
Data Self-Assessment Workshops Final Report

March 2018



U.S. Department of Transportation
Federal Highway Administration

FOREWORD

State Departments of Transportation (DOTs) as well as other public transportation agencies rely on relevant, timely, and quality data to make data-driven business decisions in managing transportation programs. Transportation programs, such as infrastructure investment and policy development, thrive on continuous assessment and improvement of existing data. Data self-assessment is part of comprehensive data lifecycle management. This process treats data as a critical asset that needs proper management and improvement.

To introduce State DOTs to the data self-assessment tools developed under the National Cooperative Highway Program Project 08-92, the Federal Highway Administration (FHWA) in collaboration with the American Association of State Highway Transportation Officials (AASHTO), hosted two workshops. These workshops were held in Philadelphia, Pennsylvania, and Denver, Colorado, on December 13-14, 2017 and January 23-24, 2018, respectively. Participants of the workshops included representatives from 12 State DOTs and one Metropolitan Planning Organization (MPO). During the workshops, FHWA also identified agencies ready and able to undertake a more complete data self-assessment and participate in a post assessment peer exchange. This report summarizes the proceedings from the two workshops, documents the key takeaways, and lists the agencies that may be willing to participate in follow-on activities.

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16. Abstract Data is a critical asset that practitioners have not historically managed in a systematic and strategic format. Though not a tangible asset, data remains the backbone of any informed decision. In essence, the need for suitable, quality, and consistent data for transportation program management cannot be underestimated. It is essential for practitioners to consider data as an asset group and apply formal and structured principles in identifying and gathering relevant data that can address the multi-level business needs of transportation agencies. To introduce State DOTs to the data self-assessment tools developed under the National Cooperative Highway Program Project 08-92 (Implementing a Transportation Agency Data Self-Assessment), the Federal Highway Administration (FHWA) - in collaboration with the American Association of State Highway Transportation Officials (AASHTO) - hosted two workshops. The objectives of the workshops were to demonstrate the data self-assessment tool and to identify agencies willing to champion a comprehensive implementation of the tool in their organization as well as to participate in a follow-up peer exchange. The outcome of the workshops shows that DOTs are in various degrees of maturity in data assessment and management and are exploring options to develop effective data governance to support agency data management. Many of the participating agencies were very interested in follow-up activities.			
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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
AREA				
in ²	square inches	645.2	square millimeters	mm ²
ft ²	square feet	0.093	square meters	m ²
yd ²	square yard	0.836	square meters	m ²
ac	acres	0.405	hectares	ha
mi ²	square miles	2.59	square kilometers	km ²
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft ³	cubic feet	0.028	cubic meters	m ³
yd ³	cubic yards	0.765	cubic meters	m ³
NOTE: volumes greater than 1000 L shall be shown in m ³				
MASS				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
ILLUMINATION				
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m ²	cd/m ²
FORCE and PRESSURE or STRESS				
lbf	poundforce	4.45	newtons	N
lbf/in ²	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
AREA				
mm ²	square millimeters	0.0016	square inches	in ²
m ²	square meters	10.764	square feet	ft ²
m ²	square meters	1.195	square yards	yd ²
ha	hectares	2.47	acres	ac
km ²	square kilometers	0.386	square miles	mi ²
VOLUME				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m ³	cubic meters	35.314	cubic feet	ft ³
m ³	cubic meters	1.307	cubic yards	yd ³
MASS				
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
TEMPERATURE (exact degrees)				
°C	Celsius	1.8C+32	Fahrenheit	°F
ILLUMINATION				
lx	lux	0.0929	foot-candles	fc
cd/m ²	candela/m ²	0.2919	foot-Lamberts	fl
FORCE and PRESSURE or STRESS				
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in ²

*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.
(Revised March 2003)

TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION	1
OVERVIEW OF PROJECT	1
OVERVIEW OF WORKSHOPS	1
REPORT ORGANIZATION.....	2
CHAPTER 2. BRIEF OVERVIEW OF NCHRP 08-92	3
BACKGROUND	3
OUTPUTS.....	4
CHAPTER 3. SUMMARY OF WORKSHOP OUTPUTS	5
PHILADELPHIA WORKSHOP.....	5
DENVER WORKSHOP.....	5
KEY TAKEAWAYS.....	6
LIST OF STATES WILLING TO CONDUCT AN IN-DEPTH DATA ASSESSMENT	8
APPENDIX A. PHILADELPHIA WORKSHOP AGENDA.....	11
APPENDIX B. DENVER WORKSHOP AGENDA AND PRESENTATION.....	15
APPENDIX C. WORKSHOP EXERCISES	19

