
    d. The DBE may also lease vehicles from a non-DBE firm, including from an owner-operator. The DBE which leases vehicles from a non-DBE is entitled to credit for the total value of

services provided by non-DBE lessees not to exceed the value of services provided by DBE-owned vehicles on the contract. Additional participation by non-DBE lessees receives credit only for the fee or commission it receives as a result of the lease arrangement.

Example to this subsection (6) (d): DBE firm X uses two of its own trucks on a contract. It leases two trucks from DBE firm Y and six trucks from non-DBE firm Z. DBE credit would be awarded for the total value of transportation services provided by firm X and firm Y, and may also be awarded for the total value of transportation services provided by four of the six trucks provided by firm Z. In all, full credit would be allowed for the participation of eight trucks. With respect to the other two trucks provided by firm Z, DBE credit could be awarded only for the fees or commission pertaining to those trucks firm X receives as a result of the lease with firm Z.

e. For purposes of this subsection, a lease must indicate that the DBE has exclusive use of and control over vehicles used on the project. This does not preclude vehicles from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for the use of the leased vehicle. Leased vehicles must display the name and identification number of the DBE.

7. All expenditures with manufacturers and suppliers must be properly documented in writing in order to count toward a DBE obligation. RIDOT will count expenditures with DBEs for materials or supplies toward DBE goals as follows:
   a. For a DBE contractor (furnish and install) to receive credit for supplying materials, the DBE must perform the following four functions: (1) negotiate price; (2) determine quality and quantity; (3) order the materials; and (4) pay for the material itself. If the DBE does not perform all of these functions, it has not performed a CUF with respect to obtaining the materials, and the cost of the materials may not be counted toward the DBE goal. Invoices for the material should show the payor as the DBE.
   b. If the materials or supplies are purchased from a DBE manufacturer, RIDOT will count 100 percent of the cost of the materials or supplies.
   c. If the materials or supplies are purchased from a DBE regular dealer, RIDOT will count 60 percent of the cost of the materials or supplies toward DBE goals.
   d. With respect to flaggers, when flaggers are provided, RIDOT will count 60 percent of the labor. When traffic signs are included with flaggers, the work will be counted as 100 percent.
   e. With respect to materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, RIDOT will count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials and supplies required on a job site, toward DBE goals, provided RIDOT determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services. The fees will be evaluated by RIDOT after receiving the Broker's Affidavit Form from the DBE. RIDOT will not count any portion of the cost of the materials and supplies themselves toward DBE goals.
8. Subcontractor: A subcontractor arrangement exists when a person or firm has a contractual obligation to perform a defined portion of the contract work and the following conditions are present:
   a. Compensation is determined by the amount of work accomplished, rather than being paid on an hourly basis.
   b. The subcontractor exercises control over work methods (except as limited by project specifications), while furnishing and managing its own labor and equipment with only minimal, general supervision being exercised by the prime contractor.

c. The personnel involved in the DBE subcontractor's portion of the project are both under the subcontractor's direct supervision and identified on its payroll records. When warranted by unique circumstances of a project, a DBE subcontractor may be permitted to employ on a limited basis specialty trades personnel who are not normally employed by the DBE subcontractor.
d. Second tier DBE subcontracting will be approved only in accordance with normal industry practice and when the type of work differs from work which the DBE usually performs.

9. All factors pertaining to the unique conditions of a project shall be considered in determining whether a DBE subcontractor relationship actually exists on the project. A DBE subcontractor may need to lease/rent equipment, other than over-the-road trucks, and/or augment its workforce with additional skilled personnel in order to perform certain project-related work. The DBE subcontractor is required to arrange for the necessary equipment through rental/leasing agreements, as necessary. (Off-the-road equipment, such as "Euclids," may be rented/leased from the prime contractor even though the CUF guidelines prohibit rental/lease of over-the-road trucks from the prime contractor.) Likewise, in limited instances, the prime contractor may provide some, but not all, personnel to the DBE subcontractor when the following conditions are present:
   a. A DBE must perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force.
   b. The DBE must not subcontract a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved.
   c. The personnel must have a specialized expertise which has not been mastered by the DBE's own skilled/supervising/managerial personnel.
   d. Such personnel must be placed on the DBE's payroll and come under the direct supervision of the DBE for the performance of the particular subcontract work.
   e. The deployment of such personnel must be accomplished within the framework of a mentor-protégé agreement; or for emergency purposes, by contract change order. All instances of combining personnel must be for developmental purposes in which teaching/demonstration/consulting to the DBE must occur.
   f. Long term, continual (e.g. from one contract to another) or chronic use by a DBE firm, of personnel normally employed by another specific firm, lacking a mentor-protégé agreement which is being carried out in good faith, is not consistent with the CUF guidelines.
   g. To place entire work crews on DBE's payrolls when such personnel are normally employed by another specific firm is not consistent with the CUF guidelines.
   h. A DBE may need to lease/rent equipment, except for over-the-road trucks, in order to be properly equipped to execute the work of a mentor-protégé agreement. In such cases where the DBE has investigated several possible sources of such equipment within a reasonable geographical area to the project, the DBE may find the best offer was made by the prime contractor or another subcontractor on the project. In such cases, the DBE may rent/lease such equipment from the prime or another subcontractor, provided that the use of such equipment is material to demonstrating/teaching objectives set forth in the mentor-protégé agreement. Thus, the DBE's regular employees, not those temporarily furnished by the prime contractor, or another subcontractor, shall operate such equipment for the majority of the time during which the equipment is used in the work of the DBE subcontractor under the mentor-protégé agreement.
   i. A DBE's use of equipment owned by a prime contractor or another subcontractor or without an appropriate mentor/protégé program is inconsistent with the CUF guidelines and will result in noncompliance.
10. If a contractor or subcontractor is not certified as a DBE by the Minority Business Enterprise Compliance Office under the specific NAICS code of line items identified in the contract, at the

time of the execution of the contract or issuance of the purchase order, RIDOT will not count that firm's participation toward any DBE goals, except as provided in 49 CFR 26.87(i).

