

RED FLAG SUMMARY

(Form Revised November 2004)

The purpose of this Red Flag Summary is to identify concerns that could cause revisions to the anticipated design and construction scope of work, the proposed project development schedule, the estimated project budget, or the potential impacts of the project on the surrounding area.

Date Red Flag Summary Completed:	<u>October 14, 2005</u>
District:	<u>ODOT District 8</u>
Project Name (County, Route and Section):	<u>Western Hamilton County Transportation Study</u>
City, Township or Village Names(s):	<u>City of Cincinnati, City of Harrison, City of Cheviot, Village of Cleves, Village of North Bend, Village of Addyston, Harrison Township, Crosby Township, Colerain Township, Whitewater Township, Miami Township, Green Township, Delhi Township</u>
PID:	<u>75846</u>
Prepared by:	<u>Robyn Bancroft, OKI Corridor Studies Project Manager</u>
ODOT Project Manager:	<u>N/A*</u>

GENERAL PROJECT PLANNING INFORMATION:

Project Description:

The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) has initiated this study to bring together the diverse interests of Western Hamilton County to identify transportation deficiencies and make recommendations for improvements. The purpose is to develop a strategic transportation plan that will improve mobility and safety for residents, commuters, visitors and freight throughout Western Hamilton County. This includes looking at such issues as improving the ability to travel and connect Western Hamilton County with Butler County, Dearborn County, and Downtown Cincinnati. The study will also look at issues affecting the overall traffic flow including new improvement ideas for public transit, the interstate system, and local roadways.

Project Limits/General Location:

The study will include roadways of the western portion of Hamilton County, Ohio stretching east to west from the Mill Creek and Colerain Avenue, all the way to the Indiana state line and north to south from Butler County, Ohio to the Ohio River. This also includes the western suburbs of the City of Cincinnati. Major roadways included are I-74, I-275, U.S. 27, U.S. 50, SR128 and SR264. (refer to Appendix 1: Study Area)

*N/A (Not applicable) = data response could not be made due to size of study area and lack of site-specificity.

Structures: Appendix 2: Inventory of Hamilton County Bridges

Estimated Cost: \$800,000

Funding Source(s):

- Federal
 State
 Local _____
 Private _____

Are funding splits required? Yes No Specify: _____

Anticipated quarter and Fiscal Year of project award: Third Quarter FY 2005

Project Sponsor: The Ohio, Kentucky, Indiana Council of Governments (OKI)

Is local legislation required? Yes No

Is FHWA oversight required? Yes No

Is project location on the congestion/safety list? Yes No

Problem identified by (*indicate document date*):

- District Work Plan _____
 Congestion Study _____
 Safety Study _____
 Major New _____
 MPO TIP _____
 MPO LRP: OKI 2030 Regional Transportation Plan
 Access Ohio _____
 Other: OKI FY 2006 Unified Planning Work Program

Are there any other projects in the area (ODOT, local or utility) that might conflict with the project (e.g., a local project on the proposed detour route for the ODOT project, a resurfacing project a year after a pavement marking project)? Yes No

Specify: _____

Are there growth or land use changes in the area surrounding the project that could have an impact on project scope? Yes No

Specify: _____

Are there any known public involvement issues? Yes No

Specify: _____

EXISTING INFORMATION:

Check all information that was reviewed for the Red Flag Summary. Not all information is available or necessary for every project. The scope of the Red Flag Summary should be commensurate with the nature of the proposed project.

- Legal Speed
- Design Speed
- Traffic Data:
- Opening Year ADT:
- Design Year ADT:
- Design Hourly Volume:
- Directional Distribution:
- Trucks (24 Hour B&C):

(Traffic data does not need to be certified for the Red Flag Summary.)

- Turning movement traffic counts
- Functional Classification:
 - o Interstate, freeway
 - o Arterial
 - o Collector
 - o Local
 - o Locale:
 - Rural
 - Urban

National Highway System (NHS) Routes: I-74, I-275, U.S. 27, U.S. 50, SR128 and SR264

non-NHS Routes: Examples include; Kilby Rd., Anderson Ferry Rd, Neeb Rd., North Bend Rd., Race Rd., West Fork Rd, Westwood-Northern Blvd, Ebenezer, Taylor, Warsaw, Guerley, Quebec, and Seton.

(3R) Project? Yes No

Aerial mapping

Ohio Utility Protection Service (OUPS) Markings

United States Geological Survey (USGS) topographic mapping

Federal Emergency Management Agency (FEMA) flood plain study mapping

Natural Resources Conservation Services (NRCS) mapping

County map(s)

Airport locations within 4 miles of project: Greater Cincinnati Northern Kentucky International Airport (CVG)
Cincinnati State West (Harrison)

Tax maps

- Property deeds
- Pavement marking log
- Original construction plans _____
- Existing right of way plans _____
- Bridge inspection reports
- Bridge Load Ratings
- Pile Driving Logs
- Recorded vertical clearances for overpasses and underpasses
- Old Soil borings
- Old Geologic reports
- Pavement Cores
- Dynaflect Testing
- Deck Cores
- Maintenance history
- Pavement Condition Ratings (PCR's)
- County Manager concerns
- Traffic Studies, Highway Safety Program (HSP) Studies
- Previous Maintenance of Traffic concerns on roadway
- Accident History/Accident Reports
- Past project construction diaries
- Permitted Lane Closure Map
- Property owner contacts
- National Register of Historic Places
- Other: _____

EXISTING GEOTECHNICAL INFORMATION:

Identify all geotechnical references found. It is assumed, based on the project type, that not all reference materials listed herein will be applicable for use during the Red Flag Study. This study should provide a comprehensive review of all existing information available for the project area and should be supplemented with a complete field reconnaissance.

