This collection of information is voluntary and will be used to better understand agency capabilities and needs so that FHWA can provide targeted and effective support to these agencies. Public reporting burden is estimated to average 1.5 hours per response, including the time for reviewing instructions searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this collection is 2125-0646. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Michael Howell Information Collection Clearance Officer, Federal Highway Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590.

# Questionnaire to Support the Development of the TMIP Performance-Based Transportation Planning Toolbox

## Questionnaire Introduction

Welcome and thank you for participating in the Questionnaire!

With the new emphasis on performance measurement and prediction under MAP-21, the Federal Highway Administration (FHWA) has undertaken to develop a toolbox to support performance-based transportation planning by state and local agencies through its Travel Model Improvement Program (TMIP).

The objective of the TMIP Performance-Based Transportation Planning Toolbox (the Toolbox) is to be a reference resource for the selection and application of analytical tools and methods incorporating principles of risk management to support data driven, performance-based transportation planning. The goal of the Toolbox is not to identify a single or even a set of ideal tools, but rather to provide a process, information and examples helping agencies to thoughtfully identify the appropriate tools and methods for their analytical needs with careful consideration of the data available, the issues and the risks involved.

The purpose of this questionnaire is to help identify the goals, experiences, needs and risks that your agency faces in generating performance measures to support transportation planning. In particular, through this Questionnaire, TMIP hopes to learn more about:

1. The issues of importance to your agency.
2. Your agency’s experience and concerns related to performance measurement and prediction.
3. The technical and non-technical risks related to quantitative analysis to support the prediction of performance measures.
4. The analysis tools and methods used by your agency and the resources necessary to develop, use and maintain them.

TMIP will use the results of this Questionnaire to help focus the Toolbox in areas of the most need and to provide information about resources required to develop, use and maintain various types of analysis tools.

**Your responses will represent the goals, experiences and needs of your agency.** Thank you again for your participation.

Please email [TMIP\_Survey@rsginc.com](mailto:TMIP_Survey@rsginc.com) with any questions or concerns.

## Agency Background

1. Agency Name
2. Website URL
3. Person responsible for providing this information
   1. Name
   2. Position
   3. Email
   4. Phone Number
4. What is the status of tolling within your agency’s jurisdiction?
   1. Existing toll facilities
   2. No existing, but planned toll facilities
   3. No planned toll facilities, but enabling legislation
   4. No enabling legislation
   5. No toll facilities or plans, unsure of legislation
5. What is the status of passenger rail service in your agency’s jurisdiction?
   1. Existing passenger rail service (at least four trains daily)
   2. No existing, but planned passenger rail service (at least four trains daily)
   3. No existing or planned passenger rail service
6. At any time prior to this Questionnaire, was any part of your area designated non-attainment or maintenance for any of the following air quality criteria pollutants?
   1. Ozone
   2. CO (1 hr)
   3. CO (8 hr)
   4. PM10
   5. PM2.5 (daily)
   6. PM2.5 (annual)
   7. NO2 (1 hr)
   8. NO2 (annual)
7. [If passenger rail service (Q5a or b)] Has your region ever submitted a New Starts/Small Starts applications?
   1. Completed one or more
   2. One or more in progress but none completed
   3. Contemplating one or more but none in progress
   4. None completed, in progress or contemplated
8. For each of the following please indicate, as best you can, the importance of the following issues to your agency as a whole:

|  | Extremely Important | Very  Important | Important | Not very Important | Not at all  Important |
| --- | --- | --- | --- | --- | --- |
| Transportation | | | | | |
| Road/Cordon Pricing |  |  |  |  |  |
| Mobility/Congestion Reduction |  |  |  |  |  |
| Transit |  |  |  |  |  |
| Asset / Infrastructure Conditions |  |  |  |  |  |
| Travel Demand / Congestion Management |  |  |  |  |  |
| Traffic Operations/Systems Management |  |  |  |  |  |
| Travel Time Reliability |  |  |  |  |  |
| Economics | | | | | |
| Economic Impacts / Cost Effectiveness |  |  |  |  |  |
| Freight |  |  |  |  |  |
| Visitors/Seasonal Residents |  |  |  |  |  |
| Economic Development |  |  |  |  |  |
| Environmental | | | | | |
| Environmental Impacts |  |  |  |  |  |
| Air Quality / Climate Change |  |  |  |  |  |
| Environmental Justice / Equity / Transportation for Seniors |  |  |  |  |  |
| Quality of Life | | | | | |
| Sustainability / Livability |  |  |  |  |  |
| Walking / Biking/ Active Transportation |  |  |  |  |  |
| Safety |  |  |  |  |  |
| School Transportation |  |  |  |  |  |
| Growth | | | | | |
| Smart Growth / Transit-Oriented Design/Built Environment |  |  |  |  |  |
| Demographics/Evolution |  |  |  |  |  |
| Long Distance Travel/ Migration |  |  |  |  |  |
| Other | | | | | |
| (please specify) |  |  |  |  |  |