11. RIDOT will not count toward the contract goal the dollar value of work performed by a contractor or subcontractor after it has ceased to be a certified DBE.
12. RIDOT will not count the participation of a DBE subcontractor toward a contractor's final compliance with its DBE obligations on a contract until all payments being credited have been fully paid to the DBE.

B. DBE Replacement and Termination:

The contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the contractor obtains RIDOT's written consent as provided in this section; and unless RIDOT's consent is provided under this paragraph, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

1. Good Cause for Replacement or Termination

The prime contractor must provide the Department's OCR with a copy of its "Intent to Substitute /Terminate" notice to the DBE setting forth the reasons for the request. This notice must advise the DBE that it has five (5) days to respond (to prime and State) with objections and why the State should not approve the prime's proposed action.

After adequate notice by the Contractor, if any DBE is unable to perform work committed toward the goal, the DBE shall provide to the OCR a signed statement stating why it is unable to complete the work. The Contractor shall document its efforts to have another DBE perform the item or to have a DBE perform other items to replace the original DBE commitment amounts. In the event the Contractor is not able to find replacement DBE work, the Contractor must provide the OCR with documentation clearly evidencing its good faith efforts. Contractors are prohibited from terminating for convenience any DBE firm used to fulfill a commitment pursuant to meeting the contract goal stated herein.

Prior to substitution or termination of a DBE subcontractor, the contractor shall demonstrate good cause and obtain written approval from the OCR.

In accordance with 49 CFR Part 26.53 good cause includes the following circumstances:

a. The listed DBE subcontractor fails or refuses to execute a written contract;
b. The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
c. The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;
d. The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
e. The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law;
f. RIDOT determines that the listed DBE subcontractor is not a responsible contractor;
g. The listed DBE subcontractor voluntarily withdraws from the project and provides to RIDOT written notice of its withdrawal;
h. The listed DBE is ineligible to receive DBE credit for the type of work required;

i. A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract;
j. Other documented good cause that RIDOT determines compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime contractor can self-perform the work for which the DBE contractor was engaged or so that the prime contractor can substitute another DBE or non-DBE contractor after contract award.

In addition to post-award terminations, the provisions of this section apply to pre-award deletions of or substitutions for DBE firms put forward by offerors in negotiated procurements.

Failure by the contractor to carry out the requirements of this part is a material breach of the contract and may result in the termination of the contract or such other remedies that RIDOT deems appropriate.

2. Good Faith Efforts to Replace

When a DBE subcontractor is terminated as provided in paragraph (1) of this section, or fails to complete its work on the contract for any reason, RIDOT requires the prime contractor to make good faith efforts to find another DBE subcontractor to substitute for the original DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the contract goal RIDOT established for the procurement. The good faith efforts shall be documented by the contractor. If RIDOT requests documentation under this provision, the contractor shall submit the documentation within 7 days, which may be extended for an additional 7 days if necessary at the request of the contractor, and RIDOT shall provide a written determination to the contractor stating whether or not good faith efforts have been demonstrated. The determination shall be made by the DBELO, under the criteria established below.

If there is a change order to a contract on which there is a DBE contract goal, then that contract goal applies to the change order as well as to the original contract. In the event of significant change orders, good faith efforts are required dependent upon the type of change order; RIDOT determines on a case-by-case basis what constitutes good faith efforts in the context of a particular change order. This could include modifying the contract goal amount applicable to the change order if circumstances warrant. When a change order decreases work, i.e. RIDOT determines specific line items are no longer necessary on a contract or there is a quantity change on an item, no good faith effort must be shown. However, when an increase of work occurs or there is a termination of a DBE, good faith efforts must be shown in accordance with the preceding requirements.

C. Monthly Payment Certifications:

All contractors on RIDOT projects are required to certify their payments to subcontractors by use of RIDOT's contractor compliance software on a minimum of a monthly basis (which, at time of publishing, is Prism). A project may not proceed to finalization without the input of this information. RIDOT's Prompt Payment Clause applies to both DBE and non-DBE subcontracts. The Contractor is responsible for the subcontractors' compliance with the submission of their payment reporting by way of this software.

D. Joint Check Procedure for DBEs:

A prime contractor must receive written approval by the Department's DBELO before using a joint check for materials/supplies called for under a subcontract with a DBE. Joint check requests shall be submitted by the prime contractor to the Department's OCR in writing along with a Joint Check Affidavit and the subcontract agreement. The following are general conditions that must be met regarding joint check use:

1. The use of the joint check shall only be allowed by exception and shall not compromise the independence of the DBE;
2. The second party (typically the prime contractor) acts solely as a guarantor;
3. The DBE must release the check to the supplier;
4. The subcontract agreement must reflect the total contract value, including the cost of materials and installation; actual payments for work performed by the DBE may reflect labor only; and
5. The DBE remains responsible for negotiation of price, determining quality and quantity, ordering materials and installing (where applicable) and paying for the material itself.

IV. FINAL SUBCONTRACTOR PAYMENTS AND RELEASE OF RETAINAGE

Prior to receiving final payment, the Contractor shall provide to the Resident Engineer certification of the dollars paid to each DBE firm using Form "DBE Request for Verification Payment." The certification shall be dated and signed by a responsible officer of the Contractor and by the DBE. Falsification of this certification will result in sanctions listed in Sections I. of this provision.

If this contract contains a DBE goal, the Contract Compliance Officer with the OCR will verify that the Contractor has attained the DBE goal specified on said project or has provided adequate documentation justifying a lesser amount. The final estimate will not be paid to the Contractor until proper certifications have been made.

When a subcontractor's work is satisfactorily complete (i.e., all the tasks called for in the subcontract have been accomplished and documented), and the Department has partially accepted the work and all payments have been certified by the Contractor and subcontractor on the "Certification of Progress Payment" form, the Prime Contractor shall release all retainage held by the Prime Contractor within thirty (30) days of satisfactory completion of the subcontractor's work. The subcontractor shall submit to the Prime Contractor the final executed form within ten (10) days of receipt of payment.