LIST OF TABLES

Table 1. List of participating agencies and host DOT.	2
Table 2. List of agencies that responded “Yes” to the in-depth assessment.	9
Table 3. List of agencies that responded “Maybe” to the in-depth assessment.	9

LIST OF ACRONYMS AND SYMBOLS

AASHTO	-	American Association of State Highway Transportation Officials
CDOT	-	Colorado Department of Transportation
DOT	-	Department of Transportation
DVRPC	-	Delaware Valley Regional Planning Commission
FHWA	-	Federal Highway Administration
MPO	-	Metropolitan Planning Organization
NCHRP	-	National Cooperative Highway Research Program
PennDOT	-	Pennsylvania Department of Transportation

CHAPTER 1. INTRODUCTION

OVERVIEW OF PROJECT

State Departments of Transportation (DOTs) as well as other public transportation agencies rely on relevant, timely, and quality data to make data-driven, business decisions in managing transportation programs. Transportation programs, such as infrastructure investment and policy development, thrive on continuous assessment and improvement of existing data. Data self-assessment is part of a comprehensive data management process, which treats data as a critical asset that needs proper management and improvement. The data self-assessment step of a comprehensive data management process enables practitioners and decision makers to evaluate the value and benefits of existing data to their business needs. It also assists with understanding the gaps in data and the datasets required to support transportation programs. A formal and structured self-assessment procedure can help agencies identify the relevant data needs, types, and a succession and integration plan that facilitates the smooth flow and sharing of data, both vertically and horizontally, in the department.

To introduce State DOTs to the data self-assessment tools developed under the National Cooperative Highway Program (NCHRP) Project 08-92 (Implementing a Transportation Agency Data Self-Assessment) to support data management programs, the Federal Highway Administration (FHWA) in collaboration with the American Association of State Highway Transportation Officials (AASHTO) hosted two workshops for 12 State DOTs and one Metropolitan Planning Organization (MPO). The objectives of the workshops were: (1) to demonstrate the data self-assessment tool and (2) to identify agencies willing to champion a comprehensive implementation of the tool in their organization as well as to participate in a follow-up peer exchange.

OVERVIEW OF WORKSHOPS

FHWA conducted two 8-hour workshops on December 13-14, 2017 and January 23-24, 2018 for 13 public agencies. Each workshop was held over two days, four hours in each day. Specifically, the first workshop involved six State DOTs and one MPO. The Delaware Valley Regional Planning Commission (DVRPC) is the designated MPO for multiple counties in the States of Pennsylvania and New Jersey. DVRPC contributed to the workshop by providing a non-DOT perspective in data management and provided meeting space. Pennsylvania DOT (PennDOT) served as the host of the first workshop in Philadelphia. Colorado DOT (CDOT) hosted the second workshop in Denver which also included six State DOTs.

Prior to each workshop, FHWA provided the participants with background materials to give some insight on what to expect in the workshop. Table 1 shows the participating agencies in each workshop.

Table 1. List of participating agencies and host DOT.

Where: Philadelphia, PA	Where: Denver, CO
When: December 13-14, 2017	When: January 23-24, 2018
+Pennsylvania	+Colorado
Illinois	California
Kentucky	Iowa
Maryland	Minnesota
Tennessee	Nevada
Virginia	Utah
DVRPC (MPO)	

⁺Host DOT

REPORT ORGANIZATION

The remainder of the report is organized as follows:

- **Chapter 2** provides a brief overview of the NCHRP projects that laid the foundation for DOT-level Data Assessment.
- **Chapter 3** presents the results from the workshops including the key takeaways and the State DOTs willing to further explore an in-depth application of the tool in their organization.
- **Appendix A** contains the Philadelphia Workshop Agenda.
- **Appendix B** contains the Denver Workshop Agenda.
- **Appendix C** contains the Breakout Exercise for both Workshops.

