

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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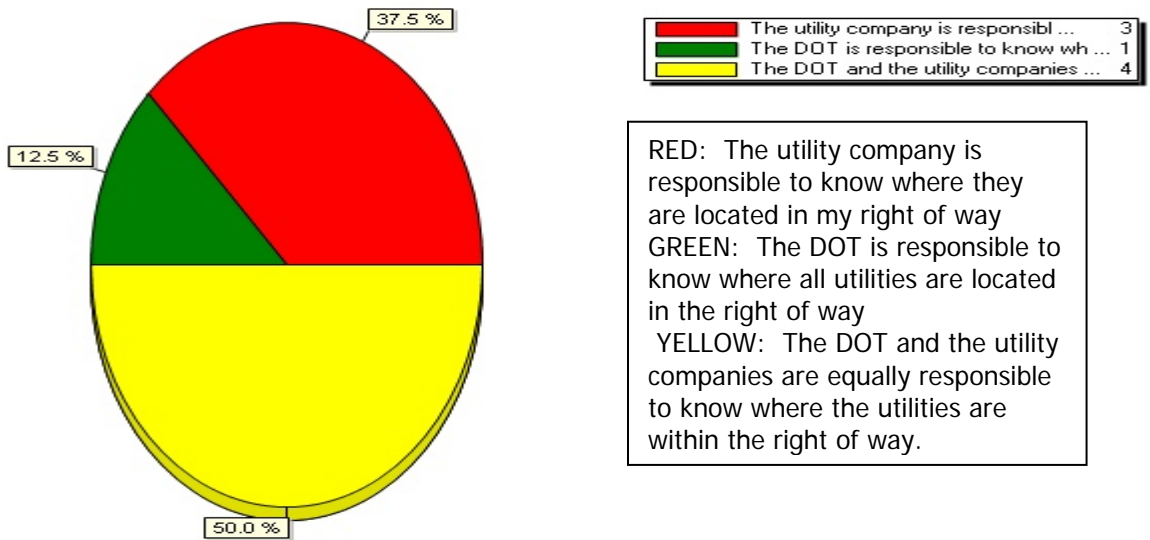
Executive Summary

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

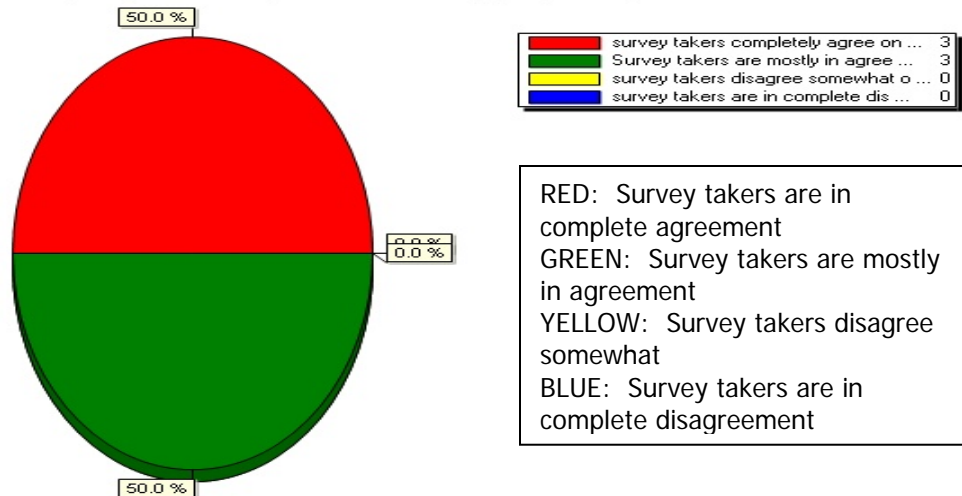
6) Which statement best describes your DOT's philosophy on utilities?
The official DOT response was:

6) Which statement best describes your DOT's philosophy on utilities



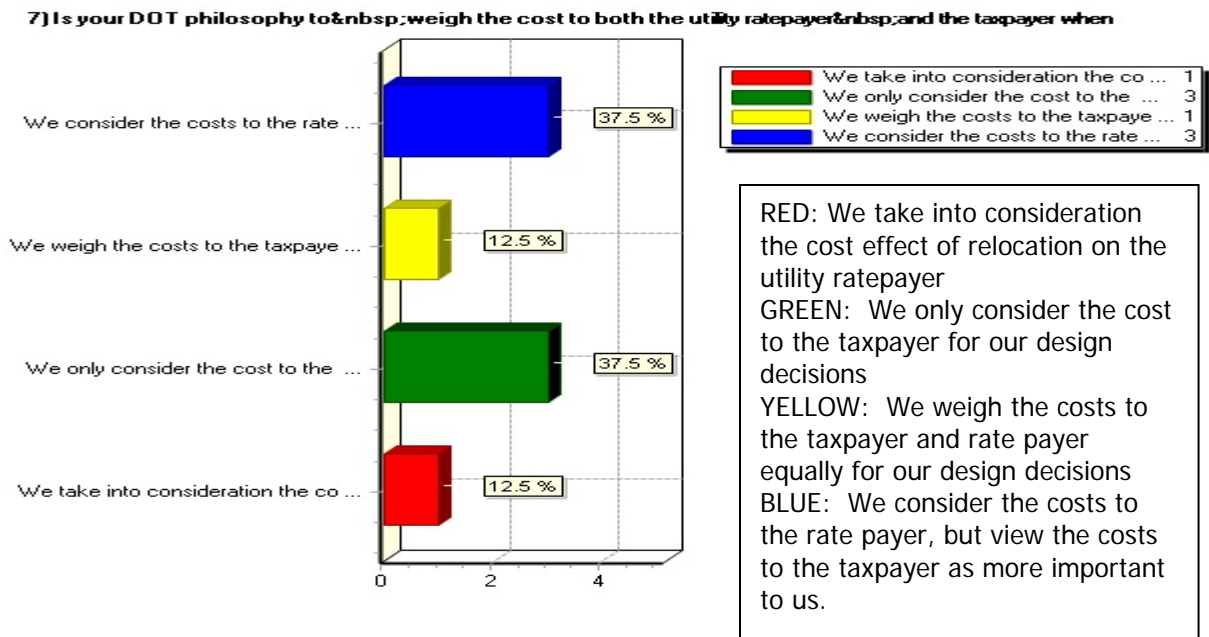
However, within the DOT there was the following diversity of opinion to the official response.