Review of information from ODOT:

- Original construction plans including plan views, profiles, and cross-sections
- Construction diaries and inspection reports for original construction
- Compile information on changes to the plans during construction activities (e.g., slope, spring drains)
- Interview people knowledgeable with the previous projects
- Maintenance records
- Boring log on file with the Office of Geotechnical Engineering
- History and occurrence of landslides (Appendix 4)
- History and occurrence of rockfalls
- Other _____

Review of information from ODNR:

From the Division of Geological Survey

- Boring logs on file
- Measured geologic sections
- Bedrock Geologic Maps (Appendix 5)
- Bedrock Topography Maps (Appendix 6)
- Bedrock Structure Maps
- Geologic Map of Ohio (Appendix 7)
- Quaternary Geology of Ohio
- Known and Probable Karst in Ohio (Appendix 8)
- Bulletins
- Information Circulars
- Report of Investigations
- Location and information on underground mines (none exist)
- Location and characteristics of karst features (Appendix 9)
- Landslide maps (Appendix 10-13)
- Other: Appendix 14: Ohio Coal and Industrial Minerals Map _____

From the Division of Mineral Resource Management

- Applications and permits files for surface mines (coal & industrial mineral)
- Active, reclaimed or abandoned surface mines
- Abandoned Mine Land (AML) sites
- Emergency Projects
- Other _____

From the Division of Soil & Water

- Water well logs (Appendix 15)
- Soil Surveys (Appendix 16)
- Ohio Wetland Inventory Maps
- National Wetland Inventory Maps (Appendix 17)
- Presence of lake bed sediments, organic soils or peat deposits
- Other _____

Other Sources:

- Aerial photographs
- Satellite imagery
- USGS quadrangles
- USGS publications and files
- City and County Engineers
- Academia with engineering or geology programs
- USGS Open File Map Series #78-1057 "Landslides and Related Features"
- Other _____

SITE VISIT:

A site visit is required for ALL projects. The site visit shall consist of visual inspection of the entire project area including the ditch lines, cut slopes, stream banks, bridge foundations, pavement, rock/soil slopes, etc.

Date(s) of site visit: ____-____-____-____-____-____-____-____ **N/A - Study is not site specific.**

ODOT DISCIPLINE INVOLVEMENT:

List name and phone number of individual(s) representing each discipline during the site visit and preparation of the Red Flag Summary. One individual may represent multiple disciplines. Check box if individual attended the site visit.

- District Project Manager _____
- Geometrics _____
- Hydraulics _____
- Pavements _____
- Geotechnical _____
- General Roadway _____
- Structures _____
- Traffic Control _____
- Signals _____
- Maintenance of Traffic _____
- Right of Way/Real Estate _____
- Utilities _____
- Survey _____
- Environmental _____
- Highway Management _____
- Central Office Program Manager _____
- ODOT County Manager** _____
- District Production Administrator** _____
- District Planning and Programming Administrator** _____

** The County Manager, Production Administrator and Planning/Programming Administrator (or qualified representative) must attend the site visit.

EXTERNAL AGENCY INVOLVEMENT:

Indicate external agency involvement during identification of red flags. List the name and phone number of individual(s) representing each agency during the site visit. Check box if individual attended the field review.

- Federal Highway Administration (FHWA) _____
- County Engineer _____
- City Engineer _____
- Other local public agency _____
- Federal Emergency Management Agency (FEMA) _____
- U.S. Army Corps of Engineers (USACE) _____
- U.S. Coast Guard _____
- Ohio Department of Natural Resources (ODNR) _____
- Ohio Environmental Protection Agency (OEPA) _____
- Railroad/Railway Company _____
- State Historic Preservation Office (SHPO) _____
- Metropolitan Planning Organization (MPO) _____
- Utility Companies: combine maps were possible and makes best sense
 - o Butler Rural Electric Comp. _____ Cinergy/Cincinnati Gas & Electric (Power/Electric) - Appendix 18
 - o Cincinnati Bell _____ (Telephone)
 - o (numerous, refer to appendix) _____ (Water) - Appendix 19
 - o Cinergy Corp. (Cincinnati Gas & Electric) _____ (Gas) - Appendix 20 and 21
 - o City of Harrison _____ Metropolitan Sewer District (Sanitary) - Appendix 22 and 23
 - o Time Warner Cable _____ Adelphia (Cable) - Appendix 24
- Other _____

ODOT COUNTY MANAGER CONCERNS:

List any comments/requests from the ODOT County Manager.

ACCIDENT DATA:

Summarize accident history. Indicate any design features that should be revised to increase safety.

Refer to Appendix 25: Traffic Accidents 2003-2004

ENVIRONMENTAL ISSUES:

Make a preliminary determination on whether the following resources will be affected by the proposed project.