CHAPTER 2. BRIEF OVERVIEW OF NCHRP 08-92

BACKGROUND

Quality data effectively supports decision making regarding policy choices, infrastructure investments, and other agency functions. Recognizing the criticality of data to transportation programming and decision making, as well as the benefits associated with the proper management of data, stakeholders have initiated research to address the treatment of data in the context of agencies' business needs. The two authoritative guides within the transportation community are the "Transportation Data Self-Assessment Guide" and "Data to Support Transportation Agency Business Needs: A Self-Assessment Guide," which were initiated by AASHTO in cooperation with NCHRP and FHWA.

NCHRP Project 08-36 Task 100, Transportation Data Program Self-Assessment Guide, provided a strong foundation for the products of NCHRP 08-92. The purpose of NCHRP 08-36 Task 100 was to propose a framework and conceptual design for creating a tool to help transportation agencies assess their data programs. This framework specifically identified and defined current practices that are applicable to the development of a framework for a self-assessment tool; examined the agency needs and challenges associated with data program management; and provided a conceptual design and road map for future development of a self-assessment tool.

The intent of NCHRP Project 08-92, Implementing a Transportation Agency Data Self-Assessment, was to produce a guidebook that State DOTs (and other transportation agencies such as MPOs) could use to assist them in conducting a comprehensive data self-assessment to improve their transportation programs. The product of Project 08-92 is NCHRP Report 814, Data to Support Transportation Agency Business Needs: A Self-Assessment Guide and supporting Assessment Tools. The purpose of the guide and the assessment tools is to help decision makers and data practitioners at State DOTs and MPOs evaluate and improve data quality and data management practices.

NCHRP Project 08-92 refined the proposed framework in NCHRP 08-36 and developed assessment tools for implementation. This project brought to life the conceptual framework proposed in the NCHRP Project 08-36. Specifically, NCHRP 08-92 developed self-assessment tools that can be used to examine current data needs and data management practices of data owners or users. This multi-level assessment tool enables agencies to evaluate the value and management of data at the business-specific level, data-specific level, or agency-wide management level. The Data Management Assessment provides a means for agencies to identify opportunities to improve the way data is managed at the agency level or for a specific data type. Similarly, the Data Value Assessment provides a means for data users to evaluate the degree to which existing data meets their business decision-making needs. The tools can assist DOTs and transportation agencies to undertake five data assessment types:

- **Option 1:** Data management assessment for the agency to get a quick read on their data management capability level.
- **Option 2:** Data management assessment for one or more target data management areas (e.g., traffic data or maintenance data).

- **Option 3:** Data value assessment to understand user perceptions of data value in one or more business areas.
- **Option 4:** Combination of data value and data management assessments for a logical cluster of business function and data types to obtain a balanced perspective (e.g., a data value assessment for preservation program development and data management assessment for pavement and bridge data).
- **Option 5:** Pursue a comprehensive approach covering agency-wide data management and combined data value and data management assessments for priority business areas or data categories.

It is important to understand that the assessment options are not mutually exclusive, but rather, they collectively enhance the agency's data programs and support data-driven decision making. The data value assessment options enable agencies to evaluate three key elements: **Data Availability, Quality, and Usability**. Also, data management assessment options enable agencies to evaluate these key categories:

- **Data Strategy and Governance:** how decisions are made about what data to collect and how to manage and deliver it – including roles, accountability, policies and processes.
- **Life-Cycle Data Management:** how data are maintained, preserved, protected, documented, and delivered.
- **Data Architecture and Integration:** practices to standardize and integrate data to minimize duplication and inconsistencies, including spatial referencing.
- **Data Collaboration:** processes to coordinate data collection and management with internal and external users.
- **Data Quality Management:** practices to define, validate, measure, and report data quality.

OUTPUTS

The intent of implementing data self-assessment is not to establish a data-perfect organization across all data programs, but to address potential data issues that can undermine the quality of decision-making using existing data. The results of such assessments are to guide agency leaders, data managers, data stewards, and data users to answer specific questions pertaining to their data needs. Sample questions stakeholders can easily address with these tools include:

- **Agency Leaders:** Do we have the right data? Can we meet reporting requirements?
- **Data Managers:** Are we making efficient use of resources in data gathering, sharing, and management?
- **Data Stewards:** Is the data good enough? Do we need to improve data accuracy?
- **Data Users:** Is the data complete and easily accessible? Can we analyze the data easily?