5.1) Question # 6 (This question is to be filled out only by the person responsible to collate answer

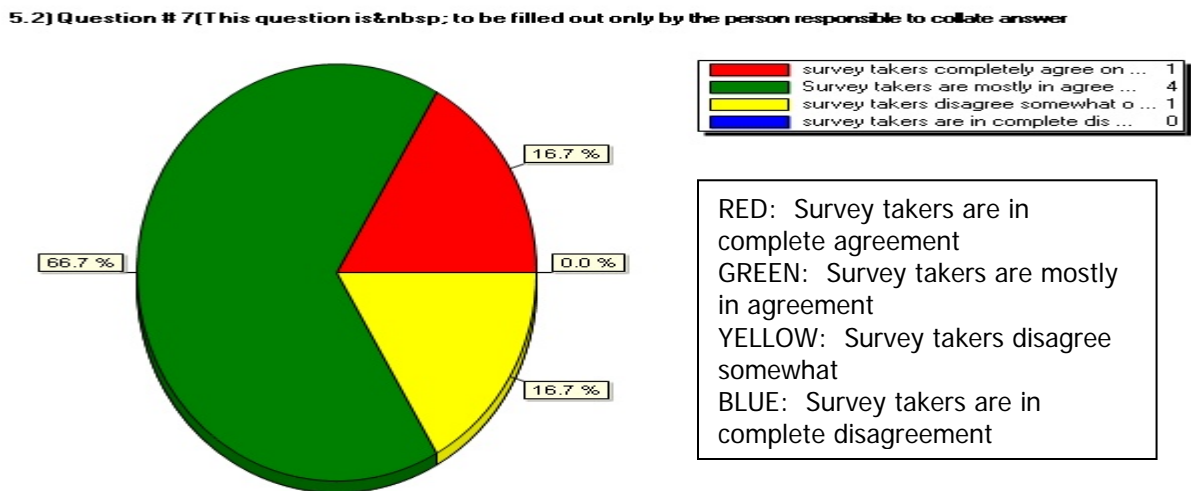


7) Is your DOT philosophy to weigh the cost to both the utility ratepayer and the taxpayer when considering whether to design around or move utilities? (Mark all answers that apply.)

The official DOT response was:

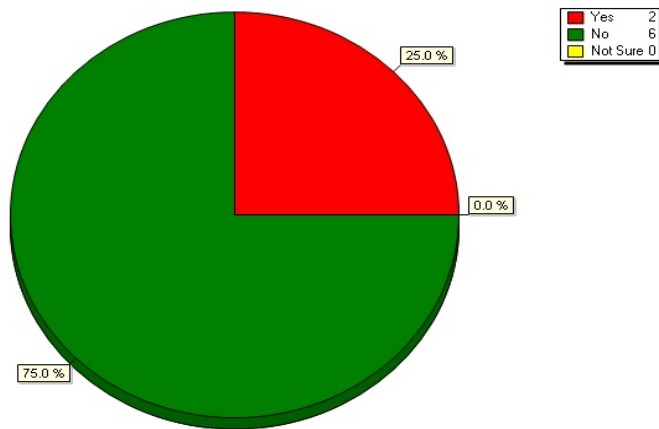


However, within the DOT there was the following diversity of opinion to the official response.



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:

8) Are there any state statutes or policies that affect your decision to relocate utilities versus design

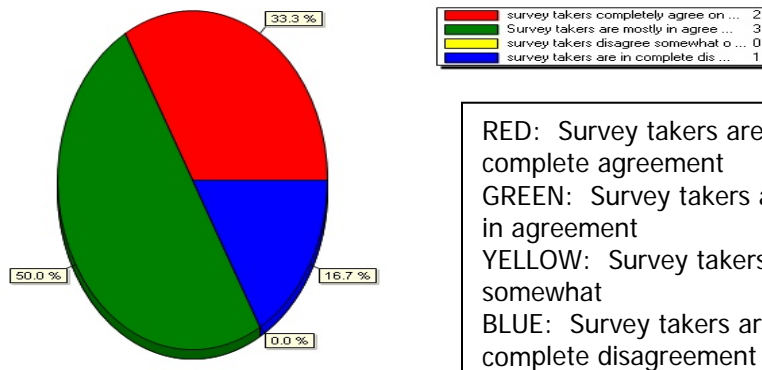


Other Responses:

Public Highways Act
Utility permits issued by the Ministry may influence a design decision.
Tri-agency agreement, HUP agreements

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

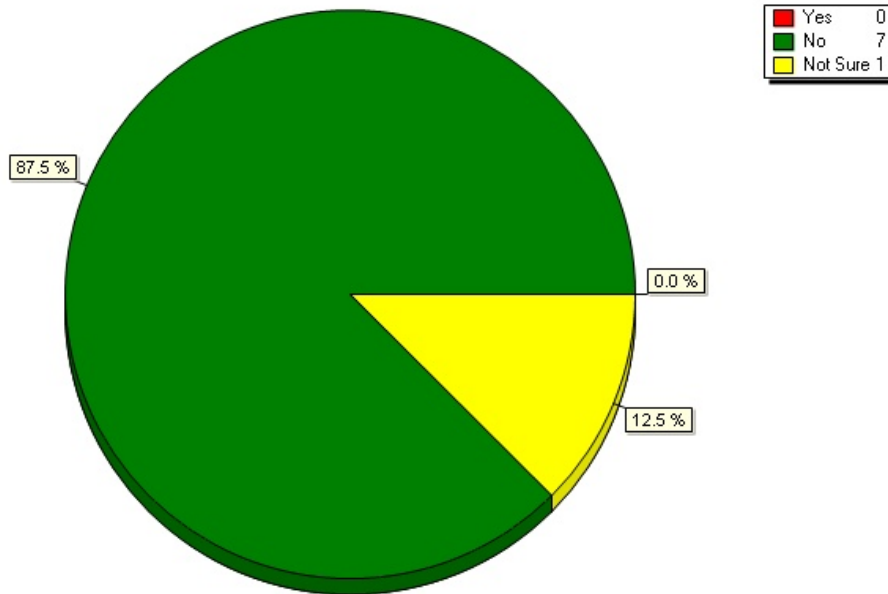
5. 3) Question # 8 (This question is to be filled out only by the person responsible to collate answer



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

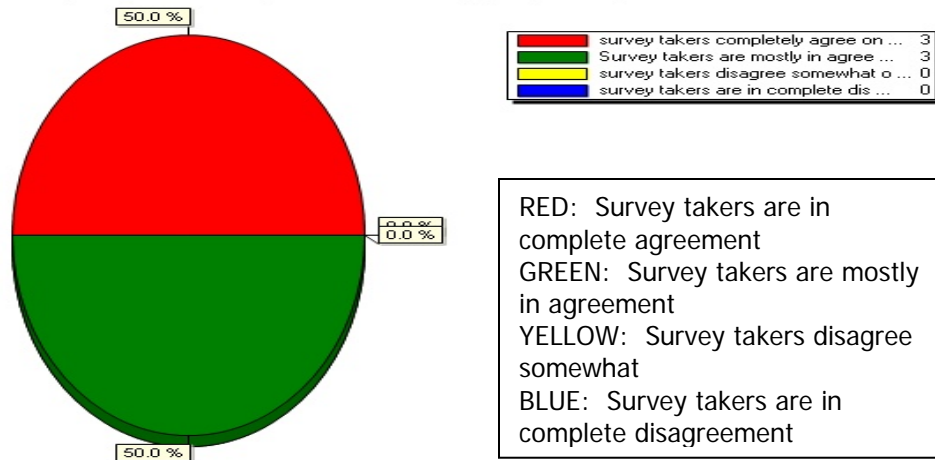
9) Are there any DOT policies or guidance documents that negatively affect your ability to consider whether to relocate utilities or design around them? If "yes" please give a brief description in the "Other" section. The official DOT response was:

9) Are there any DOT policies or guidance documents that negatively affect your ability to consider whether



