APPENDIX E
Collated Canadian Survey Results

Collated Canadian Survey Results

for

NCHRP PROJECT 20-05, Synthesis Topic 40-04:
Utility Location & Highway Design

Friday, January 15, 2010
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Executive Summary

This report contains a detailed statistical analysis of the results to the survey titled *Canadian Version NCHRP PROJECT 20-05, Synthesis Topic 40-04: Utility Location & Highway Design*. The results analysis includes answers from all respondents who took the survey in the 37 day period from Friday, February 06, 2009 to Sunday, March 15, 2009. 8 completed responses were received to the survey during this time.
Questions 1-5 were specific to individual state DOTs and are not part of this collated report.
6) Which statement best describes your DOT’s philosophy on utilities? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
7) Is your DOT philosophy to weigh the cost to both the utility ratepayer and the taxpayer when considering whether to design around or move utilities? (Mark all answers that apply.)

The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.

5.2) Question # 7(This question is to be filled out only by the person responsible to collate answer)
8) Are there any state statutes or policies that affect your decision to relocate utilities versus design around utility conflicts? If yes, please give a brief description in the "Other" section. The official DOT response was:

Other Responses:

<table>
<thead>
<tr>
<th>Public Highways Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility permits issued by the Ministry may influence a design decision.</td>
</tr>
<tr>
<td>Tri-agency agreement, HUP agreements</td>
</tr>
</tbody>
</table>

However, within the DOT there was the following diversity of opinion to the official response.
9) Are there any DOT policies or guidance documents that negatively affect your ability to consider whether to relocate utilities or design around them? If "yes" please give a brief description in the "Other" section. The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
10) Where does your “Utility Section” fit within the overall DOT organization? (Mark all answers that apply.) The official DOT response was:

Other Responses:

<table>
<thead>
<tr>
<th>Construction Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadside Managers report to Design &amp; Ops</td>
</tr>
<tr>
<td>Don't have dedicated utility staff</td>
</tr>
<tr>
<td>We don't have a Utility Section.</td>
</tr>
<tr>
<td>No defined utility section</td>
</tr>
</tbody>
</table>

- a. Design Section: 5
- b. Right of Way Section: 4
- c. Maintenance/Operations Section: 4
- d. Survey Section: 3
- e. It is different: 0
- Other: 4
However, within the DOT there was the following diversity of opinion to the official response.

5.5) Question #10 [This question is &nbsp; to be filled out only by the person responsible to collate answer]
11) Is a member of the “Utility Section” designated to be part of the project design team? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
12) If Yes, at what point in the project development process do they have the first opportunity to get involved? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement
13) Do you have designers on most projects that are trained in utility issues? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25.0%</td>
</tr>
<tr>
<td>No</td>
<td>62.5%</td>
</tr>
<tr>
<td>Not Sure</td>
<td>12.5%</td>
</tr>
</tbody>
</table>
14) If Yes, do they have training in the following areas? (Mark all answers that apply.) The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.

5.3) Question H 14 [This question is &nbsp; to be filled out only by the person responsible to collate answers]

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement
15) How do you get utility information on design plans?  
The official DOT response was:

**COMMENT RESPONSES**

Do not have a "one-call marker" program.  
Mtgs held with Utilities to discuss work

**COMPLETE QUESTIONS**

<table>
<thead>
<tr>
<th>Question</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department personnel obtain and use utility records</td>
<td>62.5 %</td>
</tr>
<tr>
<td>Utility Companies get set of design plans and draw utilities on it</td>
<td>37.5 %</td>
</tr>
<tr>
<td>Department personnel survey “construction one-call marks”</td>
<td>25.0 %</td>
</tr>
<tr>
<td>Consultant surveys “construction one-call marks”</td>
<td>12.5 %</td>
</tr>
<tr>
<td>Department personnel survey “design one-call marks”</td>
<td>25.0 %</td>
</tr>
<tr>
<td>Consultant surveys “design one-call marks”</td>
<td>12.5 %</td>
</tr>
<tr>
<td>Hire subsurface utility engineering firm</td>
<td>25.0 %</td>
</tr>
<tr>
<td>Not Sure</td>
<td>0.0 %</td>
</tr>
</tbody>
</table>
However, within the DOT there was the following diversity of opinion to the official response.

5.10) Question # 15 (This question is to be filled out only by the person responsible to collect answer)

Here is the detailed response for each question asked in # 15.

15.1) Department personnel obtain and use utility records (How do you get utility information on design plans?)
15.1) Department personnel obtain and use utility records (How do you get utility information on design plans?)