Involvement Resource Comments References*

<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Parkland, nature preserves and wildlife areas (<i>Name</i>) (Appendix 26-30)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Cemetery (<i>Name</i>) (Appendix 31)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible	Scenic River (<i>Name</i>) EPM: 104.2, 104.2.4
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Public Facilities (<i>Name</i>) (Appendix 32-36)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Threatened and Endangered Species and/or habitat (e.g., Indiana bat trees, etc.) EPM: 104.2, 104.2.6 (Appendix 37)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Existing cat tails (<i>Location</i>) (Appendix 38)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Existing wet areas (<i>Location</i>) EPM: 104.2, 104.2.3 (Appendix 39)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Streams, rivers and watercourses (<i>Use Designation</i>) EPM: 104.2, 104.2.4 (Appendix 40)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Historic Building(s) (<i>Location</i>) sites, buildings, districts EPM: 104.3 (Appendix 41-43; additional resource in hard files: <u>Historic Hamilton County, Ohio</u> , 1987 Miami Purchase Association for Historic Preservation)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible	Historic Bridge(s) (<i>Location</i>)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Farmland (<i>Location</i>) (Appendix 44)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Landfill(s) (<i>Location</i>) (Appendix 45)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Total Maximum Daily Load (TDML) Streams
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	ODOT MS4 Phase 2 Regulated Areas (Appendix 46)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Evidence of hazardous materials (<i>Location</i>) <i>Superfund Sites</i> EPM: 104.7 (Appendix 47)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Sensitive environmental justice areas (Appendix 48-52)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Federal Emergency Management Agency (FEMA) floodplains EPM: 104.2, 104.2.5 (Appendix 53)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Possible	Lake Erie Coastal Management Area EPM: 104.2
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Sole Source Aquifers (Location) (Appendix 54)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Wellhead Protection Areas (Specify) (Appendix 55)
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible	N/A Does it appear that noise abatement will be an issue for the project?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible	Other environmental issues: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible Watersheds (Appendix 56)
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Possible Industrial Land Uses (Appendix 44)

GEOMETRIC ISSUES:

Use the design speed, design functional classification and available traffic data to make a preliminary determination as to the geometric standards for the project. Compare these requirements to accident data and impacts if deviations are being considered.

Design Exception Required? N/A

Design Feature Preliminary Comments Regarding Justification References*

- | | |
|---|---|
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Lane Width (including curve widening) LDV1: 301.1.1 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Graded Shoulder Width LDV1: 301.2.3 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Bridge Width LDV1: 302.1 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Structural Capacity |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Horizontal Alignment (including Excessive Deflections, Degree of Curve, Lack of Spirals, Transition/Taper Rates and Intersection Angles) LDV1: 202, 401.2 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Vertical Alignment (including grade breaks) LDV1: 203 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Grades LDV1: 203.2 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Stopping Sight Distance LDV1: 201.2 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Pavement Cross Slopes LDV1: 301.1.5 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Superelevation (Maximum rate, transition, position) LDV1: 202.4 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Horizontal Clearance LDV1: 301.2.5 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Vertical Clearance LDV1: 302.1 |

Indicate if the following geometric issues are present or should be considered during project development. Consider work on the mainline as well as any side roads or service roads. Provide additional comments as needed.

Design Issue Comments References*

- | | |
|---|---|
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Does the existing horizontal alignment need to be modified? LDV1:202 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Does the existing vertical alignment need to be modified? LDV1:203 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Does stopping sight distance need to be increased? LDV:201.2 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Does intersection sight distance need to be increased? LDV1: 201.3 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Are there any hazards in the clear zone? <i>Specify treatment.</i> LDV1: 600.2, 601 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Does existing guardrail need to be replaced (e.g., too low, poor condition)? LDV1: 602, 603 |
| <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable | Is there sufficient area for guardrail anchor assemblies (E-98 or B-98)? LDV1: 602, 603 |

- Yes No Possible Not Applicable
 Yes No Possible Not Applicable
 Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Does the number of turn lanes appear to be adequate? LDV1: 401.7, 402

Does the number of through lanes appear to be adequate? LDV1: 401.7

Are changes to access control required? LDV1: 800, 801, 802

Are there any drive locations that will require special attention during design (e.g., very steep grades, high volume commercial drives, drives close to bridges or intersections)? LDV1: 803, 804, 805

- Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Are new mailbox turnouts required? LDV1: 803.1

Is there any evidence of accidents due to substandard vertical clearance on overpass structures?

- Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Will an interchange be added or modified? LDV1: 403, 404

Do the existing intersection radius returns need to be modified to accommodate larger truck turning movements? LDV1: 401.5

- Yes No Possible Not Applicable

Does grading need to be upgraded? To what criteria (e.g., clear zone, safety, standard)? LDV1: 307

- Yes No Possible Not Applicable

Are there any other geometric issues? *Describe*

HYDRAULIC ISSUES:

Indicate if the following drainage issues are present or should be considered during project development. Side road and service road work should be considered in this assessment. Provide additional comments as needed.

Design Issue Comments References*

Yes No Possible Not Applicable

Based on visual evidence (height of debris, erosion or other markings left from high water) and approximate drainage areas, does the existing drainage system (culverts, storm sewers and/or ditches) appear to be appropriately sized and functioning properly? *Describe deficiencies.* LDV2: 1003 - 1006

Yes No Possible Not Applicable

Is there evidence of alignment or flow velocity problems (e.g., scour, bank erosions, silting) at culvert entrances or exits? LDV2: 1107

Yes No Possible Not Applicable

Are there sinkholes or other deterioration in the pavement that would indicate separations in the existing pipes?