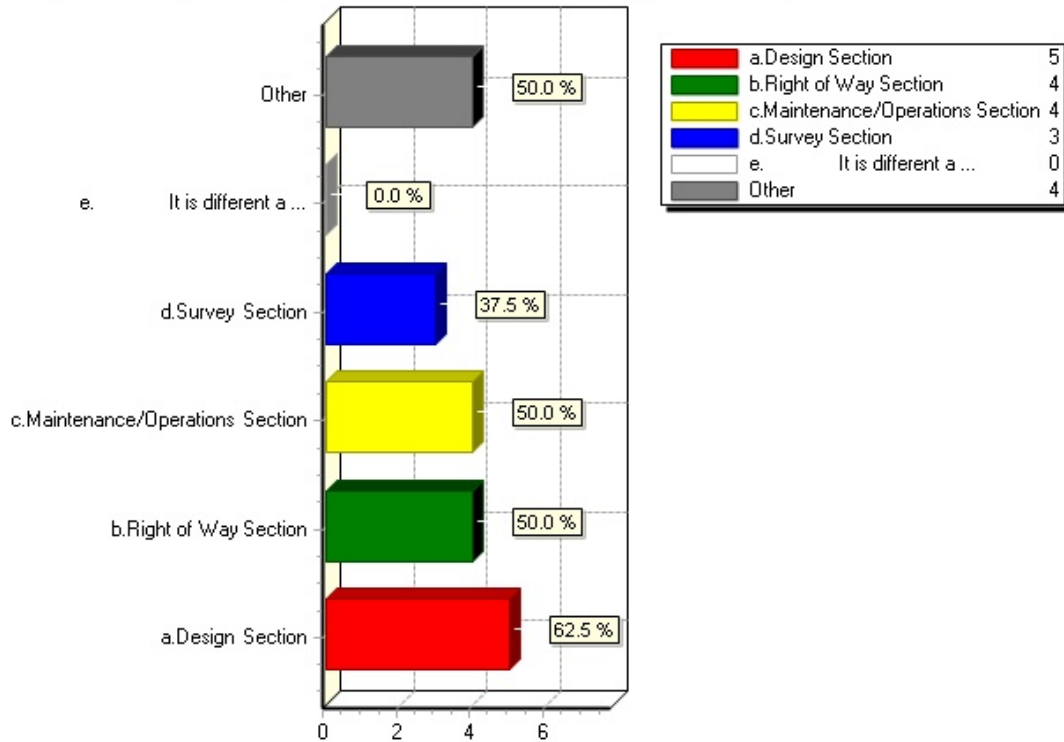
However, within the DOT there was the following diversity of opinion to the official response.

5.4) Question # 9 (This question is to be filled out only by the person responsible to collate answer



10) Where does your "Utility Section" fit within the overall DOT organization? (Mark all answers that apply.) The official DOT response was:

10) Where does your "Utility Section" fit within the overall DOT organization? (Mark all answers that apply.)

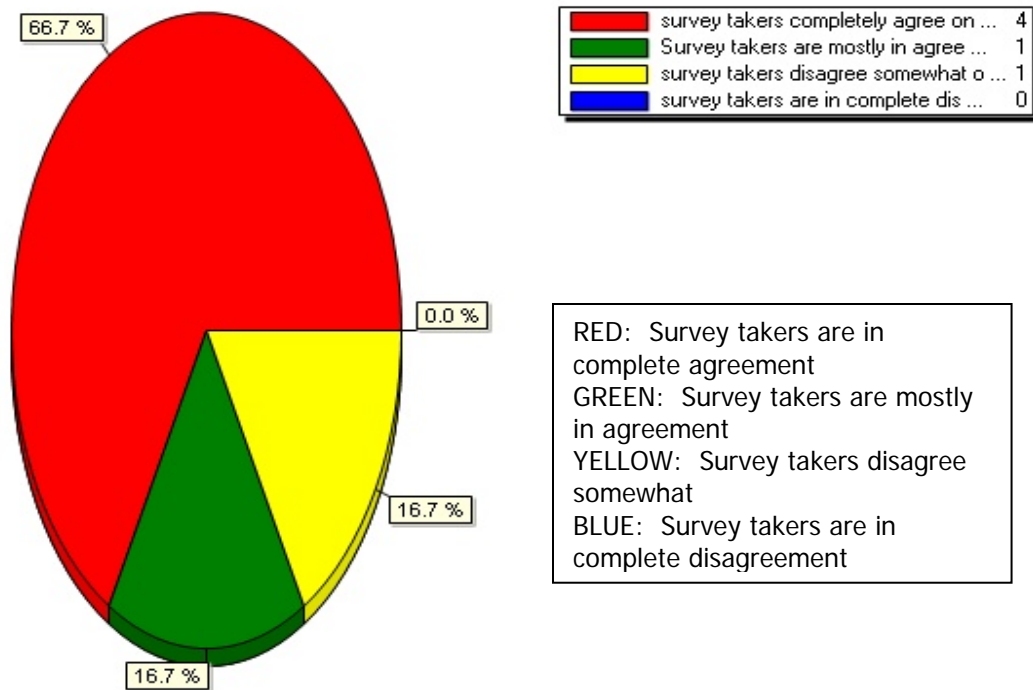


Other Responses:

Construction Section
Roadside Managers report to Design & Ops
Don't have dedicated utility staff
We don't have a Utility Section.
No defined utility section

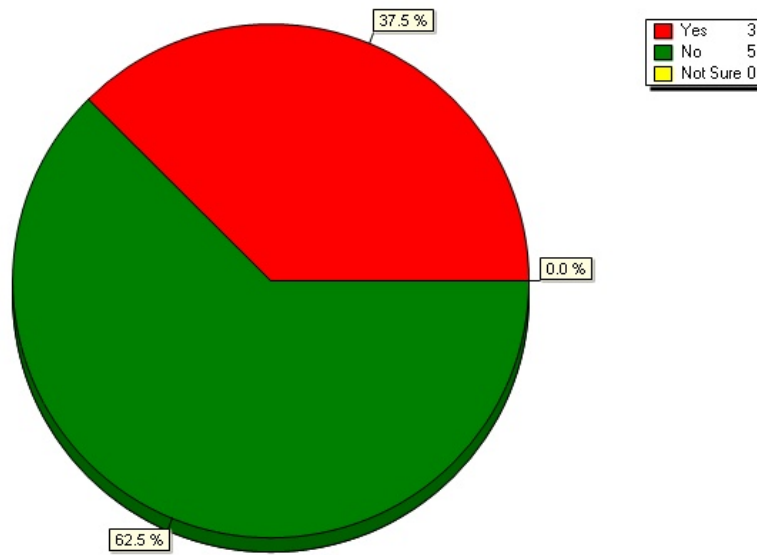
However, within the DOT there was the following diversity of opinion to the official response.