CHAPTER 3. SUMMARY OF WORKSHOP OUTPUTS

PHILADELPHIA WORKSHOP

On December 13-14, 2017, FHWA held the first data self-assessment workshop in Philadelphia, Pennsylvania. PennDOT hosted the workshop in partnership with DVRPC and the workshop was held on the premises of DVRPC. Day one of the workshop focused on the introduction and presentation of the background projects/materials and outputs/tools of the NCHRP 08-92 project and the demonstration of the data assessment tools. Day two of the workshop focused on breakout exercises and a roundtable discussion with the participants to share their experiences using the tools.

Day 1: Introduction, Presentation, and Tool Demonstration

Representatives from FHWA, AASHTO, PennDOT, and DVRPC welcomed the participants to the workshop. The FHWA and AASHTO representatives commented on the genesis of the workshop and its broader impact on related NCHRP projects. There were ten attendees from six State DOTs and one MPO at this workshop.

Two consultants from Wood Environment & Infrastructure Solutions, Inc. facilitated the workshop. The participants introduced themselves, briefly described their experience with data management, and provided a general overview of their organizations data management practices. The participants' experience indicated different levels of maturity with data assessment and management among the participating agencies. There was evidence that some participating organizations have assessed, or are in the process of assessing, the way data is managed in some areas of their organization. However, none of the participants had used the NCHRP tools.

Day 2: Breakout Exercise and Roundtable Discussion

Day two of the workshop focused on hands-on exercises with the tool and a roundtable discussion for the attendees to share their experience with the tools. Each representing agency completed two assessments. During the first assessment, the participants evaluated the value of data for a business area using the data value assessment tool. In the second assessment, the participants used the data management assessment tool to evaluate the maturity of data management for a specific data program. Each exercise describes a problem statement, the objective, and four related tasks the participants had to complete. The two exercises are provided in Appendix C. After each exercise, the facilitators led a roundtable discussion to debrief the participants on their views, difficulty, usability, and usefulness of the tool.

In general, the participants gave positive responses to the usefulness of the tool to support data management. There was a strong consensus on the usability of the tool as well. However, the participants made some recommendations for FHWA and AASHTO to consider in improving the usability of the tools. The main themes from the discussion are presented under the Key Takeaways section of the report.

DENVER WORKSHOP

FHWA held the second workshop in Denver, Colorado, on January 23-24, 2017. Colorado DOT (CDOT) hosted the workshop at CDOT's headquarters and the workshop followed a similar

pattern as the Philadelphia workshop. Day one of the workshop focused on the introduction and presentation of the background projects/materials and outputs/tools of the NCHRP 08-92 project, and the demonstration of the data assessment tools. Day two of the workshop focused on a breakout exercise and a roundtable discussion with the participants sharing their experiences using the tools.

Day 1: Introduction, Presentation, and Tool Demonstration

Representatives from FHWA, AASHTO, and CDOT welcomed the participants to the workshop. There were six participants from six State DOTs at this workshop.

Two consultants from Wood Environment & Infrastructure Solutions, Inc. facilitated the workshop. The participants introduced themselves, briefly described their experience with data management, and provided a general overview of their organizations data management practices. The maturity spectrum in data assessment and management among the participating DOTs in this workshop varied slightly. A few DOTs described having strong data governance structures and processes at the agency level to manage data.

There were two DOTs who have developed agency-level business plans to assess data management. On the other hand, some DOTs also indicated that despite having logical approaches to data governance, their processes were not formally documented. One participating DOT indicated using the NCHRP self-assessment tool at some point to evaluate the agency's data. The outcome of the introductions showed two groups of DOTs. A set of DOTs who used a top-down approach to data governance/management and another group that was approaching data governance/management from the bottom up.