_____

Signature of Contractor or Consultant

_____

Date

State of Rhode Island

DATA QUALITY MANAGEMENT PLAN FOR PAVEMENT CONDITION DATA

May 2018

Prepared for:

U.S Department of Transpiration
Federal Highway Administration

Developed and presented by:

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State of Rhode Island Data Quality Management Plan for Pavement Condition Data

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1. INTRODUCTION

Quality pavement data is important to a state transportation agency as this data impacts the means and methods that a department utilizes in ensuring a safe, efficient, long-lasting transportation network (see Table 1 for RIDOT highway network mileage). Among other things, accurate, high-quality data is important to establishing current pavement conditions, forecasting future conditions, selecting pavement rehabilitation and preservation treatments, implementing the RIDOT Transportation Asset Management Plan, and programming the financial resources needed to maintain the system in the desired state. Therefore, it is important that this data be accurate and up-to-date.

As part of the FHWA requirement for the annual Highway Performance Monitoring System (HPMS) submission, the RIDOT is required to collect and report pavement condition data. The RIDOT contracts with a vendor using automated vehicles for the purposes of pavement data collection. This data is processed and entered into the RIDOT dTIMS pavement management system (PMS).

Quality assurance protocols and principles will be applied for data collection, data processing and data reporting. Trained qualified personnel and calibrated equipment will be required in this effort to ensure the accuracy of all data. This document outlines the procedures that RIDOT uses/will use to manage the quality of the data that will be utilized by the RIDOT for this effort.

Table 1. Rhode Island Highway Mileage

Roadway Type	Miles	Percentage
National Highway System (NHS)		
Interstate	70	1.2%
Other Freeways and Expressways	91	1.5%
Other Principal Arterials	440	7.3%
Total NHS	601	9.9%
Non-National Highway System (NHS)		
Minor Arterial	415	6.9%
Major Collector	712	11.8%
Minor Collector	182	3.0%
Local	4142	68.4%
Total Non-NHS	5451	90.0%
Total (NHS and Non-NHS)	6052	100.0%

Note: Percentages may not total 100 due to rounding

2. DISTRESS AND ROUGHNESS RATING PROTOCOLS

Procedures for the collection of IRI, rutting, and cracking shall be performed in accordance with the latest edition of the HPMS Field Manual (Appendix A).

Below is a summary of the RIDOT's pavement distresses, and roughness rating protocols:

All distress and roughness data are summarized for every 0.1 mile.

1) **IRI** – IRI in both the left and right wheelpaths and the average of the two to be reported to the nearest 1 in/mi (FHWA 2013). The profiler shall meet the requirements of the latest version of AASHTO M-328 or equivalent. A wheel path has a defined width of 39 inches in accordance with the HPMS Field Manual.

2) **RUTTING** – Rut depth in both the left and right wheelpaths and the average of the two to be reported to the nearest 1/10 inch (FHWA 2013). Rutting data collection shall meet the requirements of the latest version of AASHTO R48.

3) **LONGITUDINAL CRACKING** – Length of longitudinal cracking to be reported to the nearest 1/100 ft. For RIDOT (non FHWA HPMS) reporting, separate by severity – Low, Medium, and High in accordance with the SHRP LTPP Distress Identification Manual.

   a- Paving joints in the centerline count in the primary direction. Paving joints on multi lane roadways on the left edge count.
   b- Longitudinal cracking shall be recorded as total longitudinal cracking and wheel path longitudinal cracking. For FHWA HPMS, longitudinal cracking in the wheel path shall be measured in accordance with the HPMS Field Manual.

4) **TRANSVERSE CRACKING** – Number of cracks. For RIDOT reporting, separate by severity – Low, Medium, and High in accordance with the SHRP LTPP Distress Identification Manual.

   a- Transverse cracks that are in the same location chainage wise, but are separated, should count as one transverse crack.
   b- Ignore transverse cracks that are less than 1 ft in length.
   c- Transverse cracks in the wheel path (unless they are known to be concrete joint reflection cracks) are to be considered as part of the FHWA HPMS percent cracking calculation and shall be measured in accordance with the HPMS Field Manual.

5) **ALLIGATOR CRACKING** – Area of alligator cracking (ft^2) to be reported to the nearest 1/100 ft^2. For RIDOT reporting, separate by severity – Low, Medium, and High according to RIDOT protocol (see below). For FHWA HPMS purposes, alligator cracking in the wheel path only is quantified in the determination of percent cracking and shall be measured in accordance with the HPMS Field Manual.

   <u>Alligator Cracking Severity Ranges</u>

   a- Low severity: Width less than 6 mm
   b- Medium severity: Width between 6 mm and 12 mm
   c- High severity: Width greater than 12 mm

6) **BLOCK CRACKING** – Area of block cracking to be reported to the nearest 1 ft^2. For RIDOT reporting, block cracking does not need a minimum length to be counted. Also, for RIDOT reporting, separate by severity – Low, Medium, and High in accordance with the SHRP LTPP Distress Identification Manual.

7) **EDGE CRACKING** – Length of roadway affected by edge cracking (ft) determined according to the SHRP Distress Identification Manual. No severity is measured.

8) **SEALED CRACKS** – a) RIDOT does not count sealed cracks unless the crack sealing material has failed. b) For FHWA HPMS purposes, sealed cracks count for the percent cracking calculation.

   Crack Severity Ranges

   d- Low severity: Width less than 6 mm
   e- Medium severity: Width between 6 mm and 12 mm
   f- High severity: Width greater than 12 mm

9) **PATCHING** – Length of roadway affected by patching to be reported to the nearest 1/100 ft. Separate by severity – Low, Medium, and High. Low severity patches are patches that ride smoothly. Medium severity patches are patches that ride rough. High severity patches are open potholes.

   a- Count patches only in the survey lane. Do not count patches in the shoulder.
   b- Patches for raising manholes do count.
   c- Full width resurfacing of lane doesn't count.
   d- Patching for transverse culvert trenches does count, however.
   e- Patches in centerline count in the primary (northbound or eastbound) direction on two lane roadways.
   f- Patches on the edge stripe count.
   g- Delaminations in all pavement types count as high severity patching.
   h- Missing thermoplastic material in the striping doesn't count as patching.
   i- Do not count patches on bridge joints, but do count them on bridge decks.
   j- Asphaltic plug expansion joints are not patches.