5.5) Question # 10 (This question is to be filled out only by the person responsible to collate answers)



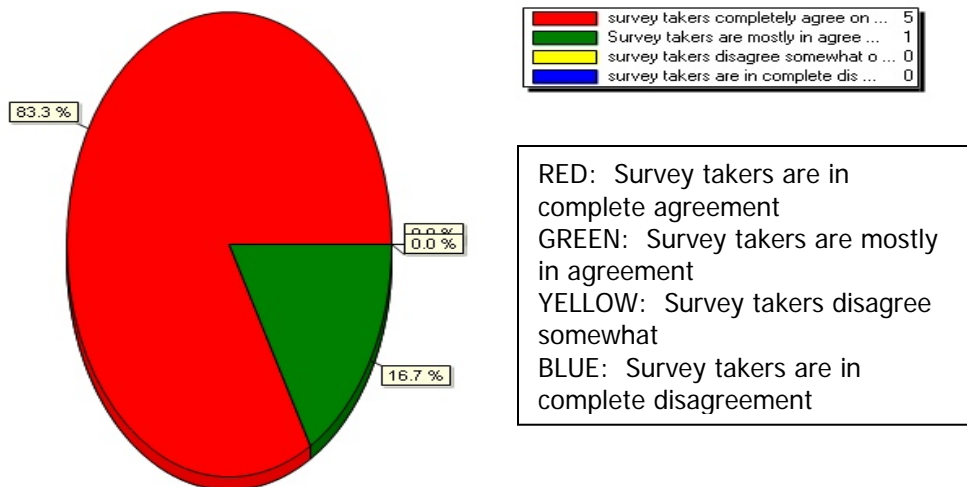
11) Is a member of the "Utility Section" designated to be part of the project design team? The official DOT response was:

11) Is a member of the "Utility Section" designated to be part of the project design team?



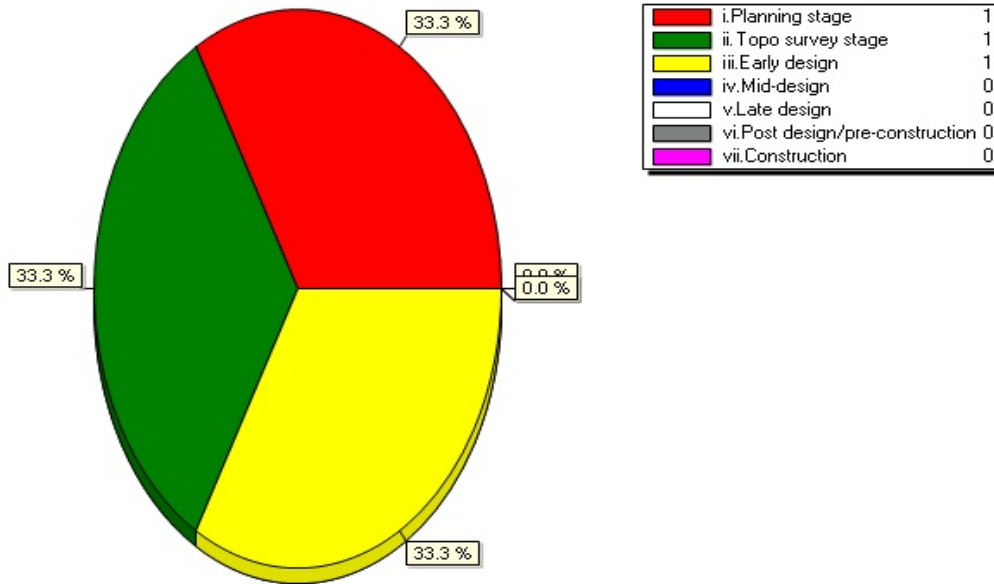
However, within the DOT there was the following diversity of opinion to the official response.

5.6) Question # 11 (This question is to be filled out only by the person responsible to collate answers)



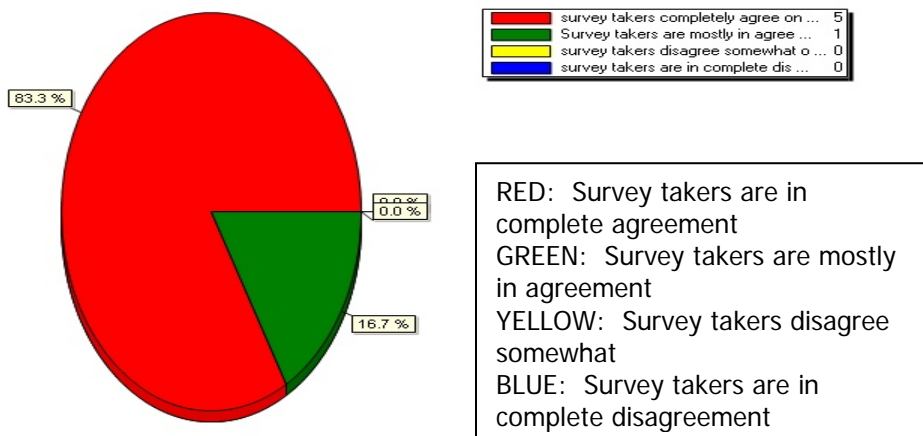
12) If Yes, at what point in the project development process do they have the first opportunity to get involved? The official DOT response was:

12) If Yes, at what point in the project development process do they have the first opportunity to get inv



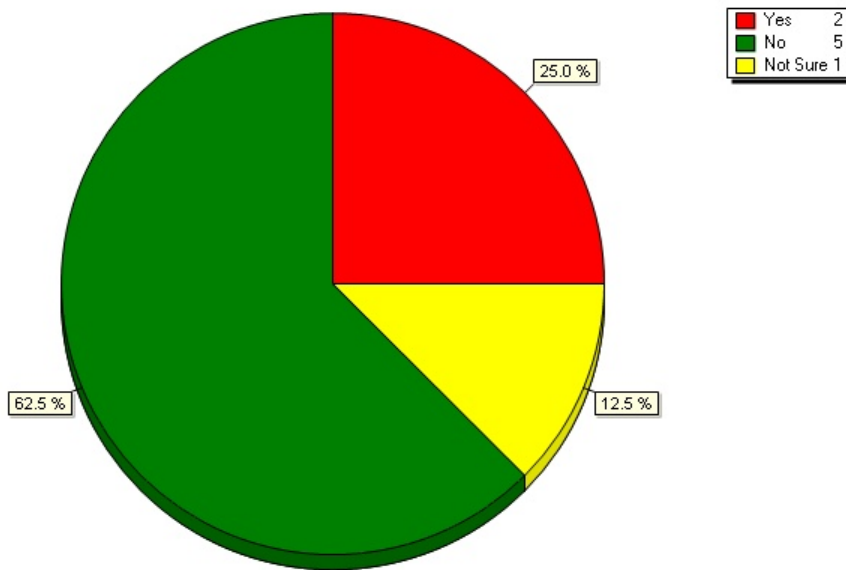
However, within the DOT there was the following diversity of opinion to the official response.