Day 2: Breakout Exercise and Roundtable Discussion

Day two of the workshop focused on hands-on exercises with the tool and a roundtable discussion for the attendees to share their experience with the tools. Each organization completed two assessments. During the first assessment, the participants evaluated the value of data for a specific business area using the data value assessment tool. In the second assessment, the participants used the data management assessment tool to evaluate the maturity of data management for a specific data program. Each exercise described a problem statement, the objective, and four related tasks the participants had to complete. The two exercises are provided in Appendix C. After each exercise, the facilitators led a roundtable discussion to debrief the participants on their views on the difficulty, usability, and usefulness of the tool.

It was evident in the discussions that the participants find the NCHRP tool very useful and can add value to their past and ongoing efforts in data assessment and management. In fact, one participating DOT indicated that their organization has used a paper-based model in the past to engage in a similar assignment but finds this tool more useful.

KEY TAKEAWAYS

The following takeaways were derived from the roundtable discussion from the workshops:

Data Assessment Tools Can Add Value to Data Management Programs – The participants responded strongly to the usefulness of the framework, guide, and the tools to agencies business.

They indicated that undertaking such engagement at any level can help data owners or users to make a compelling case to improve the way data is procured or managed.

Strong Data Governance Can Support Implementation of the Tools and Results – The participants indicated that the location of an agency’s data governance team can influence buy-in for the implementation of the tool and the subsequent use of the results. Identifying the right and committed champion as part of developing the data governance plan can drive the implementation process. A significant section of the workshop participants came from the planning division of their agencies however, the participants indicated that the planning division may not be the suitable division to champion this effort.

FHWA and AASHTO Support for State DOTs – The participants noted that undertaking such an engagement can be time and resource intensive. Although some of the DOTs were willing to host and undertake a full-blown assessment, they raised concerns about funding the process. There was a group discussion on funding options available to DOTs for such activities, however, a few participants proposed for FHWA and AASHTO to offer external facilitator(s) to assist DOTs with more complete data self-assessments.

Additional Efforts Needed to Market the Tools to Stakeholders – In the introduction sessions in each workshop, there was little awareness to the existence of the tool. In fact, very few DOTs noted that they have applied one or more of the tools in their business functions. One of the participants, who had used the tool before the workshop, suggested the need for FHWA and AASHTO to conduct a webinar and share the results from previous data self-assessments. This course will help in marketing the value of the tool to stakeholders and drive the desire for the tool.

Modifying the Tool to Suit the User’s Needs – The participants made a few suggestions for FHWA and AASHTO to consider modifying the tools to make them more user friendly. The participants put forth the following suggestions:

1. ***Text wrap the comments*** – The comments section of the tool is important for users to replicate the results. Making the comments easily accessible and easy to read is important. Currently, the user must scroll through the text box to see the entire text in the comments box when the comments exceeds the width of the cell. Text wrapping the comments cell can be helpful.
2. ***Synthesize the evaluator’s comments into one report/tab*** – Insert an additional tab and write a macro to condense and organize all the comments into one report. This can provide a quick snapshot to the evaluator’s thinking behind the rankings assigned to the rating elements. Again, this will facilitate replication of the results later.
3. ***Provide additional linkages between the tabs*** – Users must type-in the programs, activities, and data sources when configuring the tools, even if the user is selecting from the example list tab. The participants suggested that the Configuration Tab and the Example List Tab be linked and provide a drop-down button on the configuration tab for the user to choose from.

4. ***Provide options for multiple user inputs*** – Currently, the tool can only take one user input at a time. Hence, reviewing multiple users’ responses will mean going through multiple spreadsheets or files. For easy access to multiple responses, the participants suggested adding multiple columns for each rating element to allow for simultaneous rating for each worksheet and multiple results at a glance. This will provide easy comparison of multiple responses and facilitate consensus building for the final assessment.
5. ***Live data gathering*** – To facilitate consensus building, the participants suggested making the self-assessment a live tool (e.g. web-based). That is allowing multiple users to work in the tool simultaneously. This will allow responders to see the ratings and reasons of other users to help them rate the elements. This suggestion supports point four above.
6. ***Provide more granularity to the rating elements*** – The participants raised concerns about lumping too many elements into one group making it difficult for the user to rate the group of elements. There were instances that a user will be doing so well in one process but not so well in other processes within a given rating group. This creates confusion. The participants were asked to rank the group with the least rating and add comments because rating the group higher will reduce the priority to address the potential deficiency.
7. ***The tool should be able to be run in other assessment tools*** – It was suggested that this tool be compatible with other assessment tools, like Decision Lens.
8. ***The tool should provide a suggested action plan*** – The participants suggested that the tool should provide suggested actions to take based on the results. The tool seems more focused on the problems and not the solutions.