10) **BLEEDING** – Length of roadway affected by bleeding (ft). No severity is measured.

11) **FAULTING** (for HPMS only) – Height of fault (on concrete surface pavements) to be reported to the nearest 0.10 in. (FHWA 2013)

3. STAFF QUALIFICATIONS OF THE DATA COLLECTION COMPANY

It is required that the key staff of the data collection company (the vendor) performing pavement condition surveys have a minimum of five (5) years of relevant experience. The resumes of key personnel assigned to the project as well as a copy of any applicable certifications or licenses these staff members possess shall be included in the Technical Proposal in response to any RIDOT RFP for pavement condition surveys.

If there is a change in vendor staffing, the vendor shall submit the resume and certification of the proposed employee to the RIDOT for approval. The proposed employee shall not work until approved in writing by the RIDOT.

4. TRAINING AND QUALIFICATION PROCESS FOR RIDOT STAFF

There will be a three (3) hour training session for RIDOT staff who will be collecting manual pavement distress data on control sites and blind sites. This training will be conducted by RIDOT pavement management engineers. Upon completion of this training, the trainees will be required to collect the relevant pavement condition data at one of the control sites. The trainee will be qualified based on successfully collecting data that does not vary by more than 10% from the last established accepted data for that control site.

5. VENDOR'S QUALITY MANAGEMENT PLAN

The vendor shall provide the RIDOT with a Quality Management Plan to be reviewed and approved by the RIDOT that outlines how the vendor will provide the RIDOT with accurate, high quality deliverables. The vendor's Quality Management Plan shall conform to the requirements of Chapter 7 (Quality Control) of the FHWA Practical Guide for Quality Management of Pavement Condition Data Collection. The vendor's Quality Management Plan shall also address how they check the accuracy of their Distance Measuring Instrument (DMI) throughout data collection and how they will manage the accuracy of the measurement of sealed cracks, especially those in which the crack seal material has not failed by not allowing water to enter the cracks. The HPMS submission to the FHWA requires that sealed cracks described above be included to determine the percent cracking.

6. AGENCY AND VENDOR ROLES

The roles of the agency and the vendor pertaining to compliance with the terms of this Quality Management Plan are defined below.

Agency's Role

1. Review and approve the vendor's Quality Management Plan.
2. Establish and collect updated pavement condition data on control sites and blind sites.
3. Determine if the vendor has met the required accuracy on the control sites and blind sites.
4. Collect data on the statistically required number of 0.1 mile samples from the vendor's data using the vendor's pavement imagery to compare and statistically analyze the agency collected data and the vendor's reported data.
5. Conduct route checks, missing segment checks, route coverage checks, data reasonableness checks, and GPS coordinate checks.
6. Compile a report of Acceptance activities for each data collection cycle.

Vendor's Role

1. Provide a Quality Management Plan to the RIDOT that outlines the VENDOR's techniques to deliver accurate, high quality data.
2. In the QMP, include resumes and copies of applicable certifications or licenses of key staff members assigned to pavement condition surveys in the Technical Proposals. Provide requested information for any staff member that was replaced from those cited in the vendor's Technical Proposal.
3. Provide the agency with written certification of vehicle calibration according to the applicable AASHTO specifications prior to commencing pavement condition survey.
4. Test the control sites prior to commencing pavement condition survey. If the results are outside the accuracy limits, identify the reasons for the inaccuracies, correct them, and document all of this in the vendor's Quality Control report.
5. Provide the agency with pavement imagery weekly after the third week of data collection so the agency can collect data on the statistically required number of 0.1 mile samples. If the submitted data is unacceptable as result of this agency review, identify the potential reasons for the discrepancy, correct the data, and document all of this in the vendor's Quality Control report.

6. Take action prescribed by Section 8, Agency Acceptance, to address deficiencies resulting from route checks, missing segments checks, route coverage checks, data reasonableness checks, and GPS coordinate checks.
7. Prepare a Quality Control Report documenting all of the vendor's Quality Control activities (see Section 10, Reporting).

7. VENDOR QUALITY CONTROL – CONTROL SITES AND BLIND SITES

Below is a description of how control site data is determined as well as the required accuracy from the results manually collected on the control sites.

1. RIDOT sets up a minimum of three (3) control sites throughout the state with varying pavement conditions for the contractor's calibration checks.
2. These control sites are 1 km long each, and there are two 100 m long samples within each control site, one at 0.3 km to 0.4 km, and the other from 0.6 km to 0.7 km.
3. RIDOT requires control sites to be surveyed in both directions.
4. a. RIDOT measures the distresses the vendor is required to survey. These distresses are rutting, longitudinal cracking, transverse cracking, and alligator cracking.

   b. Roughness and rutting will be measured with the RIDOT Materials Section's profiler. The profiles coming from this profiler will be used in ProVAL software to determine the IRI. The RIDOT may add additional sites for roughness measurements at its discretion.
5. a. Severities of cracking are not measured because they are often governed by crack width, and it is difficult to manually measure crack width along the entire length of the cracks.

   b. RIDOT measures severity of patching as follows: low severity patches are patches that ride smoothly, medium severity patches are patches that ride rough, and high severity patches are potholes and delaminations. However, RIDOT is interested in the accuracy of the quantities of potholes and delaminations as well as the quantity of patches.
6. RIDOT requires that the vendor run each control site a minimum of three (3) times to determine the repeatability for IRI, rutting, and cracking. IRI, rutting, and cracking shall be a minimum of 92% repeatable. The IRI reported by the vendor shall be within 5% of the quantity measured using the RIDOT vehicle used for measuring IRI. All other distresses reported by the vendor shall be within 10% of the quantity measured manually by RIDOT for each sample in each direction of each control site to pass the test.