- Never: 25.0%
- Rarely: 12.5%
- Some of the time: 25.0%
- About half of the time: 0.0%
- Most of the time: 0.0%
- All the time: 25.0%
15.2) Utility Companies get set of design plans and draw utilities on it (How do you get utility information on design plans?)

15.2) Utility Companies get set of design plans and draw utilities on it (How do you get utility information on design plans?)

- Never: 37.5%
- Rarely: 12.5%
- Some of the time: 12.5%
- About half of the time: 0.0%
- Most of the time: 25.0%
- All the time: 0.0%
15.3) Department personnel survey “construction one-call marks” (How do you get utility information on design plans?)

The bar chart shows the distribution of responses to the question: "How often do you get utility information on design plans?" The categories and their corresponding numbers are:
- Never: 25.0% (2 respondents)
- Rarely: 25.0% (2 respondents)
- Some of the time: 12.5% (1 respondent)
- About half of the time: 0.0% (0 respondents)
- Most of the time: 12.5% (1 respondent)
- All the time: 12.5% (1 respondent)
15.4) Consultant surveys “construction one-call marks” (How do you get utility information on design plans?)

15.4) Consultant surveys “construction one-call marks” (How do you get utility information on design plans?)

- Never: 37.5%
- Rarely: 12.5%
- Some of the time: 0.0%
- About half of the time: 0.0%
- Most of the time: 25.0%
- All the time: 0.0%
15.5) Department personnel survey “design one-call marks” (How do you get utility information on design plans?)
15.6) Consultant surveys “design one-call marks” (How do you get utility information on design plans?)
15.7) Hire subsurface utility engineering firm (How do you get utility information on design plans?)
15.8) Not Sure (How do you get utility information on design plans?)
16) Do you have a formal mechanism to decide on which of the above methods you will use for a specific project? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.

5.11 Question 16: This question is to be filled out only by the person responsible to calulate answer

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement
17) Do you consider the impacts of overhead utilities at a different time in the project development process than you do the underground utilities? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
18) Do consultant-designed projects follow the same procedures for obtaining utility information that the department does? The official DOT response was:

**RED:** They must follow the same procedures
**GREEN:** They have flexibility to obtain utility information any way they choose
**YELLOW:** They suggest a scope and then must receive permission from the Department for that scope

However, within the DOT there was the following diversity of opinion to the official response.

5.13) Question #18: This question is to be filled out only by the person responsible to collate survey results.

**RED:** Survey takers are in complete agreement
**GREEN:** Survey takers are mostly in agreement
**YELLOW:** Survey takers disagree somewhat
**BLUE:** Survey takers are in complete disagreement
19) Does your Contract Management policy enforce Errors & Omissions for utility data depicted on plans by consultants? The official DOT response was:

**Diagram:**

- **RED:** We are aggressive in this enforcement
- **GREEN:** We don't hold our consultants responsible for missing or incorrect utility information
- **YELLOW:** We place the final burden for utility information being correct on the utility owners
- **BLUE:** Only if we hire a SUE firm to collect the data
- **WHITE:** We find it too difficult to enforce Errors & Omissions for utility mapping unless there is a catastrophe
- **GREY:** Other (please specify)

**Other Responses:**

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>No policy</td>
</tr>
<tr>
<td>Errors and omissions for utility data are not typically catastrophic and are of low significance.</td>
</tr>
</tbody>
</table>
However, within the DOT there was the following diversity of opinion to the official response.

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement

5.14) Question # 19: This question is to be filled out only by the person responsible to collate answers.
20) Which of the following elements are routinely considered as a valid reason for a design change as a result of a utility conflict? (Mark all answers that apply.) The official DOT response was:

Other Responses:

Excessive cost or technical difficulty in relocation
However, within the DOT there was the following diversity of opinion to the official response.

5.15 Question #20 [This question is to be filled out only by the person responsible to collate answers]

- RED: Survey takers are in complete agreement
- GREEN: Survey takers are mostly in agreement
- YELLOW: Survey takers disagree somewhat
- BLUE: Survey takers are in complete disagreement

Survey takers completely agree on: 2
Survey takers are mostly in agreement: 3
Survey takers disagree somewhat: 1
Survey takers are in complete disagreement: 0
21) If such a design change is suggested, who does the suggesting? (Mark all answers that apply.) The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
22) Is there a formal approval process required to make a design change in order to accommodate a utility? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
23) If Yes, is there a threshold for this approval based on cost, time, or other factors? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
24) Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design? The official DOT response was:

Comment Responses:

Functional Planning reviews utility issu
However, within the DOT there was the following diversity of opinion to the official response.