LIST OF STATES WILLING TO CONDUCT AN IN-DEPTH DATA ASSESSMENT

One of the objectives for conducting the workshops was to identify DOTs to champion the implementation of an in-depth data assessment. At the end of each workshop, the participants were asked if their organization would be likely to champion the effort. Table 2 shows the DOTs willing to conduct an in-depth assessment and participate in a follow-up peer exchange. In addition to the agencies that responded “yes” to conducting a more complete data self-assessment, there were some agencies that showed interest to host but needed to consult with other stakeholders to confirm. These agencies were categorized as “Maybe” agencies. Table 3 shows the agencies that responded maybe.

All of the agencies that responded “yes” or “maybe” also responded that they would be willing to engage in a peer exchange. In fact, at the Denver workshop that was a point of emphasis. The participants thought strongly that the States should be engaging in more peer exchanges on this subject because there is much to learn from each other on this topic.

Table 2. List of agencies that responded “Yes” to the in-depth assessment.

Agency	Comments
Tennessee DOT	TNDOT was concerned about funding and identifying effective facilitator(s).
Kentucky DOT	KYDOT has undertaken similar efforts at different levels. KYDOT will be interested in examining the program level.
Pennsylvania DOT	PennDOT will have to identify the right person to lead the process since this office doesn't own most of the data they use.
DVRPC (MPO)	DVRPC does not own most of the data they use. But they believe this process will initiate good communication between the data owners and DVRPC regarding what the owners should or should not be collecting.
CalTrans	CalTrans is interested in the Agency-wide assessment tool.
Iowa DOT	Iowa is interested in the data value assessment.
Minnesota DOT	MnDOT is interested in the data value assessment. MnDOT has already taken the lead in the agency-wide assessment and looking to explore the individual program activity areas.

Table 3. List of agencies that responded “Maybe” to the in-depth assessment.

Agency	Comments
Colorado DOT	CDOT will have to seek buy-in from the Chief Data Officer and Senior Executives.
Nevada DOT	NDOT will have to seek buy-in from division leaders and with support from FHWA, they will consider hosting. Bringing an outside consultant will be helpful for NDOT. NDOT finds the program specific assessment more useful to NDOT.
Utah DOT	UDOT is very interested in improving data management/governance.

APPENDIX A. PHILADELPHIA WORKSHOP AGENDA

Workshop on Data to Support Transportation Agency Business Needs:
A Self-Assessment Guide

Sponsored by: FHWA, in cooperation with AASHTO

Co-Hosts: Pennsylvania Department of Transportation (PennDOT)
Delaware Valley Regional Planning Commission (DVRPC)

American College of Physicians (ACP) Building
190 N Independence Mall West, 8th floor
Philadelphia, PA 19106-1520

Dates and Times: *Wednesday, December 13, 2017; 1:00 PM – 5:00 PM*
Thursday, December 14, 2017; 8:00 AM – 12:00 PM

Purpose and Outcomes

PLEASE BRING A LAPTOP COMPUTER!

The purpose of this workshop is to:

- Demonstrate how the Data Self-Assessment tool can be implemented
- Identify State DOTs to lead with the implementation of the Guide and Tools resulting from NCHRP Project 08-92

Prior to the workshop, it is expected that participants will have reviewed:

- The NCHRP Report 814, *Data to Support Transportation Agency Business Needs: A Self-Assessment Guide* ([NCHRP Report 814 Download](#)). A summary PowerPoint is included as an attachment to this agenda.
- The NCHRP Report 814 Data Value and Management Assessment tools (you can download from link above).

