



District Department of Transportation

Peer Review of DDOT Research Program Projects

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1.0 Introduction

Peer review of research projects can increase the value of the research, improve chances for implementing the results, solicit expert advice and experiences, and potentially establish long-term professional relationships¹. Through peer review, research is validated on the appropriateness of the methodology applied and the strength of the results and inferences². Peer review is especially valuable in the case of research that is based on novel methods or for research in which the conclusions may be used to change current practices or affect policy decisions².

Peer reviewers also enhance the capacity of Research, Development, and Technology Transfer (RDT) Program by incorporating expert knowledge as oversight. They can help to avoid duplication of effort with input during the literature review and point to additional resources that may not be available publically. The peer review provides checks to the direction of the research and the accuracy of results. Finally, the peer reviewers can provide practical insight to the research team that improves implementation of the final product.

This document details the peer review process for the DDOT RDT program. It establishes a program framework and provides recommendations for implementation.

¹ Alampalli, Sreenivas. "Peer Review to Enhance State Transportation Research Program." Leadership and Management in Engineering. Apr. 2001. P. 27-30.

² Federal Register. "Final Information Quality Bulletin for Peer Review." Jan. 2005. vol. 70 No. 10.

2.0 Peer Review Program

2.1. Current Peer Review Process

Peer review of DDOT research projects has been planned for several years; however, few projects have been subjected to such review. In the current cycle of projects, from 2014 through 2016, one project has an established peer review panel. The ambition is to establish peer review panels on all applicable 2017 projects and revisit the process before implementation on the 2018 projects.

2.2. Suggested Improvements

2.2.1. Involvement throughout the project

During the scoping process, review points are identified. Peer reviewers are invited to the kick off meeting. Their calls/meetings are linked to the timeline of deliverables. New York State Department of Transportation Research and Development Bureau selects peer reviewers during project development and has them review proposals in hopes of bringing to light scoping issues and methodology concerns at the conceptual stage³.

2.2.2. Develop a “handbook/charge” for peer reviewers

This may be in the form of a letter. It introduces DDOT and RDT and should outline the objectives of the peer review and the expectations of the reviewer. It should provide an overview of the project with the scope and the timeframe of the review. It can also provide a list of questions for consideration.

Peer reviewers should be provided with a clear identification of the issues at hand and the objective and motivation of the review. Reviewers should be informed of how their comments will be conveyed to the research team and to any other entity. They should also be informed if they will be identified and if their individual comments will be attributed to them.

2.2.3. Provide a framework for DDOT Project Managers

This document will help explain the peer review program to DDOT project managers. Section 4.0 will provide a framework for project managers to follow to establish a peer review panel for their research projects.

³ Alampalli, Sreenivas. “Peer Review to Enhance State Transportation Research Program.” Leadership and Management in Engineering. Apr. 2001. P. 27-30.

2.2.4. Projects to be reviewed

RDT should continue to ask if every project needs to be peer reviewed and how that determination should be made. This decision may be based on budget, project timeframe, and the importance of the results. Peer review is especially valuable in the case of research that is based on novel methods or for research in which the conclusions may be used to change current practices or affect policy decisions⁴. It can also provide important support in areas where the research teams that may have gaps.

2.3. Structure of Peer Review

It is possible for peer review of research projects to take on several forms. The preferred structure for peer review of DDOT research projects is an engaged panel of reviewers throughout the life cycle of the project. The peer reviewers will meet with the project team at given points throughout the project and provide both written and verbal comments to improve the research product.

Another structure option is to have peer reviewers conduct individual reviews. The reviewers submit written feedback on deliverables and other work products. There is also the potential to establish a standard procedure that combines the two formats. A panel may be convened at the scoping and proposal phase. There may be an individual review of the literature review and panel meetings for interim and final report phases.