5.19) Question #24 (This question is to be filled out only by the person responsible to collate answers.

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement

Here is the detailed response for each question asked in # 24.

24.1) Transmission Gas Pipeline (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
24.2) Distribution natural gas (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
24.3) Water lines (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.3) Water lines (Would you consider a design change in order to accommodate the following utilities?)

- **Always**: 2
- **Most of the Time**: 3
- **Some of the Time**: 2
- **Only in unusual circumstances**: 1
- **Never**: 0
24.4) Aerial transmission power lines (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.4) Aerial transmission power lines (Would you consider a design change in order to accommodate the
24.5) Aerial distribution power lines (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
24.6) Aerial communication lines (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
24.7) Buried transmission electric facilities (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
24.8) encased distribution electric lines (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

62.5% Most of the Time
12.5% Some of the Time
25.0% Never
24.9) direct-buried distribution electric lines (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

- Always: 1
- Most of the Time: 5
- Some of the Time: 2
- Only in unusual circumstances: 0
- Never: 0
24.10) Encased communication facilities (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

- Always: 1
- Most of the Time: 5
- Some of the Time: 2
- Only in unusual circumstances: 0
- Never: 0

62.5%
12.5%
25.0%
24.11) direct-buried communication facilities (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>1</td>
</tr>
<tr>
<td>Most of the Time</td>
<td>5</td>
</tr>
<tr>
<td>Some of the Time</td>
<td>2</td>
</tr>
<tr>
<td>Only in unusual circumstances</td>
<td>0</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
</tr>
</tbody>
</table>
24.12) substations (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

![Pie chart showing responses]

- Always: 4
- Most of the Time: 3
- Some of the Time: 1
- Only in unusual circumstances: 0
- Never: 0

50.0%
12.5%
37.5%
0.0%
24.13) buried environmentally-controlled vaults (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
24.14) gravity sanitary systems (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.14) gravity sanitary systems (Would you consider a design change in order to accommodate the follow

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>62.5%</td>
</tr>
<tr>
<td>Most of the Time</td>
<td>12.5%</td>
</tr>
<tr>
<td>Some of the Time</td>
<td>0.0%</td>
</tr>
<tr>
<td>Only in unusual circumstances</td>
<td>25.0%</td>
</tr>
<tr>
<td>Never</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
24.15) pressure sanitary systems (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
24.16) storm drainage (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

- Always: 1
- Most of the Time: 4
- Some of the Time: 3
- Only in unusual circumstances: 0
- Never: 0
24.17) large commercial services (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
24.18) residential services (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>1</td>
</tr>
<tr>
<td>Most of the Time</td>
<td>5</td>
</tr>
<tr>
<td>Some of the Time</td>
<td>2</td>
</tr>
<tr>
<td>Only in unusual circumstances</td>
<td>0</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
</tr>
</tbody>
</table>
24.19) Steam: Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>1</td>
</tr>
<tr>
<td>Most of the Time</td>
<td>5</td>
</tr>
<tr>
<td>Some of the Time</td>
<td>2</td>
</tr>
<tr>
<td>Only in unusual circumstances</td>
<td>0</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
</tr>
</tbody>
</table>
24.20) Petroleum Pipelines (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)
25) Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design? The official DOT response was:
However, within the DOT there was the following diversity of opinion to the official response.
Here is the detailed response for each question asked in # 25.

25.1) Transmission gas pipeline (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing responses to 25.1)](chart.png)
25.2) Distribution natural gas (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

Always: 0
Most of the Time: 2
Some of the Time: 3
Only in unusual circumstances: 3
Never: 0
25.3) Water lines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing responses to the question about accommodating water lines. The chart indicates that 50.0% of respondents would consider a design change only in unusual circumstances, 25.0% most of the time, 12.5% some of the time, and 12.5% always. There are no respondents who would never consider a design change.]
25.4) Aerial transmission power lines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Graph showing the percentage of respondents for different scenarios regarding accommodating aerial transmission power lines.]

- **Never**: 0.0%
- **Only in unusual circumstances**: 12.5%
- **Some of the Time**: 37.5%
- **Most of the Time**: 50.0%
- **Always**: 0.0%
25.5) Aerial distribution power lines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing responses to the question about accommodating aerial distribution power lines. The chart indicates the following percentages:
- Never: 0.0%
- Only in unusual circumstances: 37.5%
- Some of the Time: 37.5%
- Most of the Time: 25.0%
- Always: 0.0%]
25.6) Aerial communication lines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing responses to the question about aerial communication lines.]
25.7) Buried transmission electric facilities (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing responses to the question](chart.png)
25.8) Encased distribution electric lines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)
25.9) Direct-buried distribution electric lines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)
25.10) Encased communication lines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing responses to the question about encased communication lines.]