Workshop outcomes:

- Participants will become familiar with existing data-assessment guide and tools
- Participants will be able to use the self-assessment tools
- Participants will understand the level of efforts required for the implementation of a data program self-assessment
- Stimulate participants' interest in implementing data program self-assessment
- A list of state DOTs who can champion the implementation of the Transportation Agency Data Self-Assessment Guide

Day One Agenda – Wednesday, December 13, 2017

1. **Welcome, Introductions and Overview** 1:00 - 1:15
 - *Welcome to DVRPC and Safety Moment (DVRPC)*
 - *Welcome from FHWA, AASHTO, and Host State*
 - *Introductions (Group)*
 - *Workshop Scope and Objectives (Facilitator)*

 2. **Icebreaker/Warm-up - Experience with Data Management (Group)** 1:15 - 1:35
 - *What is your experience with Data Assessment and Management?*
 - *Have you used these tools before?*
 - *Have you ever been without quality data but asked to predict an outcome?*
 - *What would you say your Agencies maturity level is with Data Management?*

 3. **Transportation Data Self-Assessment Overview (Facilitator)** 1:35 - 2:15
 - What is data self-assessment?
 - Why is data Self-assessment important?
 - What does AASHTO say about data?
 - What are the resulting benefits of data self-assessment?
 - Are there any lost opportunities without strong data management?

 4. **NCHRP 08-92 Document Review (Facilitator)** 2:15 - 3:00
 - Background and expected results
 - Data value and data management assessment elements, processes, and tools
- Break*
5. **Tool Demonstration (Facilitator)** 3:15 - 4:45
 - Preparing for the assessment
 - Conducting the assessment
 - Setting up the tools

 6. **Summary (Facilitator)** 4:45 - 5:00
 - Closing Comments

Dinner - On your own.

Day Two Agenda – Thursday, December 14, 2017

1. **Day One Recap (Facilitator)** 8:00 - 8:15
2. **Individual Exercise—Data Value Assessment (Facilitator)** 8:15 - 9:30
 - Pre-configure tool for groups/DOTs
- Break*
3. **Individual Exercise—Data Management Assessment Program (Facilitator)** 9:45 - 11:00
 - Pre-configure tool for groups/DOTs
4. **Recap, Group/DOTs Presentation, Roundtable Discussions (Facilitator)** 11:00 - 11:50
 - What were your challenges?
 - Would this be beneficial to your existing process?
 - Would your agency be willing to champion implementation?
 - Would your agency be willing to participate in a future peer exchange?
 - What recommendations do you have to improve implementation of the guide?
5. **Summary** 11:50 - 12:00
 - Closing Comments

APPENDIX B. DENVER WORKSHOP AGENDA AND PRESENTATION

Workshop on Data to Support Transportation Agency Business Needs:
A Self-Assessment Guide

Sponsored by: FHWA, in cooperation with AASHTO

Host: Colorado Department of Transportation (CDOT)

CDOT Headquarters
Shumate Building
4201 E. Arkansas Avenue
Denver, CO 80222

Dates and Times: Tuesday, January 23, 2018; 1:00 PM – 5:00 PM
Wednesday, January 24, 2018; 8:00 AM – 12:00 PM

Purpose and Outcomes

PLEASE BRING A LAPTOP COMPUTER!

The purpose of this workshop is to:

- Demonstrate how the Data Self-Assessment tool can be implemented
- Identify State DOTs to lead with the implementation of the Guide and Tools resulting from NCHRP Project 08-92

Prior to the workshop, it is expected that participants will have reviewed:

- The NCHRP Report 814, *Data to Support Transportation Agency Business Needs: A Self-Assessment Guide* ([NCHRP Report 814 Download](#)). A summary PowerPoint is included as an attachment to this agenda.
- Download the NCHRP Report 814 Data Value and Management Assessment tools (you can download from link above). Make sure they can run on your computer.