## Data Sources and Data Collection

1. Which of the following freely available federal data sources does your agency use (check all that apply)?
   1. Decennial Census
   2. Census Bureau - American Communities Survey (ACS)
   3. Census Bureau - Public Use Micro Data (PUMS) (either Decennial or ACS)
   4. Census Bureau - Longitudinal Employer-Household Dynamics (LEHD)
   5. Census Bureau - County Business Patterns
   6. Census Transportation Planning Package (CTPP)
   7. Bureau of Labor Statistics data
   8. Bureau of Economic Analysis - Regional Economic Accounts
   9. Bureau of Transportation Statistics – Transportation Statistics
   10. Bureau of Transportation Statistics – Commodity Flow Survey (CFS)
   11. Bureau of Transportation Statistics – Intermodal Freight Facilities Database
   12. Surface Transportation Board – Carload Waybill Sample
   13. Federal Highway Administration – Freight Analysis Framework (FAF)
   14. Federal Highway Administration – Vehicle Inventory and Use Survey (VIUS)
   15. Federal Highway Administration – National Household Travel Survey (NHTS)
   16. Federal Highway Administration – Highway Statistics Series (HPMS data)
   17. Federal Highway Administration – National Bridge Inventory (NBI)
   18. Federal Transit Administration – National Transit Database (NTD)
   19. National Highway Traffic Safety Administration – NASS-GES/FARS data
   20. Other (please specify)
2. Which of the following state data sources does your agency use (check all that apply)?
   1. Covered employment and wages data (ES-202)
   2. Economic input/output data (I/O)
   3. Population projections
   4. Economic forecasts
   5. School enrollment projections
   6. Vehicle registration data
   7. Traffic counts
3. Which of the following proprietary/commercial data does your agency purchase and use (check all that apply)?
4. Employment/establishment data sets (InfoGroup/InfoUSA, Dunn & Bradstreet, etc.)
5. Economic forecasts (Woods & Poole, etc.)
6. Economic input/output data (IMPLAN, etc.)
7. Composite/bundled data (Nielsen/Claritas, etc.)
8. Trucking/warehousing databases (FleetSeek, Leonard’s Guide, etc.)
9. Freight/commodity flow (IHS Global Insight/Reebie TRANSEARCH, IMPLAN, etc.)
10. Travel time data (INRIX, NavTeq, TomTom, AirSage, etc.)
11. Other (please specify)
12. Does your agency have or have access to a GIS database of all land parcels within your planning jurisdiction?
13. How frequently does your agency conduct/participate in the following types of special surveys?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1-2 years | 3-5 years | 6-10 years | Less than every 10 years | Never |
| Household travel survey |  |  |  |  |  |
| Establishment travel survey |  |  |  |  |  |
| Transit on-board survey |  |  |  |  |  |
| Visitor survey |  |  |  |  |  |
| External cordon line origin-destination survey |  |  |  |  |  |
| Corridor or other special origin-destination survey |  |  |  |  |  |
| Freight roadside intercept survey |  |  |  |  |  |
| Commodity Flow Survey |  |  |  |  |  |
| Stated preference surveys |  |  |  |  |  |
| Parking Surveys |  |  |  |  |  |
| Special Generator Surveys |  |  |  |  |  |
| Panel Surveys |  |  |  |  |  |

1. Which of the following emerging data sources / collection technologies has your agency used (check all that apply)?
2. Archived operational traffic data
3. Transit operational data on actual vehicle headways
4. Web-based surveys
5. GPS based external cordon line or other special origin-destination surveys
6. Cell-phone based external cordon line or other special origin-destination surveys
7. Bluetooth based external cordon line or other special origin-destination surveys
8. GPS-based household surveys
9. Tablet-based on-board surveys
10. ATRI truck GPS data
11. Electronic transit fare and toll collection data
12. Data on internet and smart-phone use, purchases, etc.

## Performance Measurement and Prediction

1. How important are quantitative analysis / performance measures in your agency’s current decision making processes?
   1. Extremely Important
   2. Very important
   3. Somewhat Important
   4. Not very important
   5. Not at all important
2. Do you think MAP-21 will make performance measures and quantitative analysis more important in your agency’s decision making process? [Y/N/do not have enough information yet]
3. What experience does your agency have generating the following general types of performance measures:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Extensive Experience | Considerable Experience | Some Experience | A Little Experience | No Experience |
| **Transportation** | | | | | |
| Bridge Conditions |  |  |  |  |  |
| Pavement Conditions |  |  |  |  |  |
| Other Asset Conditions |  |  |  |  |  |
| Mode Split/Alternative Modes |  |  |  |  |  |
| Transit Ridership |  |  |  |  |  |
| VMT / Roadway Volume |  |  |  |  |  |
| Average Speed / Delay |  |  |  |  |  |
| Reliability |  |  |  |  |  |
| Accessibility |  |  |  |  |  |
| **Economic / Freight** | | | | | |
| Freight Mobility |  |  |  |  |  |
| User Benefits |  |  |  |  |  |
| Economic Impacts |  |  |  |  |  |
| Economic Development |  |  |  |  |  |
| Visitor Travel/Seasonal Residents |  |  |  |  |  |
| **Cost** | | | | | |
| Cost |  |  |  |  |  |
| Cost Effectiveness |  |  |  |  |  |
| **Environmental** | | | | | |
| Ecosystem / Biodiversity / Habitat |  |  |  |  |  |
| Water Quality |  |  |  |  |  |
| Wetlands |  |  |  |  |  |
| Air Quality |  |  |  |  |  |
| Climate Change |  |  |  |  |  |
| Energy Consumption |  |  |  |  |  |
| Environmental Health |  |  |  |  |  |
| Noise |  |  |  |  |  |
| **Community** | | | | | |
| Health / Physical Activity / Walking / Biking |  |  |  |  |  |
| Land Use |  |  |  |  |  |
| Archeological / Historical Resources |  |  |  |  |  |
| Social |  |  |  |  |  |
| Visual Quality |  |  |  |  |  |
| **Quality of Life** | | | | | |
| Environmental Justice / Equity |  |  |  |  |  |
| Parks and Recreation |  |  |  |  |  |
| Schools |  |  |  |  |  |
| Safety (crashes, crash rates) |  |  |  |  |  |
| Emergency Response Times |  |  |  |  |  |
| **Other** | | | | | |
| (please specify) |  |  |  |  |  |

1. [For measures in Q14 with experience] For each of the following general types of performance measures, please rate on a scale of 1 to 5, your confidence in the accuracy of your agency’s data on current conditions and the ability of your agency to accurately forecast future conditions. [5 = high confidence, 1 = no confidence]

|  | Accurate Data on Current Conditions | Accurate Forecasts of Future Conditions |
| --- | --- | --- |
| **Transportation** | | |
| Bridge Conditions |  |  |
| Pavement Conditions |  |  |
| Other Asset Conditions |  |  |
| Mode Split/Alternative Modes |  |  |
| Transit Ridership |  |  |
| VMT / Roadway Volume |  |  |
| Average Speed / Delay |  |  |
| Reliability |  |  |
| Accessibility |  |  |
| **Economic / Freight** | | |
| Freight Mobility |  |  |
| User Benefits |  |  |
| Economic Impacts |  |  |
| Economic Development |  |  |
| Visitor Travel/Seasonal Residents |  |  |
| **Cost** | | |
| Cost |  |  |
| Cost Effectiveness |  |  |
| **Environmental** | | |
| Ecosystem / Biodiversity / Habitat |  |  |
| Water Quality |  |  |
| Wetlands |  |  |
| Air Quality |  |  |
| Climate Change |  |  |
| Energy Consumption |  |  |
| Environmental Health |  |  |
| Noise |  |  |
| **Community** | | |
| Health / Physical Activity / Walking / Biking |  |  |
| Land Use |  |  |
| Archeological / Historical Resources |  |  |
| Social |  |  |
| Visual Quality |  |  |
| **Quality of Life** | | |
| Environmental Justice / Equity |  |  |
| Parks and Recreation |  |  |
| Schools |  |  |
| Safety (crashes, crash rates) |  |  |
| Emergency Response Times |  |  |
| **Other** | | |
| (please specify) |  |  |