Yes No Possible Not Applicable

Should guardrail over culverts be eliminated with clear zone grading? LDV1: 307.2

Yes No Possible Not Applicable

Should the existing culverts be replaced? LDV2: 1105

Yes No Possible Not Applicable

Should the existing culverts be extended? LDV2: 1105

Yes No Possible Not Applicable

Will a new alignment concentrate flow (in culverts) that is currently overland flow? LDV2: 1105

Yes No Possible Not Applicable

Will the maximum height of cover (100') be exceeded for any culvert? LDV2: 1008

Yes No Possible Not Applicable

Will bankfull design be used for any culverts? LDV2: 1105.3.3

Yes No Possible Not Applicable

Could materials with long lead times (e.g., large boxes) have an impact on construction schedule?

Yes No Possible Not Applicable

Does the existing drainage system have an odor that might indicate that it includes septic connections? LDV2: LD-30 Form 1111.1

Yes No Possible Not Applicable

Is the exposed curb height in existing gutters adequate to contain flow (include height of proposed resurfacing)? LDV2: 1103

Yes No Possible Not Applicable

Do the existing inlets or catch basins need to be raised to meet proposed grade?

Yes No Possible Not Applicable

Is the project in a FEMA flood zone? LDV2: 1005 (Appendix 53)

Yes No Possible Not Applicable

Does the project affect a wetland or waterway (e.g., stream, river, jurisdictional ditch)? LDV2: 1001.2 (Appendix 17 and 40)

Yes No Possible Not Applicable

Is the existing and/or proposed channel alignment compatible with the

valleys are filled with clay and in upland areas where shale bedrock is overlain by relatively impermeable glacial till. Ground-water resources of much of the region are untapped. Water is generally hard.”

Source: <http://oh.water.usgs.gov/MIAM/abstracts/spieker2.html>

{Describe the characteristics of the soils}

The predominant soil type of the study area is Miamian Soil. The soil profile consists of the following layers; “surface: dark grayish brown silt loam, subsoil-upper: dark yellowish brown clay loam, subsoil-lower: yellowish brown clay and clay loam, and substratum: yellowish brown loam. The Miamian series consists of very deep, well drained soils that formed in a thin layer of loess and in the underlying loamy till, which is high in content of lime. The original vegetation consisted of deciduous forest species, principally white oak, maple, elm, ash and hickory. Miamian soils are the most extensive soils in Ohio. They are productive soils. Corn, soybeans, and winter wheat are the primary crops.” Source: The U.S. Department of Agriculture, National Resources Conservation Service website.

{Describe the characteristics of the rock}

During the time of the glaciers, only fine grained silt and clay (mud) reached as far west as Ohio. This fine-grained material formed sedimentary rock mudstone or the thinly, layered shale. “The supply of this eroded material was intermittent. When silt and clay were not being deposited, carbonate mud together with numerous fossils accumulated to form limestone. Periodically, large storms passed over this portion of Ohio. As they did, they stirred up the sea floor. As the sediments settled out, the large particles (fossils and other carbonate grains) settled first, followed by mud” to form conglomerate, sandstone, siltstone and claystone. Sources:

<http://www.earthsciencewebsite.8m.com/a2GOO.htm> & http://geosrv01.bgsu.edu/Yacobucci/Geol_415_515/Dayton%20trip.htm

ORIGINAL CONSTRUCTION PLAN OBSERVATIONS

{Provide a bulleted list of all pertinent features found during the plan and specification review} N/A

{Include findings from previous geotechnical reports or investigations} N/A

{If general alignment or corridor is known, develop profiles to graphically present subsurface conditions (e.g., soil, rock, groundwater). N/A

{Describe soil classifications and problem conditions} N/A

{Describe bedrock and problem conditions} N/A

DISTRICT NOTATIONS

{Provide synopsis of information compiled through the District and County Garages} N/A

{Include construction issues and maintenance problems} N/A

FIELD REVIEW

{Summarize the findings from a complete field reconnaissance} N/A

{Provide bulleted items with references to locations} N/A

{Include conditions of embankments, soil & rock cut slopes, surface water erosion, ground water seeps or springs, settlements, surface deformation, abnormal pavement cracking, etc.} N/A

SUMMARY OF GEOTECHNICAL ISSUES

Based on the information compiled during this study indicate whether or not the following geotechnical issues are present or should be further considered during project development. Provide additional comments as needed.

Design Issues Comments References*

Yes No Possible Not Applicable

Is there evidence of soil drainage problems (e.g., wet or pumping subgrade, standing water, the presence of seeps, wetlands, swamps, bogs)? SSI: 2.1, 2.2

Yes No Possible Not Applicable

Is there evidence of any embankment or foundation problems (e.g., differential settlement, sag, foundation failures, slope failures, scours, evidence of channel migrations)? SSI: 2.1, 2.2

Yes No Possible Not Applicable

Is there evidence of any landslides? SSI: 2.1, 2.2 (Appendix 4 and 10)

Yes No Possible Not Applicable

Is there evidence of unsuitable materials (e.g., presence of debris or man-made fills or waste pits containing these materials, indications from old soil borings)? SSI: 2.1, 2.2

Yes No Possible Not Applicable

Is there evidence of rock strata (e.g., presence of exposed bedrock, rock on the old borings)? SSI: 2.1

Yes No Possible Not Applicable

Is there evidence of active, reclaimed or abandoned surface mines? SSI: 2.1, 2.2, AUM

Yes No Possible Not Applicable

Is there information pertaining to the existence of underground mines? SSI: 2.1, 2.2, AUM refer to underground mine map: Appendix #

Yes No Possible Not Applicable

Are soil borings needed for pavement design, foundations (bridge, headwall, retaining wall, noise wall) or slopes? SSI: 2.1, 2.2

Yes No Possible Not Applicable

Does an undercut appear to be needed? SSI: 5.3.2.1

Yes No Possible Not Applicable

Should the Office of Geotechnical Engineering be contacted to evaluate the project site? SSI: 1.3

Yes No Possible Not Applicable

Are there any other geotechnical issues? *Specify. Provide a list of bulleted items referencing additional areas of concern or special notation.*

PAVEMENT ISSUES:

Indicate if the following pavement issues are present or should be considered during project development. Side road and service road work should be considered in this assessment. Provide additional comments as needed.

Design Issue Comments References*

Yes No Possible Not Applicable

Are pavement cores needed to determine the existing pavement buildup and/or condition?

Yes No Possible Not Applicable

Is the proposed pavement buildup known? (For pavement preservation projects, pavement treatment, including pavement type & thickness should be specified in the design scope of services)

Yes No Possible Not Applicable

Is the existing pavement concrete or asphalt?

Yes No Possible Not Applicable

Are dynaflect tests available to assess existing pavement condition?

Yes No Possible Not Applicable

Does the proposed pavement buildup need to be approved by the Pavement Selection Committee?

Yes No Possible Not Applicable

Are joint repairs needed?

Yes No Possible Not Applicable

Are pressure relief joints needed?

Yes No Possible Not Applicable

Are pavement repairs needed?

Yes No Possible Not Applicable

Does the maintenance of traffic scheme require additional permanent or temporary pavement?

Yes No Possible Not Applicable

Does curb need to be replaced due to deteriorated condition or lack of curb reveal?

Yes No Possible Not Applicable

Does sidewalk need to be replaced or installed? LDV1: 306.2

Yes No Possible Not Applicable

Are new curb ramps needed? LDV1: 306.3

Yes No Possible Not Applicable

Do truncated domes need to be installed? LDV1: 306.3.5

Yes No Possible Not Applicable

Is there any work on side roads, service roads or ramps?

Yes No Possible Not Applicable

Are there any special drive treatments or preferences (e.g., concrete for all drive aprons, curved aprons, etc.)?

Yes No Possible Not Applicable

Has the site received repeated resurfacings in recent years?

Yes No Possible Not Applicable

Does pavement deterioration appear to be caused by drainage or geotechnical problems?

Yes No Possible Not Applicable

Are there any other pavement issues? *Specify.*

STRUCTURAL ISSUES:

Indicate if the following structure issues are present or should be considered during project development. Provide additional comments as needed. Provide a separate table for each structure.

Structure:

Design Issue Comments References*

<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Can the structure be replaced with a prefabricated box culvert or 3-sided box? BDM: 201
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Does the bridge (including foundation) meet current design live loading? BDM: 301.4, 301.4.1, 301.4.2
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Was the existing structure built according to plan? BDM: 206, 401.1, 610.1
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is deck coring needed? BDM: 412
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is the deck delaminated? <i>Specify</i> . BDM: 412
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is non-destructive testing needed to determine the amount of delamination? BDM: 412
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is the bridge deck in good condition? BDM: 412
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Has a deck condition survey (Bridge Design Manual, Section 412) been performed?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Are there areas to be patched or repaired on the deck? BDM: 403.1, 404.3
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is the bridge a good candidate for an overlay? <i>Specify type of overlay if known</i> . BDM: 404.1, 404.2
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Does the bridge rail meet current standards? BDM: 209.2, 304, 410
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is a fatigue analysis required? BDM: 402.2, 402.3
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Should all fatigue prone details be retrofitted or replaced? <i>Specify</i> . BDM: 402.2, 402.3
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is the abutment (including backwall, beam seats, brestwall, wingwall, etc.) in good condition? <i>Specify location and level of deterioration</i> . BDM: 403.1
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is there any evidence of substructure movement (e.g., settlement, rotation)?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Should piers be replaced or reused? <i>Specify</i> . BDM: 303.3
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Possible <input checked="" type="checkbox"/> Not Applicable	Is there any evidence of existing beam deterioration/section loss, strands exposed, shear joints leaking or longitudinal cracks? BDM: 402.1

Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Are the bearings in good condition? BDM: 411
 Can the deck joint be eliminated? If not, specify what modifications are necessary. BDM: 205.8, 205.9, 406

Yes No Possible Not Applicable
 Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Are new approach slabs needed? BDM: 209.5
 Can hinges be removed to make the members continuous? BDM: 402.8
 Does existing vertical and horizontal clearance meet design standards? BDM: 207.1, 207.3, 209.8

Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Is the bridge on a curve, skew or superelevation transition? BDM: 207.5, 209.1
 Is there any evidence that the bridge does not meet hydraulic capacity? BDM: 202.5, 203

Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Are there existing sidewalks on or adjacent to the bridge? BDM: 209.11
 Will the structure work require any special maintenance of traffic (e.g., closing of roadway for erection of beams, maintenance of waterway, traffic, location of cut line, etc.)? *Specify*. BDM: 208, 409, 304.3.5

Yes No Possible Not Applicable

Is the structure in a Federal Emergency Management Agency (FEMA) flood plain? BDM: 203 (Appendix 53)

Yes No Possible Not Applicable
 Yes No Possible Not Applicable
 Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Is there any erosion in the existing channel? BDM: 203.3
 Is the foundation exposed due to scour? BDM: 203.3, 409.3
 Will there be more than 25' of channel relocation?

Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Are there any opportunities to construct the bridge faster (e.g., precast walls, segmental construction)?
 Is there any railroad involvement? BDM: 209.8 (Appendix 57 and 58)
 Does the bridge need to accommodate future additional roadway lanes or railroad tracks?

Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Will temporary shoring be required next to the railroad? BDM: 208.3
 Could materials with long lead times for delivery (e.g., steel beams) have an impact on the construction schedule?

Yes No Possible Not Applicable
 Yes No Possible Not Applicable

Are there any problems with existing retaining walls? BDM: 204.9
 Are there any other structures issues? *Specify*.

TRAFFIC CONTROL ISSUES:

Indicate if the following traffic control (signals, signing, pavement markings, etc.) issues are present or should be considered during project development. Provide additional comments as needed.

Design Issue Comments References*

Yes No Possible Not Applicable

Do the existing signs need to be replaced due to poor condition? TEM: 260

Yes No Possible Not Applicable

Are there any obvious deviations from requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD)?

Yes No Possible Not Applicable

Is a particular type of pavement marking desired (e.g., paint, epoxy, thermoplastic)? TEM: 320

Yes No Possible Not Applicable

Will pavement planning affect loop detectors? TEM: 450-10.7 420-5

Yes No Possible Not Applicable

Will pavement widening affect pole locations? TEM: 450-6

Yes No Possible Not Applicable

Will resurfacing effect signal height? TEM: 450-7

Yes No Possible Not Applicable

Does it appear that any traffic control items will fall outside the existing right of way limits (e.g., large signs, strain poles)?

Yes No Possible Not Applicable

Are there any special pedestrian considerations? TEM: 404

Yes No Possible Not Applicable

Are there any accidents that can be related to existing signal deficiencies (e.g., timing, lack of turn lanes)? TEM: 402-3.5

Yes No Possible Not Applicable

Do turn lane lengths appear to have sufficient storage capacity? LDV1: 401.7

Yes No Possible Not Applicable

Does the controller need to be upgraded? TEM: 460

Yes No Possible Not Applicable

Do proprietary materials need to be specified?

Yes No Possible Not Applicable

Should signs or signal installations be supplemented with lighting? TEM: 408

Yes No Possible Not Applicable

Are any TODS signs present? TEM: 207-3

Yes No Possible Not Applicable

Could material with long lead times for delivery have an impact on the construction schedule (e.g., strain poles)?

Yes No Possible Not Applicable

If traffic control at an intersection is being changed from stop control to signalization, does the stop condition road need to be upgraded to accommodate faster traffic?

Yes No Possible Not Applicable

Are there any other traffic control issues? *Specify.*

MAINTENANCE OF TRAFFIC ISSUES:

Indicate if the following maintenance of traffic issues are present or should be considered during project development. Provide additional comments as needed.

Design Issue Comments References*

Yes No Possible Not Applicable

Can traffic be detoured? TEM: 602-6

Yes No Possible Not Applicable

Is the local alternate detour route in good condition? Are there any load limits or bridge width restrictions?

Yes No Possible Not Applicable

Will the detour route have a detrimental impact on emergency vehicles, school buses or other sensitive traffic?

Yes No Possible Not Applicable

Are there any load limits on the proposed detour route?

Yes No Possible Not Applicable

Does the project fall within the permitted lane closure map? TEM: 630-4

Yes No Possible Not Applicable

Is existing bridge width sufficient to maintain traffic? TEM: 640-2

Yes No Possible Not Applicable

Will temporary pavement be required? TEM: 640-2, 640-11

Yes No Possible Not Applicable

Should temporary pavement be retained after project completion? TEM: 640-11

Yes No Possible Not Applicable

Will the speed limit be lowered by more than 10mph during construction? TEM: 640-18

Yes No Possible Not Applicable

Is the existing shoulder in good enough condition to support traffic during construction? TEM: 640-5

Yes No Possible Not Applicable

Does pedestrian traffic need to be maintained? TEM: 64-25

Yes No Possible Not Applicable

Will additional width be required on culverts or bridges to maintain traffic? TEM: 640-2

Yes No Possible Not Applicable

Will a temporary structure/runaround be required? TEM: 640-11

Yes No Possible Not Applicable

Will a cross over be utilized? TEM: 640-11

Yes No Possible Not Applicable

Will the road need to be closed for short durations (e.g., 15 minutes for beam erection)? TEM: 640-8

Yes No Possible Not Applicable

Can drive access be maintained at all times? TEM: 640-10

Yes No Possible Not Applicable

Can trucks make turning movements during construction?