As previously defined under Section 6, Vendor's Roles, the vendor shall certify and provide evidence and documentation that their equipment has been calibrated according to applicable AASHTO specifications immediately prior to commencing work in Rhode Island.

If the vendor's results meet the required accuracy on all of the control sites, the vendor may commence the survey. If the vendor's results do not meet the required accuracy, the vendor shall identify the potential reasons for the discrepancy, correct the causes that they have identified, then re test and re submit the control sites for RIDOT approval. The potential causes of the discrepancy and the results of the re testing of the control sites shall be documented in the vendor's Quality Control report (see Section 10, Reporting).

The vendor shall be required to calibrate his equipment once per every 500 miles of data collected.

Two (2) blind sites will be selected around the state. These are 0.1 mile segments in one direction aligned to 0.1 mile chainages on the selected routes. The location of these blind test sites will be unknown to the vendor. The RIDOT staff will manually collect pavement condition data that is required by the vendor on the blind sites. When the vendor submits pavement condition data on the route that a blind site is located, the RIDOT staff will compare the results from the vendor to the manually collected results to determine if the results submitted by the vendor have the required accuracy. If the vendor's results do not meet the required accuracy on the first blind site, the vendor shall identify the potential reasons for the discrepancy, correct the causes that they have identified, then either re submit or re collect all previously collected data or the most recently collected 500 lane miles, whichever is less. If the vendor's results do not meet the required accuracy on the second blind site, the vendor shall identify the potential reasons for the discrepancy, correct the causes that they have identified, then either re submit or re collect all previously collected data between the first blind site and the second blind site or the most recently collected 500 lane miles, whichever is less. The potential causes of any discrepancies to the blind sites and the action the vendor took to correct those discrepancies shall be documented in the vendor's Quality Control report (see Section 10, Reporting).

8. AGENCY ACCEPTANCE

The vendor shall submit data and corresponding pavement images each week starting from the end of the third week of field data collection. The RIDOT staff will randomly sample 0.1 mile segments for review based on the pavement images. Statistics will be used to determine the number of samples. The RIDOT staff will

use the F test to determine the type of t test to use, then use the appropriate t test to determine if the vendor's results and the RIDOT's results for the samples come from the same population. Details of the F test and the t test the RIDOT plans on using are found in Appendix B. If the vendor's results and the RIDOT's results come from the same population and the vendor's pavement data satisfies all other acceptance checks shown below, the RIDOT will accept the vendor's pavement data deliverables. If the F and t test indicate that the vendor's results and the RIDOT's results don't come from the same population or if the vendor's results failed one or more of the other acceptance checks shown below, the RIDOT reserves the right to reject the vendor's pavement data deliverables, and the vendor shall identify the possible reasons for the discrepancy, correct the causes that they have identified, then re submit all previously collected data. The potential cause(s) of any discrepancies and the action taken by the vendor to correct those discrepancies shall be documented in the vendor's Quality Control report (see Section 10, Reporting).

Other acceptance checks the RIDOT will apply include the following:

Route checks: A shapefile from the RIDOT GIS section will be provided to the vendor. As data is being submitted, the RIDOT staff will check to ensure that the length of the routes provided matches the actual length of the corresponding routes. This will enable the RIDOT to verify that the vendor drove the route correctly. If the vendor drove the route incorrectly, the vendor shall re drive that route at no additional expense to the RIDOT.

Missing segment checks: The RIDOT staff will check to ensure there is no data missing from routes. If there is data missing from routes (except IRI collected at low speeds), the vendor shall re drive that route at no additional expense to the RIDOT.

Route coverage check: The RIDOT staff will check to ensure that all required routes have been covered by the condition survey. If the RIDOT discovers that required routes were not covered, the vendor shall re-mobilize to complete collection on these missing routes at no additional expense to the RIDOT.

Data reasonableness check: The RIDOT staff will check to ensure that all submitted data is reasonable. If any data is found to be unreasonable, then the vendor shall review their post processing procedures to determine the error. If the issue cannot be resolved the vendor shall re mobilize and re-collect the affected section of roadway at no additional expense to the RIDOT.

GPS coordinate check: The RIDOT will compare GPS coordinates submitted by the vendor for these samples against those in GoogleEarth™ mapping service for

accuracy. If there is inaccuracy in the GPS coordinates, then the vendor shall review their post processing procedures and make appropriate corrections at no additional expense to the RIDOT.

9. PAVEMENT IMAGE QUALITY

The cracks depicted in the pavement images shall mirror the cracks displayed on the RIDOT generated crack maps for the control sites. All pavement images shall be free of dirt, raindrops, and/or scratches on the lenses. Pavement distresses shall be clearly visible and not obscured due to poor lighting conditions. Pavement images shall not be collected on wet pavements. The pavement images shall not exceed a maximum false cracking to be in accordance with AASHTO PP 68. Pavement images shall be displayed in the proper order without missing images, and with the route and mile point identified for each image. Stitching shall be such that no gaps or overlaps exist between the frames.
If all pavement images meet the above requirements, then the RIDOT will accept the pavement image delivery. The RIDOT will reject any pavement images not meeting the above requirements which shall be re-collected at the vendor's expense.

10. REPORTING

A report shall be prepared by the vendor documenting Quality Control activities. This report shall include the following:

1. Equipment and key personnel used during data collection.
2. Documentation of initial and continuing calibration/checks/maintenance for field equipment, any equipment problems, and corrective actions taken.
3. Schedule adherence and the reasons for any changes.
4. Documentation of collection procedures and protocols used.
5. Reporting of any variances in standard operating procedures or changes in collection methods made in the field.
6. Applicable guidance documents.
7. Reporting of all control and blind site testing and results.
8. Documentation of all QC activities.
9. Analysis of all rater checks and intra- or inter-rater comparisons.
10. Log of all quality issues identified through QC activities and *corrective actions taken*.
11. Copies of all correspondences. (FHWA 2013)

Additionally, a report will be prepared by the RIDOT documenting acceptance activities. This report will include the following:

1. A description of quality standards and acceptance criteria.
2. A description of control and blind sites and reference values used.
3. An analysis of control and blind site testing results.
4. Documentation of all global database check performed and the results.
5. Documentation of all sampling checks and the results.
6. Documentation of all other acceptance checks and the results.
7. A log of all quality issues identified through acceptance checks and corrective actions taken.
8. Recommendations and improvements. (FHWA 2013).

BIBLIOGRAPHY

Publication No. FHWA-HRT-13-092, Distress Identification Manual for the Long-Term Pavement Performance Program, U.S. Department of Transportation, Federal Highway Administration, 2014.

Zimmerman, Kathryn A., Pierce, Linda M., Workshop on Quality Management Procedures for Network Level Pavement Condition, Participant Workbook, Applied Pavement Technology, Inc. for the U.S. Department of Transportation, Federal Highway Administration, Urbana, IL, 2014.

Zimmerman, Kathryn A., Pierce, Linda M., McGovern, Ginger, Practical Guide for Quality Management of Pavement Condition Data Collection, U.S. Department of Transportation, Federal Highway Administration, 2013.

Office of Management and Budget Control No. 2125-0028, Highway Performance Monitoring System Field Manual, U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, 2016.

American Association of State Highway and Transportation Officials, Specifications PP 68-14, Collecting Images of Pavement Surfaced for Distress Detection, M328, Standard Specification for Inertial Profiler, R48, Standard Practice for Determining Rut Depth in Pavements, R57, Standard Practice for Operating Intertial Profiling Systems.

APPENDIX A – Excerpts from the HPMS Field Manual

FHWA's December 2016 "Highway Performance Monitoring System Field Manual" and the February 2018 "Errata Sheet" describe in detail the data collection and reporting requirements for HPMS. Condensed versions of five specific pavement data items (Surface Type, IRI, Rutting, Faulting and Cracking Percent) and general guidance applicable to all pavement sections are included below. The modifications are typically where RIDOT's requirements exceed the minimum requirements of FHWA.

Surface Type (Item 49)

Description: Surface type on a given section.

Use: For investment requirements modeling to estimate pavement deterioration and loading history, for the cost allocation pavement model, for the national highway database, and pavement condition performance metric rating determination.

Extent: All National Highway System (NHS) and Sample Panel sections, optional for all other sections beyond the limits of the Sample Panel.

Coding Requirements: Enter the following code which best represents the type of surface:

Code	Description	Pavement Group
1	Unpaved	N/A
2	Bituminous	Asphalt Pavement
3	JPCP – Jointed Plain Concrete Pavement (includes whitetopping)	Jointed Concrete Pavement
4	JRCP – Jointed Reinforced Concrete Pavement (includes whitetopping)	Jointed Concrete Pavement
5	CRCP – Continuously Reinforced Concrete Pavement	CRCP
6	Asphalt-Concrete (AC) Overlay over Existing AC Pavement	Asphalt Pavement
7	AC Overlay over Existing Jointed Concrete Pavement	Asphalt Pavement
8	AC (Bituminous Overlay over Existing CRCP)	Asphalt Pavement
9	Unbonded Jointed Concrete Overlay on PCC Pavement	Jointed Concrete Pavement
10	Bonded PCC Overlay on PCC Pavement	Jointed Concrete Pavement
11	Other (e.g., plank, brick, cobblestone, etc.)	N/A

Guidance: In accordance with 23 CFR 490.309(c), this data shall be collected and reported on an annual cycle for the Interstate roadways and on a 2-year maximum cycle for all other required sections.

Surface Type is a full extent item for the NHS and should be determined from visual inspection and construction records to the extent possible. Sample data needs construction record verification.

Asphalt pavement is pavement constructed with asphalt materials (codes '2', '6', '7', and '8'). Continuously Reinforced Concrete Pavement (CRCP) means pavement constructed

of reinforced Portland cement concrete with no joints (code '5'). Jointed Concrete Pavement means pavement constructed of Portland cement concrete with joints. It may be constructed of either reinforced or unreinforced (plain) concrete (codes '3', '4', '9', and '10').

Whitetopping should be classified as code '3' or '4' depending on whether reinforcement is present or not. For Highway Economic Requirements System (HERS) pavement modelling purposes, whitetopping will be analyzed as a PCC pavement.

For code '6', the coding for this data item shall not be based on materials utilized for preservation treatments (e.g., thin overlays, micro-surfacing, chip seals, slurry seal, etc.) if they are less than 0.5 inch in compacted thickness.

IRI (International Roughness Index) (Item 47)

Description: IRI is the road roughness index most commonly used worldwide for evaluating and managing road systems. Road roughness is the primary indicator of the utility of a highway network to road users. IRI is defined as a statistic used to estimate the amount of roughness in a measured longitudinal profile.

Use: For investment requirements modeling to estimate pavement deterioration, section deficiencies, and necessary improvements, in cost allocation studies, in pavement condition trends, and for other analysis purposes including NHS performance. Also, for performance measure calculation for pavement condition on the NHS.

Extent: All NHS and principal arterial sections, and rural minor arterial Sample Panel sections; optional for urban minor arterial, major collector, and minor collector Sample Panel sections and rural major collector Sample Panel sections.

Coding Requirements: Code IRI to the nearest inch per mile. Also report the month and year for when the data was collected.

Guidance: The following standards shall be followed for reported IRI values:

- The system to collect IRI data shall be in accordance with American Association of State Highway Transportation Officials (AASHTO) Standard M328-14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Equipment Specification for Inertial Profiler and AASHTO Standard R56-14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Certification of Inertial Profiling Systems.
- The method to collect data shall be in accordance with the network-level data collection procedures in AASHTO Standard R57-14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Operating Inertial Profiling Systems.

- The reported IRI values shall be computed from pavement profile data in accordance with AASHTO Standard R43-13, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Quantifying Roughness of Pavement, 2014, 34th/2014 Edition, AASHTO, 1-56051-606-4. This method requires the calculation of IRI for each wheelpath in a section, then averaging the two IRI values to determine the Mean Roughness Index (MRI) for the section which is reported.
- Shall be reported for all sections with Surface Type (Item 49) codes '2', '3', '4', '5', '6', '7', '8', '9', '10' and '11'.
- Shall not be estimated from Present Serviceability Rating (PSR) (Item 48).
- Estimating conditions from data samples of the full extent of the mainline will not be permitted.

Existing IRI values should continue to be reported until they are replaced by new measured values.

Structures and railroad grade crossings are to be included in the measurement of surface roughness.

If a measured IRI value is reported for a non-Principal Arterial System (PAS) section, a PSR value for that section is not required, as a paved Sample Panel section shall have either PSR or IRI reported.

Rutting (Item 50)

Description: Average depth of rutting. A rut is defined as longitudinal surface depressions in the asphalt pavement derived from measurements of a profile transverse to the path of travel on a highway lane. It may have associated transverse displacement. Asphalt pavement (Item 49 codes '2', '6', '7', and '8') is defined as pavements where the top-most surface is constructed with asphalt materials.

Use: For pavement modeling purposes and pavement condition performance metric rating.

Extent: All NHS and Sample Panel sections, optional for all other sections beyond the limits of the Sample Panel.

Coding Requirements: Code the average rutting for the section to the nearest 0.01 inch. Reporting shall be consistent with IRI inventory direction lane, and section. Zero (0) values shall only be reported for roadway sections where ruts are not present. Also report the month and year for when the data was collected.

Guidance: The practices in the following Standard Specifications shall be followed for reporting Rutting values, as required in 23 CFR 490.309 and 490.311:

- Data collection conforming to AASHTO Standard R48-10 (2013), Standard Practice for Determining Rut Depth in Pavements with the following modifications:
    - Transverse profiles shall be measured with no less than 5 profile points.
    - Transverse profiles shall be measured in the inventory direction of the highway
    - The summary interval for rut measurement shall be the length of the section, nominally 0.1 mile and aligned with other surface measurements.
    - Maximum longitudinal spacing between transverse profiles shall be not more than 12 inches.
    - Calculation of rut depth shall follow the method described in section 5 of Standard R48-10 and averaged over each wheelpath. The average of the two wheelpaths in the summary interval is to be reported.
- Or data collection conforming to AASHTO Standards PP70-14, Standard Practice for Collection the Transverse Pavement Profile and PP69-14 Standard Practice for Determining Pavement Deformation Parameters and Cross Slope from Collected Transverse Profiles with the following modifications:
    - The maximum longitudinal spacing between transverse profiles (report interval) shall not be more than 12 inches.
    - Transverse profiles shall be measured in the inventory direction of the highway.
    - The summary interval (or section) shall be the length of the section, nominally 0.1 mile and aligned with other surface measurements.
    - Calculation of rut depth shall follow the method described in section 6.7 of PP69 and averaged over each wheelpath. The average of the two wheelpaths in the summary interval is to be reported.
- Shall be reported for all asphalt pavement sections with Surface Type (Item 49) codes '2', '6', '7', and '8'.
- Estimating conditions from data samples of the full extent of the mainline of the NHS will not be permitted.

Default values or values obtained by other means or conversions that are not directly obtained from measured road profiles are not to be used.

Faulting (Item 51)

Description: Faulting is defined as a vertical misalignment of pavement joints in Portland Cement Concrete Pavements (Jointed Concrete Pavement). Jointed Concrete Pavements is defined as pavements where the top-most surface is constructed of Portland cement concrete with joints (Item 49 codes '3', '4', '9', '10', and '11'). It may be constructed of either reinforced or unreinforced (plain) concrete.

Use: For pavement modeling purposes and pavement condition performance metric rating.

Extent: All NHS and Sample Panel sections, optional for all other sections beyond the limits of the Sample Panel.

Coding Requirements: Report the average/mean absolute faulting of all joints in a section to the nearest 0.01 inch. Reporting shall be consistent with IRI inventory direction lane, and section. Zero (0) values shall only be reported for roadway sections where faults are not present. Also report the month and year for when the data was collected.

Guidance: The practices in the following Standard Specifications shall be followed for reporting Faulting values, as required in 23 CFR 490.309 and 490.311:

- Data collection method for faulting data shall be in accordance with AASHTO Standard R36-13, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Evaluating Faulting of Concrete Pavements with the following parameters.
    - The length of each measured section shall be nominally 0.1-mile-long and aligned with other measurements of the pavement surface.
    - Use of Manual Fault Measurement is not recommended.
    - Calculation of faulting may use Method A or Method B for automated measurements based profile data collected for the right wheel path.
    - Faulting is to be reported as the average absolute faulting of the right wheelpath for the measured section
    - Care should be exercised to avoid measuring faulting at cracks
- Shall be reported for all Jointed Concrete Pavement sections with Surface Type (Item 49) codes '3', '4', '9', '10' and '11'.
- Estimating conditions from data samples of the full extent of the mainline will not be permitted.

Faulting at cracks shall not be included in this measure, only at joints.

Every joint shall be measured in the right wheel-path over a section and the average absolute faulting reported.

Default values or values obtained by other means or conversions that are not directly obtained from measured road profiles shall not to be used.

Cracking Percent (Item 52)

Description: Cracking is defined as a fissure or discontinuity of the pavement surface not necessarily extending through the entire thickness of the pavement. Cracking Percent is defined as the percentage of pavement surface exhibiting cracking as follows:

- For Asphalt pavements (Item 49 codes '2', '6', '7', and '8'), Cracking Percent is the percentage of the total area exhibiting visible fatigue type cracking (both longitudinal and/or pattern) for all severity levels in the wheelpath in each section.
- For Jointed Concrete Pavements (Item 49 codes '3', '4', '9', and '10'), Cracking Percent is the percentage of slabs within the section that exhibit transverse cracking. Partial slabs shall contribute to the section that contains the majority of the slab length.