The minimum desired commitment is participation in at least three meetings with the research team and a review of all project deliverables. Additional involvement needed or desired should be discussed by DDOT staff and the research team and determined in advance of the project kick-off meeting

After selection, invitation, and acceptance, peer reviewers will be provided with a “charge” that explains the objectives of the project and the motivation of the peer review. The charge should guide the reviewers towards both specific technical questions and broad evaluation of the overall research⁴. The reviewers will also be given project documents including the proposal from the selected research team.

The peer reviewers will ideally attend (in person or via conference call) the project kick off meeting. If a reviewer cannot attend the kick off, arrangements should be made with the project team to discuss feedback on the proposed direction of the project. They may attend subsequent project progress meetings or engage with the research team independently. Their presence will be requested at at least one interim meeting and the final meeting. Peer reviewers are asked to submit comments from both deliverables and meetings in writing to ensure that they are documented and incorporated. All comments should receive consideration and be incorporated where they are relevant and valid⁴.

2.4. Internal Peer Review

In certain cases, it may be more effective to establish a peer review panel of internal DDOT staff that has a vested interest and expert knowledge in the area of the project. This is an opportunity for DDOT staff

⁴ Federal Register. “Final Information Quality Bulletin for Peer Review.” Jan. 2005. vol. 70 No. 10.



who are not directly involved in the research project to provide input as well as inject institutional knowledge into the research product. The involvement of other DDOT staff will also help to disseminate the result and findings of the research through the agency.

3.0 Establishing a Peer Review Panel

3.1. Expectations of reviewers

The peer reviewers should focus on improving overall project quality. They are not asked to evaluate the results of the research for errors and are not expected to advise on practice or policy recommendations. Rather, the scope of the peer review centers on the research itself. The reviewers are expected to evaluate the research and any recommendations presented therein for validity. They should help the PI conduct the work more efficiently by offering comments on proposals, deliverables, and other work products.

3.1.1. What do peer reviewers review?^{5,6}

- Clarity of research objectives
- Appropriateness of the scope
- Validity of research design, procedures, and methodology
- Quality of data collection methods
- Robustness of analysis and findings
- Legitimacy of assumptions and judgments
- Soundness of conclusions
- Feasibility of implementation
- Strength and limitations of overall research product

The scope for individual projects can be outlined in more detail in the charge provided to peer reviewers at the outset of the project.

3.2. Recruiting

During the proposal process, researchers are required to furnish a list of potential peer reviewers. Additional reviewers may be identified by DDOT staff to supplement the suggestions. Proper considerations should be made for independence and conflict of interest.

A critical concern in selecting peer reviewers is expertise. Peer reviewers should have knowledge of and experience in areas directly related to the research. The expertise of peer reviewers as well as the balance of the members of the review panel are important to the integrity of the process.

3.2.1. How are peer reviewers selected?⁵

- Significant technical contributions to profession/technical achievements

⁵ Alampalli, Sreenivas. "Peer Review to Enhance State Transportation Research Program." Leadership and Management in Engineering. Apr. 2001. P. 27-30.

⁶ Federal Register. "Final Information Quality Bulletin for Peer Review." Jan. 2005. vol. 70 No. 10.

- Involvement in professional activities
- Familiarity with latest advances
- Experience on similar projects
- Research background

The panel should be balanced. Ideally, there should be representation from both academia and the public sector. Industry experience is critically helpful. The panel should also be constructed to contain expertise not just in the topic area but on analysis of the topic.

The panel should consist of at least 2 reviewers but no more than 5. Although 3 or 4 reviewers are preferable, it is most important that the assembled panel is able to review all desired aspect of the project. Peer reviewers should be added based on the value they add to the project.

RDT maintains a database of potential peer reviewers. This database pulls from past peer reviewer recruitment efforts, contacts from conferences and other professional forums, and other individuals previously identified with knowledge in a given topic area or preliminary research into the area.

When potential peer reviewers have been selected, they are invited to participate via email. A sample invitation letter is Appendix A.