Yes No Possible Not Applicable

Will portable concrete barrier wall obstruct stopping sight distance? LDV1-201.2

Yes No Possible Not Applicable

Will additional signal heads be needed for drives and/or side roads? TEM: 605-13

Yes No Possible Not Applicable

Are there any issues regarding access to the work site? TEM: 640-9

Yes No Possible Not Applicable

Are there any issues regarding construction timeframes (e.g., time of day, time limits)? TEM: 606-3 640-14

Yes No Possible Not Applicable

Have innovative contracting ideas been considered? *Specify.*

Yes No Possible Not Applicable

Are there specific requirements for maintaining railroad traffic? TEM: 606-19

Yes No Possible Not Applicable

Does it appear that the maintenance of traffic will require additional right of way?

Yes No Possible Not Applicable

Are there any other maintenance of traffic issues? *Specify.*

RIGHT OF WAY/SURVEY ISSUES:

Indicate if right of way or survey issues are present or should be considered during project development. Provide additional comments as needed.

Design Issue Comments References*

Yes No Possible Not Applicable

Will there be any work beyond the existing right of way limits?

Yes No Possible Not Applicable

Will major real estate relocation acquisition be involved?

Yes No Possible Not Applicable

Will relocation of residences be involved?

Yes No Possible Not Applicable

Will relocation of businesses be involved?

Yes No Possible Not Applicable

Does access control need to be revised?

Yes No Possible Not Applicable

Are there any obvious encroachments?

Yes No Possible Not Applicable

Can the number of involved property owners be determined? If so, how many?

Yes No Possible Not Applicable

Will temporary parcels be needed (e.g., for drive work)?

Yes No Possible Not Applicable

Will right of way need to be acquired for an agency other than ODOT (e.g., county, city)? *Specify.*

Yes No Possible Not Applicable

Will additional right of way be needed for utility relocations?

Yes No Possible Not Applicable

Will right of way need to be acquired for storm sewer outfalls?

Yes No Possible Not Applicable

Do property owners need to be contacted for the locations of underground items such as leach fields, septic systems or field tiles that might be effected by the proposed take?

Yes No Possible Not Applicable

Are there any mineral rights considerations?

Yes No Possible Not Applicable

Are there any specific property owner concerns?

Yes No Possible Not Applicable

Will right of way acquisition from a railroad/railway be involved? (Appendix 57)

Yes No Possible Not Applicable

Can work agreements be used?

Yes No Possible Not Applicable

Does the centerline of construction match the centerline of right of way?

Yes No Possible Not Applicable

Will right of way be acquired for wetland or stream mitigation?

Yes No Possible Not Applicable

Are there any other right of way or survey issues? *Specify.*

UTILITY ISSUES:

Indicate if the following utility issues are present or should be considered during project development. Provide additional comments as needed.

Design Issue Comments References*

Yes No Possible Not Applicable

Yes No Possible Not Applicable

Yes No Possible Not Applicable

Yes No Possible Not Applicable

Yes No Possible Not Applicable

Yes No Possible Not Applicable

Yes No Possible Not Applicable

Yes No Possible Not Applicable

Yes No Possible Not Applicable

Do existing utilities need to be relocated? (Appendix 18-24)

Can utility conflicts be minimized (e.g., by careful placement of storm sewer and underdrains)?

Would the project benefit from subsurface utility engineering (SUE)?

Are there existing utilities on an existing structure that need to be relocated?

Are there any specific utility requirements or concerns? *Specify.*

Are there facilities that require a large lead time to relocate?

Is additional right of way needed to accommodate utility relocations?

Are there water or sanitary lines that will be relocated as part of the ODOT contract? (Appendix 19,22 and 23)

Are there any other utility issues? *Specify.*

PERMIT ISSUES:

Indicate if the following permit issues are present or should be considered during project development. Provide additional comments as needed.

Design Issue Comments References*

Yes No Possible Not Applicable

Will an individual Corps of Engineers/Environmental Protection Agency 404/401 permit be required?

Yes No Possible Not Applicable

Does it appear that the project can be constructed under a nationwide 404/401 permit? If so, which permit and what specific requirements apply?

Yes No Possible Not Applicable

Will a Coast Guard permit be required?

Yes No Possible Not Applicable

Is review by a local public agency or project sponsor required? *Specify.*

Yes No Possible Not Applicable

Is Airway/Highway clearance analysis required?

Yes No Possible Not Applicable

Is Federal Emergency Management Agency approval required? (Appendix 53)

Yes No Possible Not Applicable

Is railroad/railway coordination required? (Appendix 57 and 58)

Yes No Possible Not Applicable

Is State Historic Preservation Office (SHPO) coordination for work involving historic bridges or historic properties required? (Appendix 41-43)

Yes No Possible Not Applicable

Is coordination with ODNR for work involving State Scenic Rivers, State

Wildlife Areas or State Recreational Areas required? (Appendix 26-30 and 37-38)

Yes No Possible Not Applicable

Is coordination with any other agency required?

(See Location and Design Manual, Figures 1402-2 through Figure 1402-7.)

MISCELLANEOUS ISSUES:

Indicate if the following issues are present or should be considered during project development. Provide additional comments as needed.