5.7) Question # 12 (This question is to be filled out only by the person responsible to collate answe



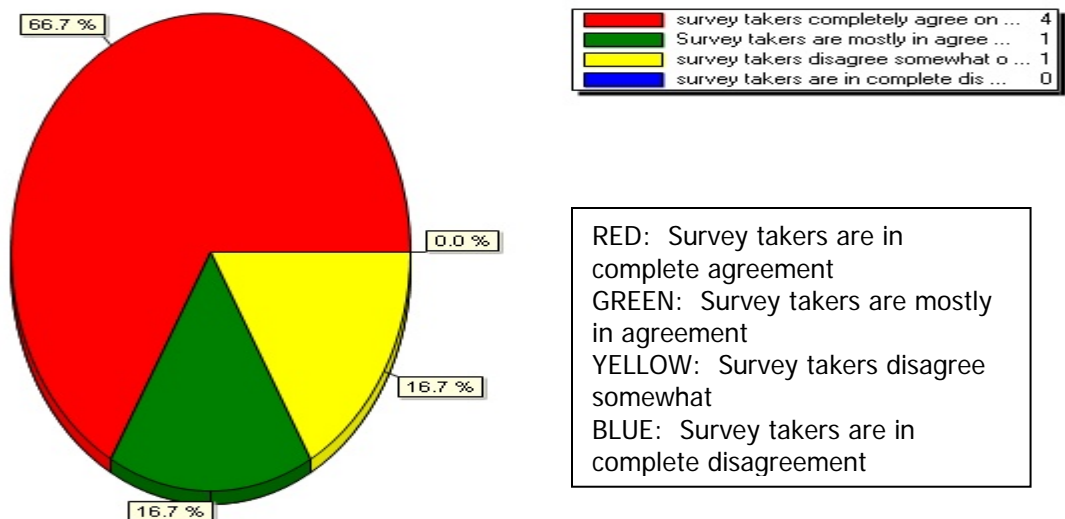
13) Do you have designers on most projects that are trained in utility issues? The official DOT response was:

13) Do you have designers on most projects that are trained in utility issues?



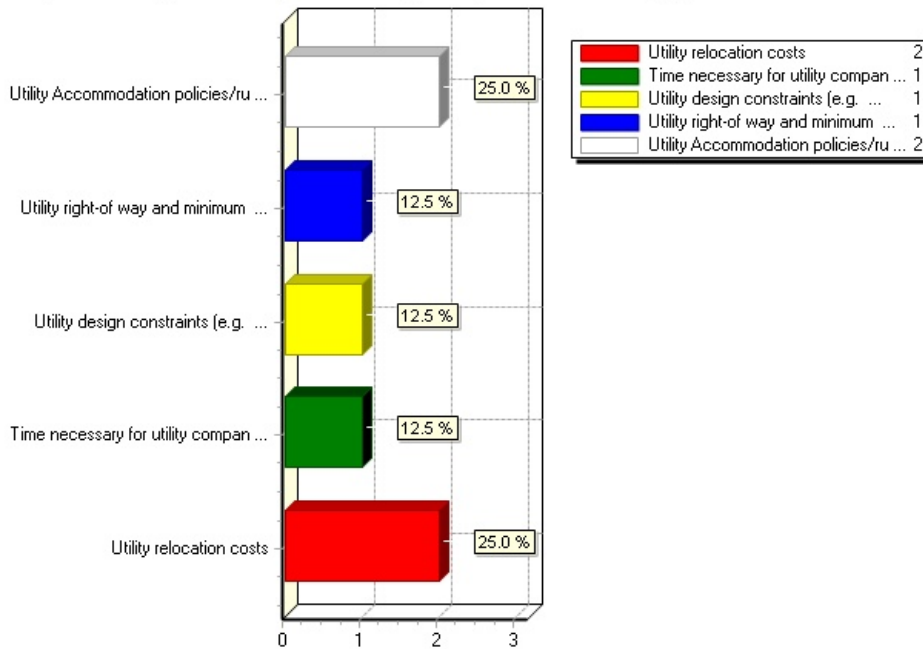
However, within the DOT there was the following diversity of opinion to the official response.

5.8) Question # 13 (This question is to be filled out only by the person responsible to collate answers)



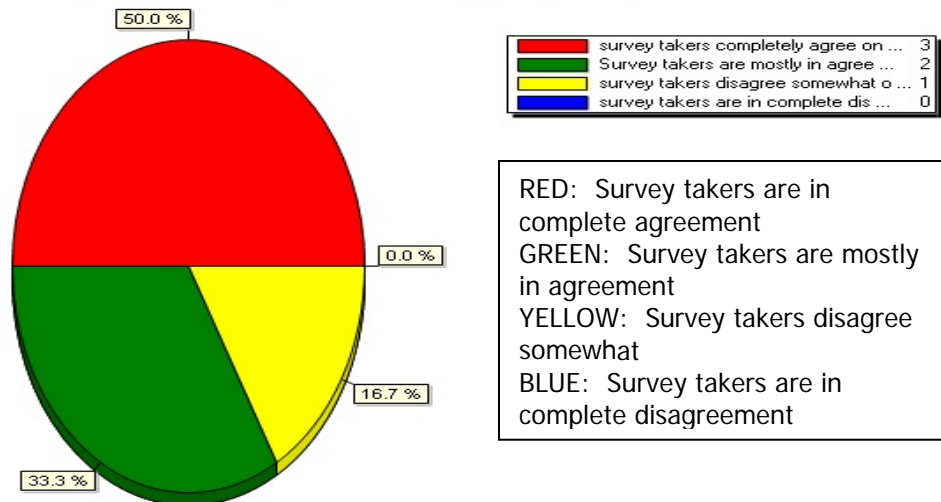
14) If Yes, do they have training in the following areas? (Mark all answers that apply.) The official DOT response was:

14) If Yes, do they have training in the following areas? (Mark all answers that apply.)



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

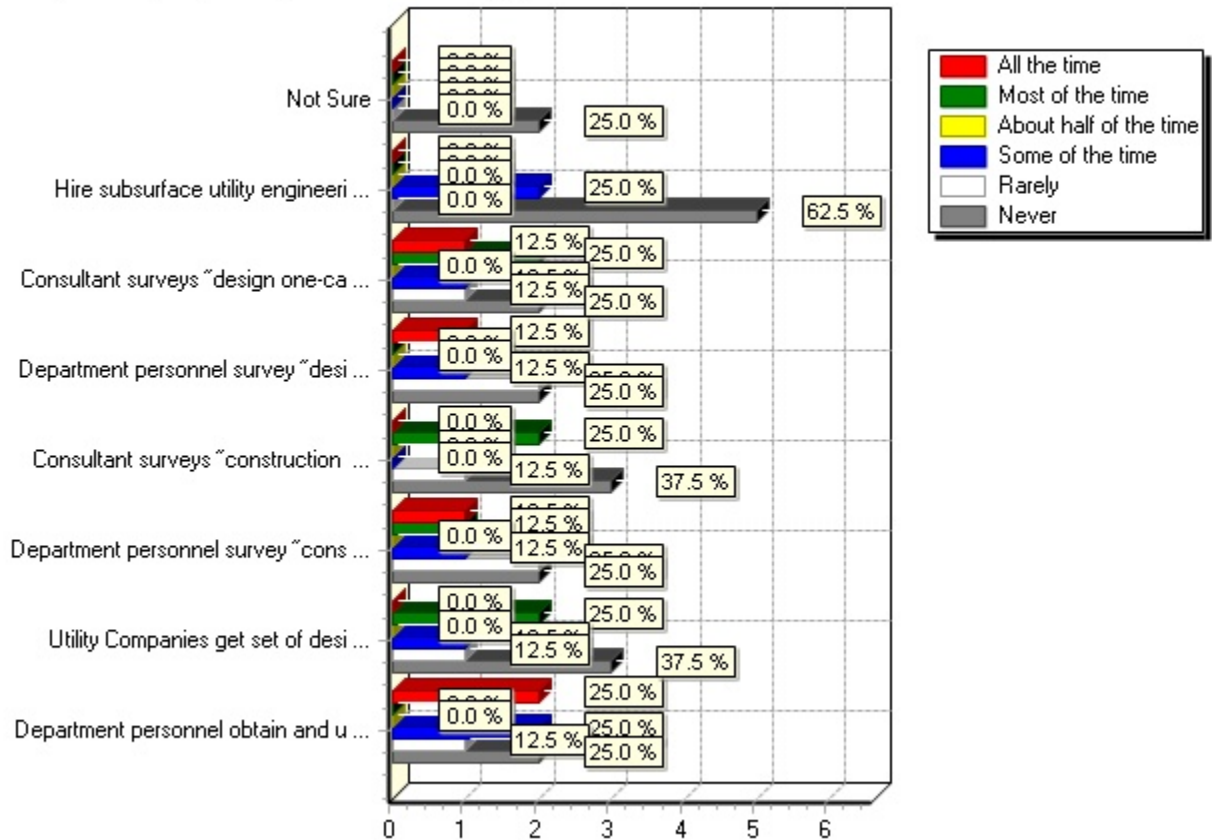
5.9) Question # 14 (This question is to be filled out only by the person responsible to collate answers)