- **Never**: 0.0%
- **Only in unusual circumstances**: 37.5%
- **Some of the Time**: 37.5%
- **Most of the Time**: 25.0%
- **Always**: 0.0%
25.11) Direct-buried communication lines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)
25.12) substations (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)
25.13) Buried environmentally controlled vaults (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>1</td>
</tr>
<tr>
<td>Most of the Time</td>
<td>2</td>
</tr>
<tr>
<td>Some of the Time</td>
<td>2</td>
</tr>
<tr>
<td>Only in unusual circumstances</td>
<td>3</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
</tr>
</tbody>
</table>
25.14) Gravity sanitary systems (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing responses to the question about accommodating utilities in conflict with highway design. The chart indicates the following responses: 0.0% for Never, 62.5% for Only in unusual circumstances, 25.0% for Some of the Time, 12.5% for Most of the Time, and 0.0% for Always. The legend explains the colors used in the chart: Red for Always, Green for Most of the Time, Yellow for Some of the Time, Blue for Only in unusual circumstances, and Grey for Never.]
25.15) Pressure sanitary systems

(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)
25.16) Storm drainage (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing responses to storm drainage questions.

- Never: 0%
- Only in unusual circumstances: 37.5%
- Some of the Time: 37.5%
- Most of the Time: 25.0%
- Always: 0%]
25.17) Large commercial services (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar Chart]

- Never: 0.0%
- Only in unusual circumstances: 12.5%
- Some of the Time: 50.0%
- Most of the Time: 37.5%
- Always: 0.0%
25.18) Residential services (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)
25.19) Steam (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

![Bar chart showing the percentage of respondents who would consider a design change based on how often they would accommodate certain utilities.](image-url)
25.20) Petroleum pipelines (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)
26) When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement
Here is the detailed response for each question asked in # 26.

26.1) 0-10% design (When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

![Bar chart showing response distribution for 26.1) 0-10% design]
26.2) 10-30% design (When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)
26.3) 30-70% design (When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

![Bar chart showing frequency of excavating test holes on existing utilities.](chart.png)

- **Almost always**: 0.0%
- **Most of the time**: 0.0%
- **Sometimes**: 12.5%
- **Rarely**: 12.5%
- **Never**: 50.0%

Legend:
- Red: Never
- Green: Rarely
- Yellow: Sometimes
- Blue: Most of the time
- White: Almost always
26.4) 70-90% design (When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)
26.5) 90-100% design (When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

![Bar chart showing responses to the question about when test holes are excavated for existing utilities. The chart indicates that the majority of respondents never excavate test holes.](chart.png)

- Never: 50.0%
- Rarely: 25.0%
- Almost always: 0%
- Most of the time: 0%
- Sometimes: 0%

Legend:
- Red: Never
- Green: Rarely
- Yellow: Sometimes
- Blue: Most of the time
- Grey: Almost always
26.6) During Construction (When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)
27) We routinely use the following guidance documents for design as it relates to utilities (Mark all answers that apply.)

Other Responses
Alberta Transportation Engineering Consultant

- FHWA - “Avoiding Utility Relocations”
- CI/ASCE 38-02 - “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data”
- AASHTO - “A Policy on Geometric Design of Highways and Streets”
- FHWA - “Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects”
- AASHTO Strategic Plan Strategy 4-4: “Right of Way and Utilities Guidelines and Best Practices”
- State One-Call Statute “Design Ticket”
- AASHTO - “A Policy on the Accommodation of Utilities Within Freeway Right-of-Way”
- FHWA - “Program Guide: Utility Relocation and Accommodation on Federal-Aid Highway Projects”
- State Utility Accommodation Rules
- Other (please specify)
However, within the DOT there was the following diversity of opinion to the official response.

5.22) Question # 27 (This question is to be filled out only by the person responsible to collect answer)

RED: Survey takers completely agree on ... 5
GREEN: Survey takers are mostly in agreement ... 1
YELLOW: Survey takers disagree somewhat on ... 0
BLUE: Survey takers are in complete disagreement ... 0

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement
28) We outsource the following functions. The official DOT response was:

Comment Responses:

Utility companies provide cost estimate to relocate infrastructure by their forces. If a Consultant is doing the design - they would be responsible for all of the above.
However, within the DOT there was the following diversity of opinion to the official response.