3.3. Fees

Over past funding cycles, funds have been set aside for peer reviewer compensation. This amount has varied across fiscal years but for 2017 and 2018 peer reviewer compensation was budgeted for each of the funded research projects.

The necessity of compensation for peer reviewers was discussed among the RDT staff. Although some potential reviewers, especially in the public sector, may not be able to accept payment, providing a fee offers an incentive for experts in academia to participate on panels. It also recognizes the value of the experts time.

Currently reviewers' compensation is based on the level of involvement in the project and there is not a set fee schedule. A base honorarium has been set at 2% of the project budget but this amount can be scaled based on the needs for peer review. The maximum honorarium is capped at \$3,000 (corresponding to a project of \$150,000). The level of compensation should be discussed at the outset of the project and provided to the reviewer with the invitation.

4.0 Project Management

The project manager will coordinate and correspond with the peer reviewers. RDT staff will provide support as necessary.

4.1. Selecting Peer Reviewers

The project manager and RDT staff will meet to identify potential reviewers. For more information on selecting peer reviewer, see Section 3.2.

4.2. Documents for Peer Reviewers

Initial contact with potential peer reviewers should include an invitation letter (sample in Appendix A) and the project scope. When peer reviewers agree to participate on a peer review panel, project managers should set clear expectations. The following documents will help give the peer reviewers an idea of what is expected:

- Project proposal
- Project Charge
 - Summary of project objectives and scope
 - Schedule for project and peer review activities
 - Expectations of involvement
 - A set of questions –direction for the panel to take during the review

In addition to these documents, the initial meeting should discuss the types of feedback desired, the level of effort estimated, and solicit the expectations of the peer reviewers.

4.2.1. Invitation Letter and Scope of Work

An invitation letter should be the first document sent to peer reviewers and should be accompanied by a scope of work for the project.

4.2.2. Project Proposal

The first document that the peer reviewers should review is the proposal submitted by the research team. This provides the reviewers with a fuller understanding of the project and creates the opportunity for an expert review of the research objectives and methodology.

4.2.3. Peer Review Schedule

The schedule for the peer review process should be linked to the overall project timeline. It is desired that the peer review panel is established before the project kick off meeting and that the reviewers can participate in the kick off meeting. The schedule will be at the discretion of the project manager but the peer review panel should have a minimum of 3 meetings. These meetings may be in the form of conference calls. The peer reviewers should review project deliverables, therefore, it may be efficient to have meetings correspond with a presentation of the project deliverables. Peer reviewers should be

kept up to date on the progression of the process including delays and other changes to the project schedule. To the best of the project manager's ability, the peer reviewers should be given a complete picture of the dates when they will receive material and when input will be expected.

4.2.4. Peer Reviewer Involvement

The peer reviewers should be given a clear idea of the level of involvement required. The estimated number of meetings, types of feedback and frequency of feedback, as well as how their feedback will be conveyed and used should be communicated.

4.2.5. Questions for Peer Reviewers

The peer reviewers are expected to provide feedback on the following:

- Clarity of research objectives
- Appropriateness of the scope
- Validity of research design, procedures, and methodology
- Quality of data collection methods
- Robustness of analysis and findings
- Legitimacy of assumptions and judgments
- Soundness of conclusions
- Feasibility of implementation
- Strength and limitations of overall research product

The project manager should supply the peer reviewers with a set of questions that direct the review process. They should be specific to the research project and support any limitations the research team may have. These questions may relate to the project in general or to individual deliverables.

Sample questions can be found in Appendix B.

4.3. Managing the Peer Review Panel

Peer reviewers will be aware of when meetings will be held based on the peer review schedule. They should be provided with any material for review well in advance of meetings and an agenda should accompany meeting requests (sample agenda in Appendix C). It may be helpful to include the questions that will be discussed at the meeting in the agenda to ensure the reviewers are prepared. At the initial meeting, it may also be helpful to ask panel members how far in advance of meetings they will need materials for review.