Workshop outcomes:

- Participants will become familiar with existing data-assessment guide and tools
- Participants will be able to use the self-assessment tools
- Participants will understand the level of effort required for the implementation of a data program self-assessment
- Stimulate participants' interest in implementing data program self-assessment
- A list of state DOTs who can champion the implementation of the Transportation Agency Data Self-Assessment Guide

Day One Agenda – Tuesday, January 23, 2018

1. **Welcome, Introductions and Overview** 1:00 - 1:15
 - Welcome to CDOT and Safety Moment (CDOT)
 - Welcome from FHWA, AASHTO
 - Introductions (Group)
 - Workshop Scope and Objectives (Facilitator)
2. **Icebreaker/Warm-up - Experience with Data Management (Group)** 1:15 - 1:35
 - What is your experience with Data Assessment and Management?
 - Have you used these tools before?
 - Have you ever been without quality data but asked to predict an outcome?
 - What would you say your Agencies maturity level is with Data Management?
3. **Transportation Data Self-Assessment Overview (Facilitator)** 1:35 - 2:15
 - What is data self-assessment?
 - Why is data Self-assessment important?
 - What does AASHTO say about data?
 - What are the resulting benefits of data self-assessment?
 - Are there any lost opportunities without strong data management?
4. **NCHRP 08-92 Document Review (Facilitator)** 2:15 - 3:00
 - Background and expected results
 - Data value and data management assessment elements, processes, and tools

Break

5. **Tool Demonstration (Facilitator)** 3:15 - 4:45
 - Preparing for the assessment
 - Conducting the assessment
 - Setting up the tools
6. **Summary** 4:45 - 5:00
 - Closing Comments

Dinner - we will likely meet as a group for those interested.

Day Two Agenda – Wednesday, January 24, 2018

1. **Individual Exercise—Data Value Assessment (Facilitator)** 8:00 - 9:30
 - Pre-configure tool for groups/DOTs

Break

2. **Individual Exercise—Data Management Assessment Program (Facilitator)** 9:45 - 11:00
 - Pre-configure tool for groups/DOTs

3. **Recap, Group/DOTs Presentation, Roundtable Discussions (Facilitator)** 11:00 - 11:50
 - What were your challenges?
 - Would this be beneficial to your existing process?
 - Would your agency be willing to champion implementation?
 - Would your agency be willing to participate in a future peer exchange?
 - What recommendations do you have to improve implementation of the guide?

4. **Summary** 11:50 - 12:00
 - Closing Comments

APPENDIX C. WORKSHOP EXERCISES

Exercise 1: Data Value Assessment (8:00 am – 9:00 am)

The objective of this exercise is to assess the degree to which data users believe that existing data sets are providing value and meeting their information needs.

Problem Statement: Your Bureau/Unit/Division Chief has received sentiments from staff about the data they use in making decisions. To help your Bureau Chief better understand employee perceptions about data, your team has been tasked to assess the value (importance, availability, quality, and usability) of data in one business area of the Bureau. Your assignment includes the following tasks:

Task 1: Decide on a business area (e.g., Performance Management, Program Development and Management (STIP), Freight Planning, Asset Management, Highway Planning, Safety Planning, etc.). You can use examples from the Example Lists Tab OR come up with your own business area.

Task 2: Identify up to five specific activities relevant to the business area you specified in Task 1. List up to five data sources for the collection of activities identified.

Task 3: Assign ratings to each of the activities and analyze the results.

Task 4: Select three data types and identify the gaps related to quality (currency, accuracy, and completeness), importance, and usability. For each gap identified, communicate how it can impact your business line.

Each person will have 3-5 mins to present their results.

Exercise 2: Data Management Maturity Assessment (9:00 am – 10:00 am)

The objective of this exercise is to assess the current level of agency capabilities for managing data assets to maximize their value.

Problem Statement: Your Department Director/Secretary/Commissioner wants to make efficient use of limited resources by improving data management throughout the Department. She has asked each Data Manager to assess how data is managed in their specific data program. You have been tasked to assess your data program in terms of data strategy and governance, lifecycle data management, data integration, data collaboration, and quality management and make recommendations for improvement. Your assignment includes the following tasks:

Task 1: Decide on the weights for each of the rating elements and sub-elements. (The total has default values, but you can change them. Remember, a weight of 0% excludes the element or sub-element from the ratings). Also, set the minimum response threshold on the configuration tab. The minimum threshold determines the minimum response that the user must provide for a maturity level to be a candidate for ranking.

Task 2: Assign ratings to each of the data elements and sub-elements and analyze the results.

Task 3: Assign ratings to each of the activities and analyze the maturity levels of each element.

Task 4: Discuss the results and recommendations or activities to advance data management.

Each person will have 3-5 mins to present the results from the exercise.