15) How do you get utility information on design plans?

The official DOT response was:

15) How do you get utility information on design plans?



COMMENT RESPONSES

Do not have a "one-call marker" program.

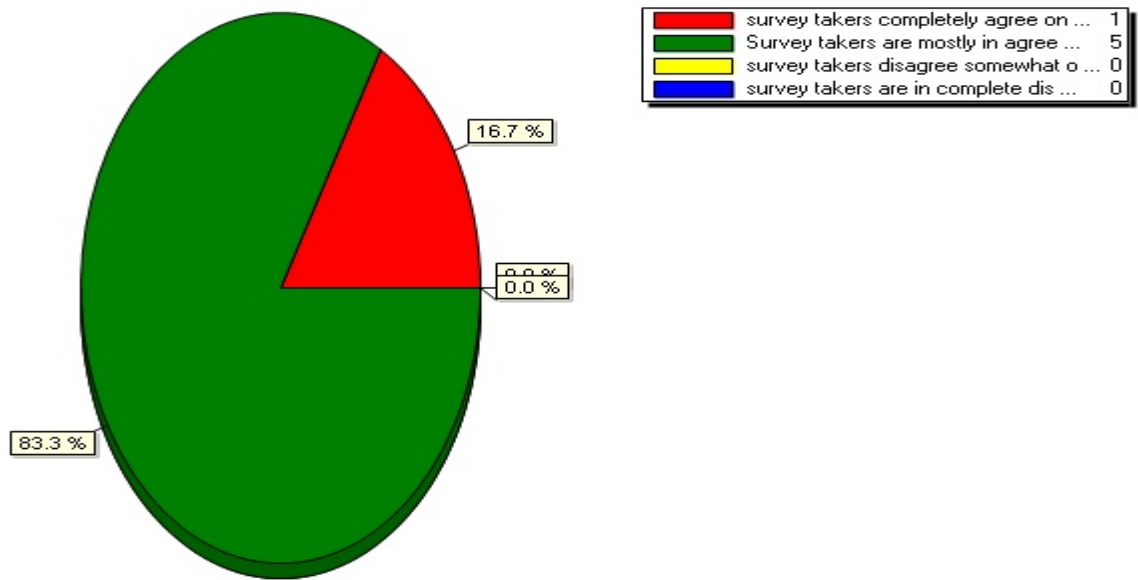
Mtgs held with Utilities to discuss work

COMPLETE QUESTIONS

- Department personnel obtain and use utility records
- Utility Companies get set of design plans and draw utilities on it
- Department personnel survey "construction one-call marks"
- Consultant surveys "construction one-call marks"
- Department personnel survey "design one-call marks"
- Consultant surveys "design one-call marks"
- Hire subsurface utility engineering firm
- Not Sure

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 collate answ

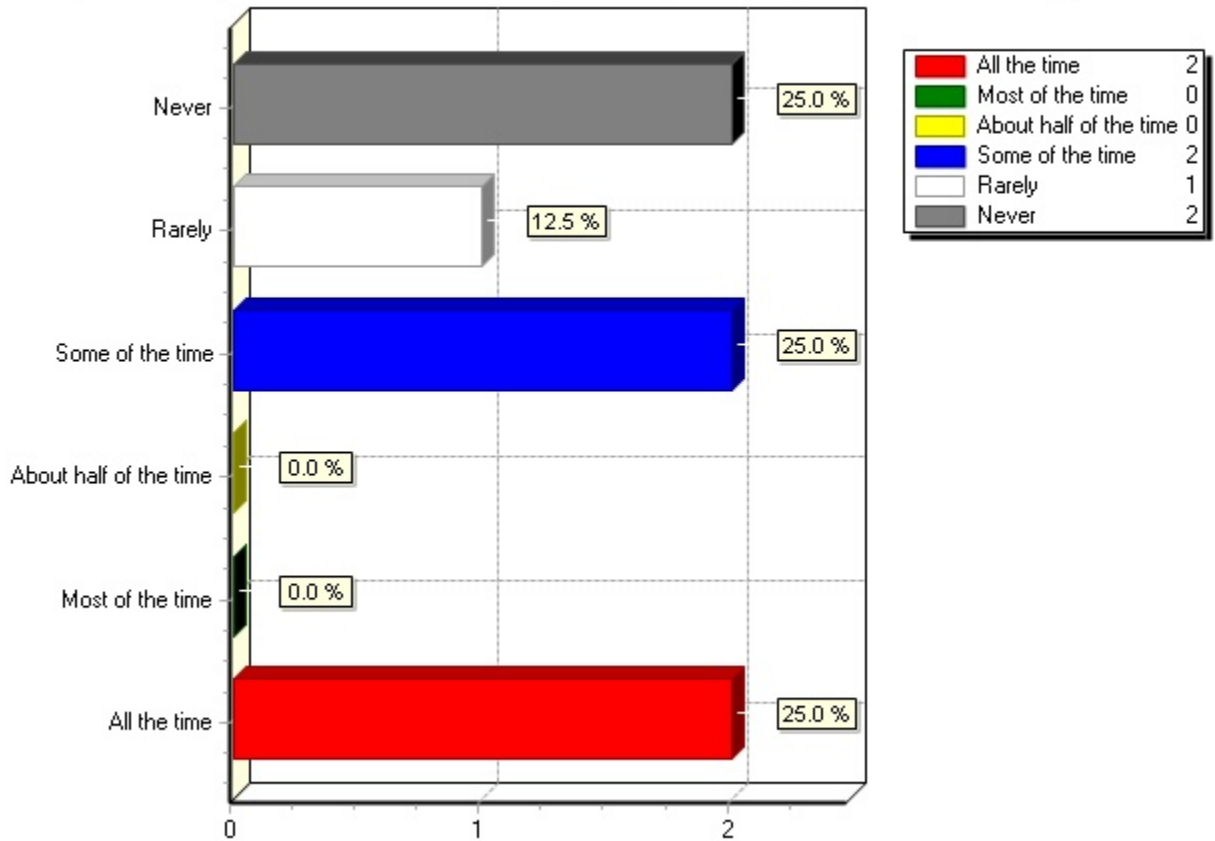


Here is the detailed response for each question asked in # 15.

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

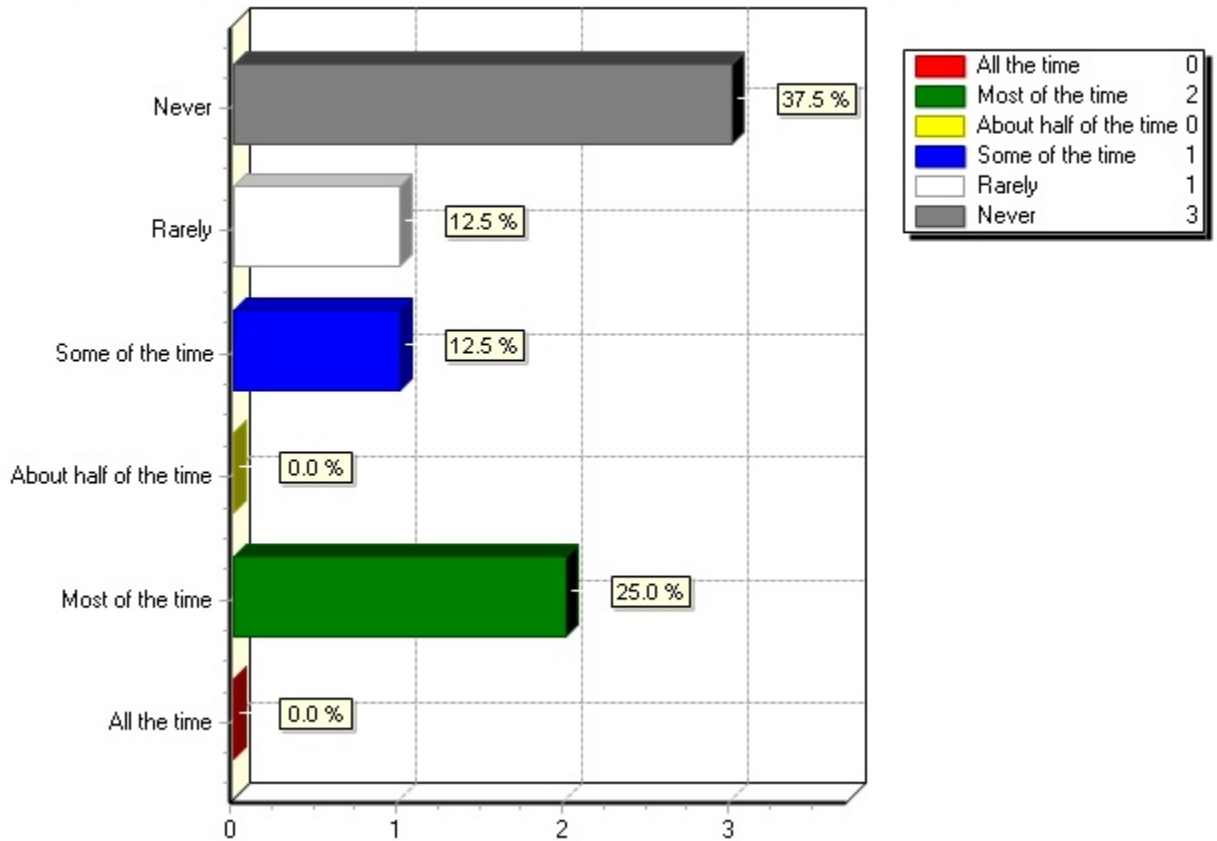
15.1) Department personnel obtain and use utility records (How do you get utility information on design plans?)

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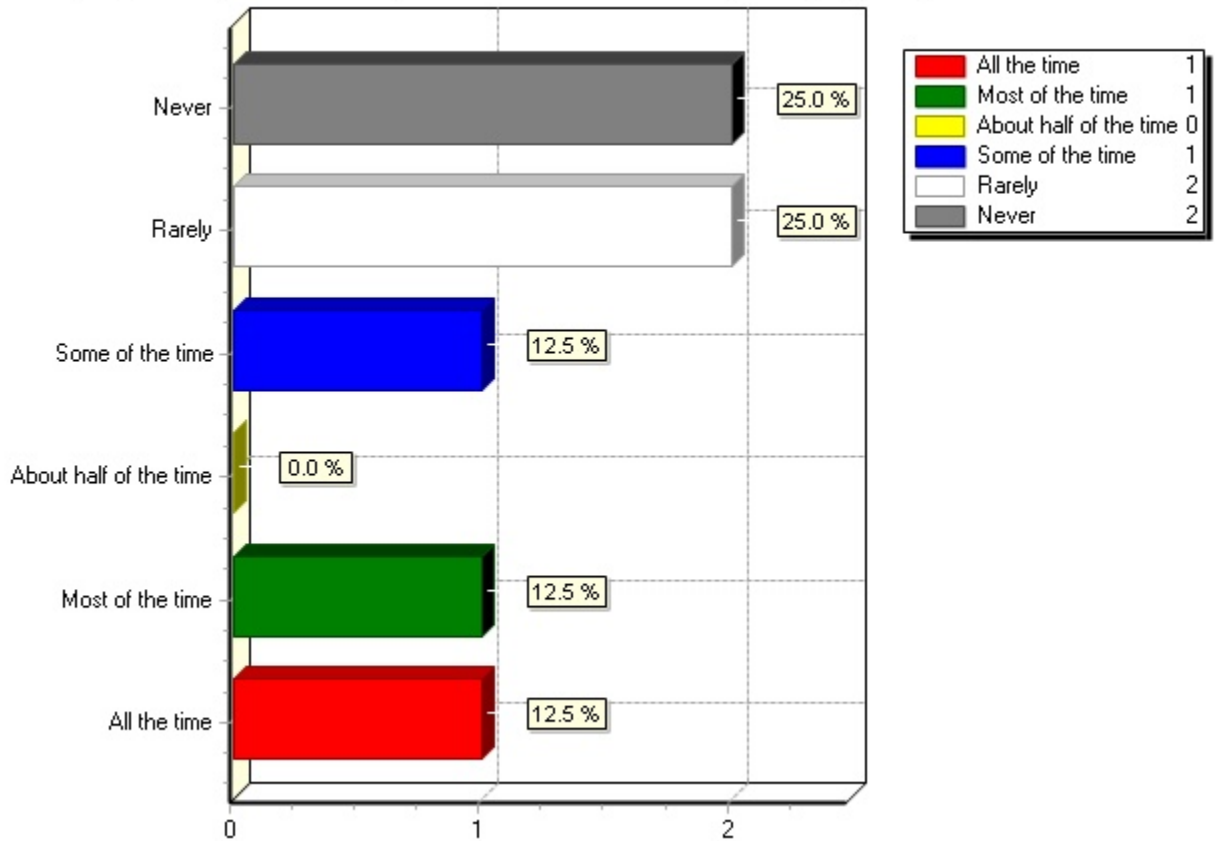
15.2) Utility Companies get set of design plans and draw utilities on it (How do you get utility information on design plans?)