Design Issue Comments References*

Yes No Possible Not Applicable

Will a value engineering study be required due to project cost (total cost greater than \$20 million) or project complexity?

Yes No Possible Not Applicable

Will warranties be used?

Yes No Possible Not Applicable

Are there aesthetic concerns? *Specify.*

Yes No Possible Not Applicable

Are there any concerns relating to noise walls?

Yes No Possible Not Applicable

Are there areas available within the existing right of way for portable plans or waste and borrow sites?

Yes No Possible Not Applicable

Are there specific concerns related to pedestrian access? LDV1: 306

Yes No Possible Not Applicable

Any concerns related to landscaping?

Yes No Possible Not Applicable

Are there any concerns related to existing or proposed lighting (e.g., light trespass, river navigation, airway clearance)?

Yes No Possible Not Applicable

Are there any other concerns? *Specify*

RED FLAG MAPPING:

Is a map showing locations of red flag areas attached? Yes No

(A map showing locations of red flag areas is mandatory for Major Projects.)

Index (maps and other references showing locations of red flag areas)

Appendix 1: Study Area

Appendix 2: Inventory of Hamilton County Bridges

Appendix 3: Purpose and Needs Statement

Appendix 4: History and occurrence of Landslides

Appendix 5: Bedrock Geology

Appendix 6: Shaded Bedrock-Topography Map of Ohio

Appendix 7: Geologic Map and Cross Section of Ohio

Appendix 8: Ohio Karst Areas

Appendix 9: Location and Characteristics of Karst Features

Appendix 10: Landslide Locations

Appendix 11: Landslide Susceptibility Map

Appendix 12: Landslide Susceptibility Map

Appendix 13: Landslide Potential Hamilton County

Appendix 14: 2003 Ohio Industrial Minerals

Appendix 15: Water Well Logs

Appendix 16: USDA Soil Survey

Appendix 17: Wetlands

Appendix 18: Electric Service Providers

- Appendix 19: Water Service
- Appendix 20: Natural Gas Service
- Appendix 21: Oil and Gas Pipelines in Ohio
- Appendix 22: Sewer Service
- Appendix 23: Wastewater Treatment Facilities
- Appendix 24: Cable Utilities
- Appendix 25: Traffic Accidents 2003-2004
- Appendix 26: Mini Parks
- Appendix 27: Neighborhood Parks
- Appendix 28: Recreation
- Appendix 29: Nature Preserves
- Appendix 30: Regional and Community Parks
- Appendix 31: Cemeteries
- Appendix 32: Hospitals
- Appendix 33: Community Centers
- Appendix 34: Elementary Schools
- Appendix 35: Middle, High, & College Schools
- Appendix 36: Libraries
- Appendix 37: Threatened, Endangered and Candidate Species
- Appendix 38: Existing Cat Tails
- Appendix 39: Ground-Water Resources
- Appendix 40: Streams
- Appendix 41: Historic Buildings
- Appendix 42: Historic Districts
- Appendix 43: Historic Sites
- Appendix 44: Existing Land Use
- Appendix 45: Landfills
- Appendix 46: ODOT MS4 Phase 2 Regulated Areas
- Appendix 47: Superfund Sites
- Appendix 48: Elderly Population
- Appendix 49: Households with No Cars
- Appendix 50: Minority Population
- Appendix 51: Population with a Disability
- Appendix 52: Population in Poverty
- Appendix 53: 100 Year Flood Plain
- Appendix 54: Sole Source Aquifers
- Appendix 55: Water Wells
- Appendix 56: Watersheds
- Appendix 57: Railroads and Railroad Yards
- Appendix 58: Active Rail Companies

GEOTECHNICAL DELIVERABLES:

Include copies of plan views, geologic cross-sections, existing boring logs, and soil and rock testing data. This information should be augmented with data from ODOT's archived files of previous projects in the area. Additional information on soil survey data, glacial deposits, bedrock topography, bedrock structure, and aquifer mapping, etc. should be compiled as a GIS workspace. Both digital ortho-quarter quadrangles and U.S.G.S. quadrangles should be available for base mapping. Copies of the reference maps and ArcView files should be provided. (This information is mandatory for Major Projects)

SCOPE, SCHEDULE AND BUDGET CONSIDERATIONS:

Based on the responses to the red flag questions, do any of the following need to be modified?

Issue Comments References*

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Possible	<input checked="" type="checkbox"/> Not Applicable	Conceptual scope?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Possible	<input checked="" type="checkbox"/> Not Applicable	Work limits? LDV3-1303.7
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Possible	<input checked="" type="checkbox"/> Not Applicable	Probable environmental document type?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Possible	<input checked="" type="checkbox"/> Not Applicable	Major/Minor/Minimal classification?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Possible	<input checked="" type="checkbox"/> Not Applicable	Schedule?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Possible	<input checked="" type="checkbox"/> Not Applicable	Budget?

*Abbreviations: AUM = Manual for Abandoned Underground Mine Inventory and Risk Assessment

BDM = Bridge Design Manual

LDV1 = Location and Design Manual, Volume 1

LDV2 = Location and Design Manual, Volume 2

LDV3 = Location and Design Manual, Volume 3

SSI = Specifications for Subsurface Investigations

TEM = Traffic Engineering Manual

EPM = Environmental Process Manual