5.23) Question # 28(This question is to be filled out only by the person responsible to collate answ

RED: Survey takers are in complete agreement
GREEN: Survey takers are mostly in agreement
YELLOW: Survey takers disagree somewhat
BLUE: Survey takers are in complete disagreement
Here is the detailed response for each question asked in # 28.

28.1) Depicting aerial utilities on plans (We outsource the following functions)

![Bar chart showing the percentage of responses for depicting aerial utilities on plans.

- Never: 0%
- Rarely: 3%
- Sometimes, on select projects: 37.5%
- A majority of the time: 12.5%
- Almost always: 12.5%]
28.2) Depicting subsurface utilities on plans (We outsource the following functions)
28.3) Utility Conflict identification (We outsource the following functions)

- Almost always: 12.5%
- A majority of the time: 25.0%
- Sometimes, on select projects: 25.0%
- Rarely: 25.0%
- Never: 12.5%

- Never: 1
- Rarely: 2
- Sometimes, on select projects: 2
- A majority of the time: 2
- Almost always: 1
28.4) Utility conflict resolution (We outsource the following functions)

- Never: 2
- Rarely: 3
- Sometimes, on select projects: 1
- A majority of the time: 1
- Almost always: 1
28.5) utility relocation cost estimates (We outsource the following functions)

- Never: 0
- Rarely: 4
- Sometimes, on select projects: 2
- A majority of the time: 0
- Almost always: 2

Almost always: 25.0%
A majority of the time: 0.0%
Sometimes, on select projects: 25.0%
Rarely: 50.0%
Never: 0.0%
28.6) Review of plans & estimates (We outsource the following functions)

![Bar chart showing frequency of review of plans & estimates]

- Never: 0
- Rarely: 5
- Sometimes, on select projects: 1
- A majority of the time: 1
- Almost always: 1
28.7) drafting of special provisions (We outsource the following functions)
28.8) utility relocation design (We outsource the following functions)
28.9) utility construction inspection (We outsource the following functions)

- Never: 2
- Rarely: 3
- Sometimes, on select projects: 0
- A majority of the time: 0
- Almost always: 3

Almost always: 37.5%
A majority of the time: 0.0%
Sometimes, on select projects: 0.0%
Rarely: 37.5%
Never: 25.0%
29) We estimate we (the DOT) spend approximately the following amounts per year. The official DOT response was:

- Getting subsurface utility information depicted on design plans in-house
- Getting subsurface utility information depicted on design plans by consultant designers
- For a “formal” SUE utility mapping program
- Educating our designers on utility issues
- On utility relocations that are state cost responsibility
- On utility coordination functions
- On utility change orders during construction
- On utility claims during or post construction
However, within the DOT there was the following diversity of opinion to the official response.

5.24) Question #29 (This question is to be filled out only by the person responsible to collate answers)

Here is the detailed response for each question asked in #29.

29.1) Getting subsurface utility information depicted on design plans in-house (We estimate we (the DOT) spend approximately the following amounts per year)
29.2) getting subsurface utility information depicted on design plans by consultant designers (We estimate we (the DOT) spend approximately the following amounts per year)
29.3) for a "formal" SUE utility mapping program (We estimate we (the DOT) spend approximately the following amounts per year)
29.4) Educating our designers on utility issues (We estimate we (the DOT) spend approximately the following amounts per year)
29.5) on utility relocations that are state cost responsibility (We estimate we (the DOT) spend approximately the following amounts per year)
29.6) on utility coordination functions (We estimate we (the DOT) spend approximately the following amounts per year)
29.7) on utility change orders during construction (We estimate we (the DOT) spend approximately the following amounts per year)
29.8) on utility claims during or post construction (We estimate we (the DOT) spend approximately the following amounts per year)
30) Do you have any case studies that evaluate the costs of designing a project around existing utilities versus relocating them? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
31) Do you have a database that includes project information on utility relocation costs? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
32) If Yes, does this database include both costs to the utility and costs to the state? The official DOT response was:

However, within the DOT there was the following diversity of opinion to the official response.
33) Do you have additional information not covered in this questionnaire that is pertinent to the issue of whether it is better to design around utilities or have them relocate?

Other Responses:

Our topography and low population density does not typically lend to significant utility conflicts.
34) Do you have additional information that could benefit other DOTs on your DOT's process to decide whether to design around a utility or relocate it?

Other Responses: