**Domestic Scan Proposal Form**

AASHTO is now soliciting proposals for a **Calendar Year 2017 US Domestic Scan Program** (NCHRP Panel 20-68A).

Selected scan topics will be investigated by one of three ways: (type 1) site visits to three to six locations for approximately a two week period or less, by webinar; (type 2) peer exchange; or (type 3) conducted by a group of eight to 12 transportation professionals with expertise in the selected topic area. Proposed topics should meet the following criteria:

* Address an important and timely need for information by transportation agencies;
* Are of interest to a broad national spectrum of people and agencies;
* Are complex and also “hands-on,” meaning they lend themselves particularly well to exploration through on-site visits; and
* Are sufficiently focused that the tour participants are able to investigate and understand key issues in the limited time available on the tour.

Before submitting your proposal it is highly recommended that you read [**What Makes a Good Scan Topic Proposal**](http://www.domesticscan.org/what-makes-a-good-scan-topic-proposal)[**http://www.domesticscan.org/what-makes-a-good-scan-topic-proposal**](http://www.domesticscan.org/what-makes-a-good-scan-topic-proposal)

This form is designed to collect the full length of your proposal. Sections requiring essays have unlimited space for you to use. Contact information has some limited text. ***Use your TAB🡪 key to advance to the area where you need to complete information.***

**Proposals should be returned no later than OCTOBER 15, 2016.**

**IMPORTANT NOTE on How to save your document**: ***LastNameFirst Initial, underscore\_Organization Acronym \_CY2017.***

***Saved Document Name Example: VitaleM\_AASHTO\_CY2017***

***If you have more than one, add a number after first initial: VitaleM1\_AASHTO\_CY2017***

**Domestic Scan Proposal Contact Information**

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| AASHTO Committee | Subcommittee on Maintenance and Standing Committee on Aviation | Date of submission | 10/14/2016 |

**Title of Proposed Scan****:** Defining State DOT Needs For Unmanned Aerial Systems For Bridge Condition Assessment

**Problem Statement** (What topic is to be examined? What drives the need for the scan? Why now?)

This Scan reviews, defines, demonstrates, and documents the potential value that Unmanned Aerial Systems (UAS) have in supplementing the collection of bridge element condition data information needed for structural condition state assessment of the National Transportation Highway Bridge Network for state DOTs. This includes, but is not limited to, the impact on safety, mobility, system reliability, efficiencies, environmental, and economic benefits these aerial systems can provide to the owners of the transportation highway bridge network.

**Scan Scope** (What specific subject areas are to be examined? Which cities and states might be visited? Which agencies/organizations (including specific departments or types of staff if applicable)?

This Scan will address the need for integrating the use of a UAS, as a resource, for improving bridge element condition state assessment within the agency with regard to how data are collected, stored, processed and used. Additionally, once data are collected from the UAS, comparison would be made to data collected by conventional means using current accepted practices (examples of bridge elements that may be included for condition state assessment data collection: top side of decks, underside of decks, substructure members, superstructure members, etc.).

The work will need to coordinate with current and past projects by FHWA and/or state DOTs in the field of UAS to maximize findings and lessons learned.

Recommend that agency representatives and scan team participate in workshop or peer exchange.

**Anticipated Scan Results** (What key information is to be gained? What information is to be shared after the scan? Who would the audience be for this information?)

The project would provide a detailed demonstration of the UAS aerial platform, sensory technology, backhaul communications, and collection of bridge element condition data. The bridge element condition data should be collected in accordance with the requirements of the AASHTO Manual for Bridge Element Inspection.

Deliverables include a Concept of Operations, Systems Requirement, as documented in a Fiinal report that describes the project, processes, systems, data collection and usage, current state of the practice by bridge owners, lessons learned, conclusions, and recommendations.

The results of the Scan will be shared with bridge owners in the United States.

**Benefits Expected** (Including potential impacts on current technology or procedures)

The business model for the use of UAS has expanded exponentially in the last 2-3 years. Technology has advanced to the point that small unmanned aerial vehicles combined with sophisticated sensory technology (high resolution cameras, infrared cameras, etc.), allows highway bridge asset condition data capture and management within minutes without putting workers in harm’s way of traffic. Also, UAS can all but eliminate the need for setting up work zones that add to network congestion, reduced system reliability, and increasing fuel consumption and emissions. Add to that the fact that UAS make once hard to access places that require up- close visual inspection, very easy with today’s photogrammetric technologies.