Use: For pavement modeling purposes and pavement condition performance metric rating.

Extent: All NHS and Sample Panel sections; optional for all other sections beyond the limits of the Sample Panel.

Coding Requirements: Report the percent of total section area for asphalt pavement and percent of slabs for Jointed Concrete Pavements to the nearest 1%. Zero (0) values shall only be reported for roadway sections where cracks are not present. Also report the month and year for when the data was collected.

Guidance: For Asphalt pavements (Item 49 codes '2', '6', '7', and '8'):

The practices in one of the following Standard Specifications shall be followed for reporting Cracking values, as required in 23 CFR 490.309 and 490.311:

- Cracking measurements may be done using manual or automated methods, however, automated methods are preferred for roadways where IRI is measured.
- Cracking will be measured and reported for both wheelpaths. Measuring and reporting cracking outside of the wheelpath areas is not required.
- Any and all severity levels (sealed and unsealed) will be reported.
- The section length for reporting is nominally 0.1 mile and shall be consistent with IRI inventory direction and lane.
- AASHTO R55-10, Quantifying Cracks in Asphalt Pavement Surfaces, PP67-14, Quantifying Cracks in Asphalt Pavement Surfaces from Collected Images Utilizing Automated Methods, and PP68-14, Collecting Images of Pavement Surfaces for Distress Detection may be used with the following modifications:

- Collected images must be sufficient width and length to capture details of both wheelpaths in each section.
- The lane for image collection must be in the same lanes as measured for IRI and Rutting.
- Images covering the entire length of the section are to be used. Sampling of images is not to be used.
- For purposes of reporting cracking data to HPMS, the wheelpath width is to be 39 inches (1.0 m) and located as described in the Standard.

- Regardless of the method of data collection, the percentage of cracking to be reported is the total area of the wheelpaths where cracks are detected divided by the total area of the 0.1 mile section.

For Jointed Concrete Pavements (Item 49 codes '3', '4', '9', and '10'):

The following practices shall be followed for reporting Cracking values for jointed Concrete Pavements, as required in 23 CFR 490.309 and 490.311:

- Cracks in the Concrete Slabs may be detected using manual observations, imaging, or other methods that identify at least 85% of all cracks present in the slabs.
- A crack is defined as a fissure or discontinuity of the pavement surface not necessarily extending through the entire thickness of the pavement.
- Reported cracking for jointed concrete pavements excludes longitudinal cracks, corner breaks, D-cracking, and Alkali Silica Reactivity (ASR) cracking that may occur on a slab.
- The percentage of cracking reported is calculated as the number of slabs containing one or more transverse cracks extending for at least one-half the lane width, divided by the total number of slabs in the section.

Reporting shall be consistent with IRI inventory direction, lane and section.

Estimating conditions from data samples of the full extent of the NHS mainline will not be permitted

Default values or values obtained by other means or conversions that are not directly obtained from measured road profiles are not to be used.

All severity levels of associated cracking should be considered and reported, both sealed and unsealed.

General Guidance

- For all pavement sections, measured IRI, rutting, faulting and cracking percent values shall be:
  - collected for the full extent of the mainline highway;
  - in the rightmost through lane or one consistent lane for all data if the rightmost through lane carries traffic that is not representative of the remainder of the lanes or is not accessible due to closure, excessive congestion, or other events impacting access;
  - continuously collected in a manner that will allow for reporting in nominally uniform section lengths of 0.1 mile (528 feet); shorter sections are permitted only at the beginning of a route, end of a route, at bridges, or other locations where a section length of 0.1 mile is not achievable (e.g., locations where a change in Surface Type occurs); and
  - reported for milepoint limits (i.e., sections) that are consistent with those reported for Data Item 47 (IRI).
- For the sections on the Interstate System, measured IRI, rutting, faulting and cracking percent values shall be:
  - on an annual frequency (note: data collection shall be performed during a given calendar year, i.e., data collection activities conducted during a State's fiscal year, performance year, etc. must conclude by December 31st of that year for reporting in the following year).
- For the sections on the non-Interstate System NHS and the non-NHS sections (i.e., where sample section reporting is required), measured IRI, rutting, faulting and cracking percent values shall be:
  - on a biennial frequency (note: data collection shall be performed during a given 2-year duration and must conclude by December 31st of that 2-year duration for reporting purposes).

APPENDIX B

(F test and t test)

F test

Purpose: to compare variances

1. $S^2 = (x_i - x_{avg})^2/(n-1)$ where S^2 is the sample variance
2. $F = S_1^2/S_2^2$ where S_1 is the sample with the higher variance
3. Degrees of freedom = $n_{sample} - 1$
4. Look up F_{cr} from table using degrees of freedom
5. If $F_{cr} > F$, then use pooled t test, otherwise use individual t test.

Pooled t test

1. Pooled variance: $S_p^2 = (S_1^2(n_1 - 1) + S_2^2(n_2 - 1))/(n_1 + n_2 - 2)$
2. $T_{pooled} = | x_{1\ avg} - x_{2\ avg}|/(S_p^2/n_1+S_p^2/n_2)^{0.5}$
3. Pooled degrees of freedom = $n_1 + n_2 - 2$
4. Look up $t_{critical}$ from table using pooled degrees of freedom
5. If $t_{critical} > t_{pooled}$, then data is acceptable.

Individual t test

1. $T = |x_{1\ avg} - x_{2\ avg}|/((S_1^2/n_1) + (S_2^2/n_2))^{0.5}$
2. Effective degrees of freedom =
$((S_1^2/n_1)^2 + (S_2^2/n_2))^2/(((S_1^2/n_1)^2/(n_1+1))+((S_2^2/n_2)^2/(n_2+1)))-2$
3. Look up $t_{critical}$ from table using effective degrees of freedom
4. If $t_{critical} > t$, then data is acceptable.

SOURCE: Zimmerman and Pierce, 2014.