While the meetings will provide important information, reviewers should also submit written feedback.



4.4. Payment

During the review of the final report, peer reviewers should complete a payment form. This will be submitted to the RDT program staff and processed by Howard University. The peer reviewer will receive an honorarium after processing is completed.



Appendix A – Sample Invitation Letter

Dear [potential panel member],

The Research, Development, & Technology Transfer (RDT) Program at the District Department of Transportation (DDOT) in Washington, DC, would like you to help us tackle urban transportation issues! We invite you to participate in the peer review panel overseeing DDOT's [project title] research project. As a member of this panel, you will serve as an expert resource for the research project team as it develops and implements the research methodology, analyzes and interprets results, and draws conclusions for implementation by DDOT.

The peer review panel is convened to ensure the quality and relevancy of the project and its final products. We do not ask the peer reviewers to evaluate the results of the research for errors and or to advise on practice or policy recommendations, rather we hope they provide feedback on the validity of the research, results, and recommendations. We look for the panel to review:

- Clarity of research objectives
- Appropriateness of the scope
- Validity of research design, procedures, and methodology
- Quality of data collection methods
- Robustness of analysis and findings
- Legitimacy of assumptions and judgments
- Soundness of conclusions
- Feasibility of implementation
- Strength and limitations of overall research product

We work to assemble a panel with expertise to cover all points and provide a balance of expertise.

The minimum level of commitment required includes participation in at least 3 conference call meetings with the panel, researchers, and DDOT and a review of project deliverables. Peer reviewers are offered an honorarium that is based on level of panel engagement required for a project and the project size. For this project, [level of commitment] is estimated. This project is expected to run [number of months], starting [start month]. The scope for the project is attached to this message.

We hope you are willing to participate on this panel. The peer review panel is an opportunity both to increase the quality of research products and to have exposure to DDOT's work on this topic. If you have specific questions, please contact [Ms. Stephanie Dock](#) or [Dr. Stefanie Brodie](#) in the RDT Program or [Dr. Stephen Arhin](#), the program manager for the university consortium supporting DDOT's research program.



Appendix B - Sample Panel Questions

General

Have you been involved in similar projects or are you aware of similar projects?

Are you aware of additional useful data sources?

Project Proposal

Are there supplemental objectives that can be achieved within the scope of the project? Are there additional tasks or actions you think should be included in the proposal that are not?

Are there key issues that should be addressed or considered that have not been included in the proposal?

Are there methodological improves that will help better meet the project objectives?

Literature Review

Are there any established or innovative practices related to the specific project topic that have not been included in the literature review?

Are there studies or publications that should be reviewed that were not included?

Survey *Specific Deliverable*

Will the survey provide enough information to make a fair determination of who is delivering to what business?

Are the questions clear and easily understood?

Data Processing *Specific Task*

Can you share any lessons learned from other video data collection projects?

If you have collected similar data before, what did you do with it after the initial project?

What is the best approach to tallying trips?

Appendix C - Sample Agenda

- **Welcome and Introductions**

- **Background on Freight Trip Generation (FTG): On-Site Berths and Curbside Implications**

- Overview and Objectives
- DDOT FTG Timelines and Outline
- DDOT FTG Purpose and Audience

- **Discuss Panel Feedback on Freight Trip Generation (FTG) Project Components**

Note: we will begin this discussion session with providing a brief overview of the content in each section. Following this, we will ask each panelist to share their input on the discussion questions (2-3 minutes each) within each section. Following everyone's comments, we will have an open dialogue/discussion for each section.

- **Section 1.0 (Literature Review)**

- Are there any established or innovative practices related to the specific project topic that have not been included in the literature review?
- Are there studies or publications that should be reviewed that were not included?

- **Section 2.0 (Building Selection and Survey)**

- Will the survey provide enough information to make a fair determination of who is delivering to what business?
- Are the questions clear and easily understood?

- **Next Steps**