## General Risks for Quantitative Analysis

*Note: This set of questions (MaxDiff) serves to obtain quantitative information from respondents about the general adverse risks to the successful prediction of performance measures. MaxDiff will provide a raw utility for each statement and the relative/ranked importance among all statements. MaxDiff is a statistical method pioneered by Jordan Louviere in the early 1990s. MaxDff questions force respondents to make choices between options and produce results that show the relative importance of the items being rated. This is useful because it avoids situations where respondents rate most or all statements as “important” making it more difficult to distinguish the most important statement. Instead, the raw utility of each MaxDiff statement is calculated allowing the analyst to examine the relative differences in importance among all statements.*

*[Note: Example question for illustrative purposes]*

Next, you will see a series of 8 questions. For each question, you will see 4 types of analyses that could be difficult because of inaccurate or incomplete input data, invalid assumptions, or inaccurate or incomplete data for model development/calibration/validation.

For each question, please choose the analysis that is MOST LIKELY to be a risk to your agency and also choose the analysis that is LEAST LIKELY to be a risk to your agency because of data problems.

19-26. MaxDiff1

Which of the following analysis is MOST LIKELY to be a risk to your agency because of inaccurate or incomplete input data, invalid assumptions, or inaccurate or incomplete data for model development/calibration/validation? Which of the following analysis is LEAST LIKELY to be a risk to your agency because of problems with data?

|  |  |  |
| --- | --- | --- |
| MOST LIKELY |  | LEAST LIKELY |
| € |  | € |
| € |  | € |
| € |  | € |
| € |  | € |

*Note: This is the full list of statements to be asked. Each statement is shown at least twice to the respondent. An experimental design is used to determine which four statements are shown in each question.*

1. Asset conditions forecast
2. Traffic forecasts
3. Operations analysis
4. Transit ridership forecast
5. Intercity/external forecast
6. Pedestrian/cyclist activity forecast
7. Economic analysis
8. Freight forecast
9. Project cost estimate
10. Environmental impact assessment
11. Land use/demographic forecast
12. Environmental Justice / equity analysis

27-34. MaxDiff2

Which of the following analysis is MOST LIKELY to be a risk to your agency because of technical problems, such as in-sensitivity or over-sensitivity of analysis tools, over-calibration or over-specification or models, use of adjustment factors, poor predictive power of existing tools, or lack of available tools or methods? Which of the following analysis is LEAST LIKELY to be a risk to your agency because of technical problems with tools or methods?

*Note: The same list of 12 statements will be asked. Each statement is shown at least twice to the respondent. An experimental design is used to determine which four statements are shown in each question.*

35-42. MaxDiff3

Which of the following analysis is MOST LIKELY to be a risk to your agency because of budget or schedule problems, such as cost overruns, schedule delays, insufficient staffing or insufficient staff skills to correctly apply available tools? Which of the following analysis is LEAST LIKELY to be a risk to your agency because of budget or schedule problems with analysis tools?

*Note: The same list of 12 statements will be asked. Each statement is shown at least twice to the respondent. An experimental design is used to determine which four statements are shown in each question.*

1. Does your agency have a formal risk management process/program?
   1. Yes
   2. No
2. Does your agency have a formal quality control or quality assurance process/program?
   1. Yes
   2. No

## Analysis Tools and Methods

1. Does your agency document its decision process to develop or acquire analysis tools / methods?
   1. Yes
   2. No
2. [if Yes] Please provide a title of and/or link to an example of such documentation.
3. Does your agency document its decision process to use an analysis tool / method for a particular project or program?
   1. Yes
   2. No
4. [if Yes] Please provide a title of and/or link to an example of such documentation.
5. Which of the following tools has your agency used (directly or through consultant assistance) within the past three years (check all that apply)?
   1. Sketch planning tools (IDAS, SPASM, SMITE, etc.)
   2. Strategic models (SmartGAP, GreenSTEP, EERPAT, etc.)
   3. Land use model / visioning tool (UrbanSim, PECAS, DRAM/EMPAL, LUSDR, LEAM, CubeLand, TRANUS, MEPLAN, METROSIM, UPLAN, CommunityViz, i-PLACE3S, EnvisionTomorrow, WhatIf?, etc.)
   4. Travel demand model (TransCAD, CUBE, EMME, VISUM, QRS II, etc.)
   5. Dynamic traffic assignment (DTA) (CUBE Avenue, TransModeler, TRANSIMS, VISTA, DynaSmart, DynusT, DynaMIT, etc.)
   6. Traffic microsimulation model (VISSIM, TransModeler, Paramics, CORSIM, etc.)
   7. Analytic/deterministic/optimization traffic tool (McTrans HCS/HCM, Synchro, TEAPAC, TRAFFIX, etc.)
   8. Economic impact / Benefit-cost tool (TREDIS, REMI, STEAM, T-PICS, HERS, Cal-B/C, NET-BC, MicroBENCOST, HDM4, etc.)
   9. Crash forecasting tool (HSM / IHSDM, SafetyAnalyst, etc.)
   10. Project (lifecycle) costing tool (RealCost, etc.)
   11. Vehicle emissions models (MOVES, EMFAC, MOBILE)
   12. Air dispersion model (AERMOD, CAL3QHC or similar)
   13. Noise impact model (FHWA’s TNM or similar)
6. Data visualization/visual analytics (ESRI, CADD, Adobe, etc.)
   1. Other (please specify)
7. [If Sketch Planning Tools] What sketch planning tool(s) does your agency use?
8. [If Strategic Models] What strategic model(s) does your agency use?
9. [If Land use model / visioning tool] Which of the tool does your agency used (check all that apply)?
   1. UrbanSim / OPUS
   2. PECAS
   3. DRAM/EMPAL
   4. LEAM
   5. CubeLand
   6. TRANUS
   7. MEPLAN
   8. METROSIM
   9. ULAM
   10. UPLAN
   11. CommunityViz
   12. i-PLACE3S
   13. EnvisionTomorrow
   14. WhatIf?
   15. MetroQuest
   16. RapidFire
   17. Custom / “Home-grown” (LUSDR, CUSIM, LUCI, etc.) (please specify)
   18. Other commercial/standard model (please specify)
10. [If Land use model / visioning tool] How long has your agency been using this tool?
    1. Still under development
    2. 1 year or less
    3. 2 years
    4. 3-5 years
    5. 5-10 years
    6. More than 10 years
11. [If Land use model / visioning tool] Is the tool integrated with the agency’s travel model?
    1. No, independent tool
    2. Integration in progress
    3. Partial integration
    4. Full operational integration
12. [If NOT Land use model / visioning tool] Is your agency considering use of a land use model / visioning tool?
    1. No, we rely on land use forecasts from another agency / source
    2. No, we rely on expert panels / professional judgment
    3. No, we rely on simple manual, rule-based processes (based on comprehensive/master plan/zoning, scale up current distribution, most recent growth areas, etc.)
    4. Yes, we are considering such tools but have no definite plans
    5. Yes, we have plans to purchase / develop a land use tool / model
13. [if Travel demand model] Which of the following is the travel demand model used to develop forecasts for by your agency (check all that apply)?
    1. Long Range Plan Development
    2. TIP Development
    3. Air Quality Conformity Demonstrations
    4. NEPA Alternatives Analysis
    5. Design Forecasts
    6. Operational Planning / Travel Demand Management
    7. Transit Studies
    8. Freight Studies
    9. Operational Studies
14. [if Travel demand model] Which personal travel modes does your travel model forecast (check all that apply)?
    1. Auto (total only)
    2. Auto (SOV and HOV)
    3. Walk/bike
    4. Bus
    5. Rail
    6. Air
    7. Other (please specify)
15. [if Travel demand model] Which freight modes does your travel model forecast (explicitly) (check all that apply)?
    1. Four tire commercial vehicles
    2. Trucks
    3. Rail
    4. Rail/Truck Intermodal
    5. Other Intermodal
    6. Barge
    7. Air
    8. Other (please specify)
    9. Freight is not modeled explicitly
16. [if Travel demand model] Which framework is your current travel model?
    1. Trip-based
    2. Tour-based (trips linked into tours)
    3. Activity-based (trips and tours linked into daily patterns)
17. [if Tour or activity-based] How long has your agency been using this tool?
    1. Still under development
    2. 1 year or less
    3. 2 years
    4. 3-5 years
    5. 5-10 years
    6. More than 10 years
18. [if Trip-based] Is your agency moving towards a tour or activity-based model?
    1. No
    2. Undecided
    3. Yes, but no concrete plans / timeframe uncertain
    4. Yes, next model update, not underway
    5. Yes, efforts currently underway
19. [if Travel demand model] Is your travel model sensitive to the following and if so, in what elements of the decision structure is it applied?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Number of Trips | Destinations | Modes | Time of Day | Routes |
| Age of Head of Household or Presence of Seniors |  |  |  |  |  |
| Land use Diversity or Mixed Use Developments |  |  |  |  |  |
| Measures of walk/bike suitability |  |  |  |  |  |
| Roadway tolls |  |  |  |  |  |
| Parking costs |  |  |  |  |  |
| Fuel prices |  |  |  |  |  |
| Accessibility [to jobs, to shopping, etc.] |  |  |  |  |  |
| Traveler attitudes |  |  |  |  |  |
| Service characteristics other than time/cost, such as reliability, real-time information, comfort, safety, etc. |  |  |  |  |  |
| Employer policies such as flex-time, free parking for carpooling, subsidized transit passes, etc. |  |  |  |  |  |
| ITS policies such as ramp metering, speed harmonization, incident management, etc. |  |  |  |  |  |

1. [if DTA] What DTA tool(s) does your agency use (check all that apply)?
   1. TRANSIMS
   2. CUBE Avenue
   3. TransModeler
   4. VISTA
   5. DynaSmart
   6. DynusT
   7. DynaMIT
   8. Other   
      (please specify)
2. [if DTA] How long has your agency been using the DTA tool(s)?
   1. Still under development
   2. 1 year or less
   3. 2 years
   4. 3-5 years
   5. 5-10 years
   6. More than 10 years
3. [if NOT DTA] Is your agency moving towards a dynamic traffic assignment?
   1. No
   2. Undecided
   3. Yes, but no concrete plans / timeframe uncertain
   4. Yes, next model update or planning cycle, not underway
   5. Yes, efforts currently underway
4. [if Traffic microsimulation model] What traffic microsimulation model(s) does your agency use (check all that apply)?
   1. VISSIM
   2. TransModeler
   3. Paramics
   4. CORSIM
   5. Other (please specify)
5. [if Analytic/deterministic/optimization traffic tool] What analytic/deterministic/optimization traffic tool(s) does your agency use (check all that apply)?
   1. McTrans HCS/HCM
   2. Synchro
   3. TEAPAC
   4. TRAFFIX
   5. Other (please specify)
6. [if Economic impact / Benefit-cost tool] What economic impact / benefit-cost tool(s) does your agency use (check all that apply)?
   1. TREDIS
   2. REMI
   3. STEAM
   4. T-PICS
   5. HERS
   6. Cal-B/C
   7. NET-BC
   8. MicroBENCOST
   9. HDM4
   10. Other Custom / “Homegrown”
   11. Other   
       (please specify)
7. [if Economic impact / Benefit-cost tool] How long has your agency been using the economic impact/benefit-cost tool?
   1. Do Not Use
   2. 1 Year or less
   3. 2 Years
   4. 3-5 Years
   5. 5-10 Years
   6. 10 Years
8. Which of the following software does your agency use for visualization / visual analytics?
9. ESRI (AcrMap)
10. CADD (Bentley Microstation, Geopak, Leap Suite, etc.)
11. Adobe (Photoshop, Premiere, Illustrator)
12. Microsoft (Word, Excel, Viso)
13. HEC-RAS
14. HY8
15. USGS Maps
16. Trimble
17. Ziess/Intergraph
18. Ortho photos
19. Google Earth
20. Pathway Viewer
21. Visidata Viewer
22. Lumon-3D
23. Silverlight
24. Slope\W
25. MSEW
26. SHORING
27. SLIDE
28. FoSSA
29. ReSSA
30. ALLPile
31. ArchVision (RPC) (Trees, Cars, People, Water)
32. Autoturn
33. Which of the following does your agency use these tools for (check all that apply)?
34. Reports
35. Powerpoint presentations
36. Process charts
37. Public meeting media
38. Viewing/evaluating alternate alignments
39. Viewing/evaluating alternate operational strategies
40. Accident data review
41. Roadway (pavement) conditions review
42. Asset review (signs, guardrails, etc.)
43. 3D models
44. 3D color renderings
45. Animations
    1. Photomontage