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



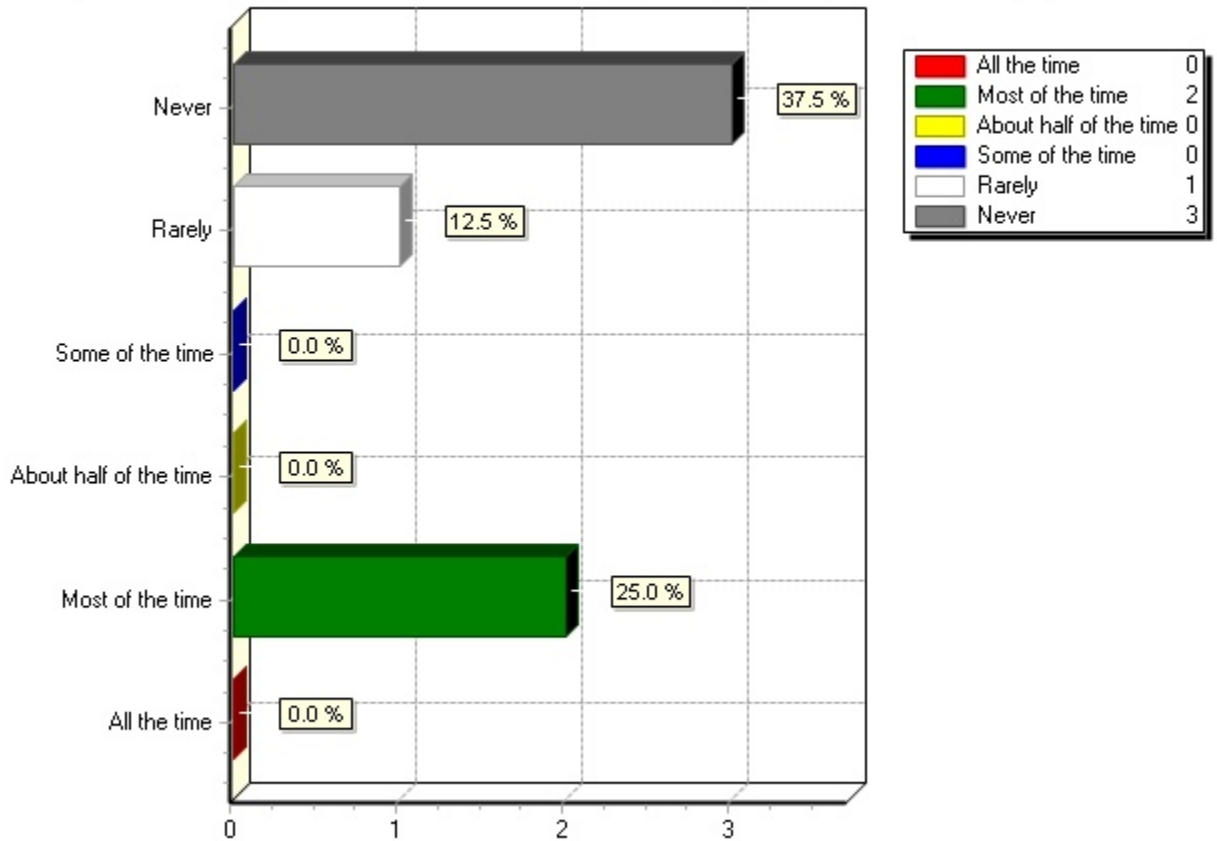
15.3) Department personnel survey “construction one-call marks”(How do you get utility information on design plans?)

15.3) Department personnel survey “construction one-call marks”(How do you get utility information on desi



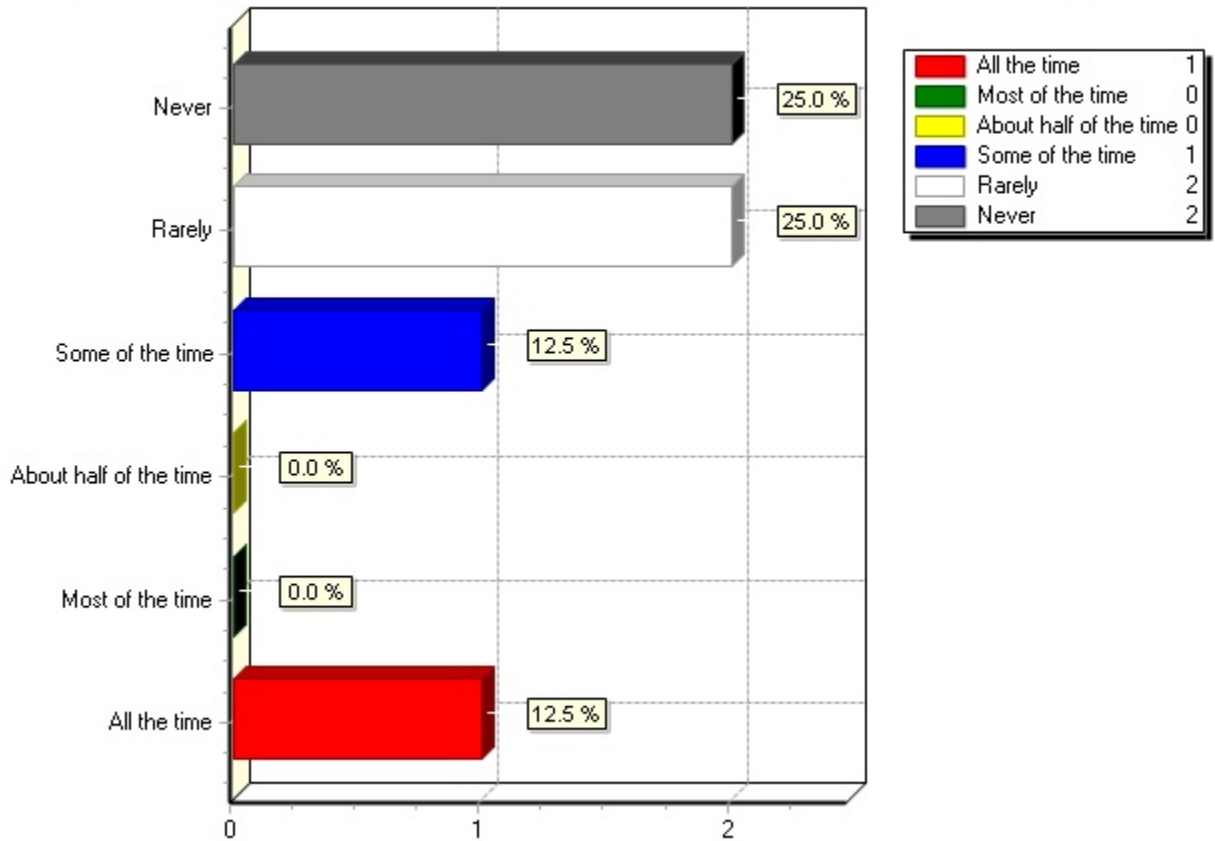
15.4) Consultant surveys "construction one-call marks"(How do you get utility information on design plans?)

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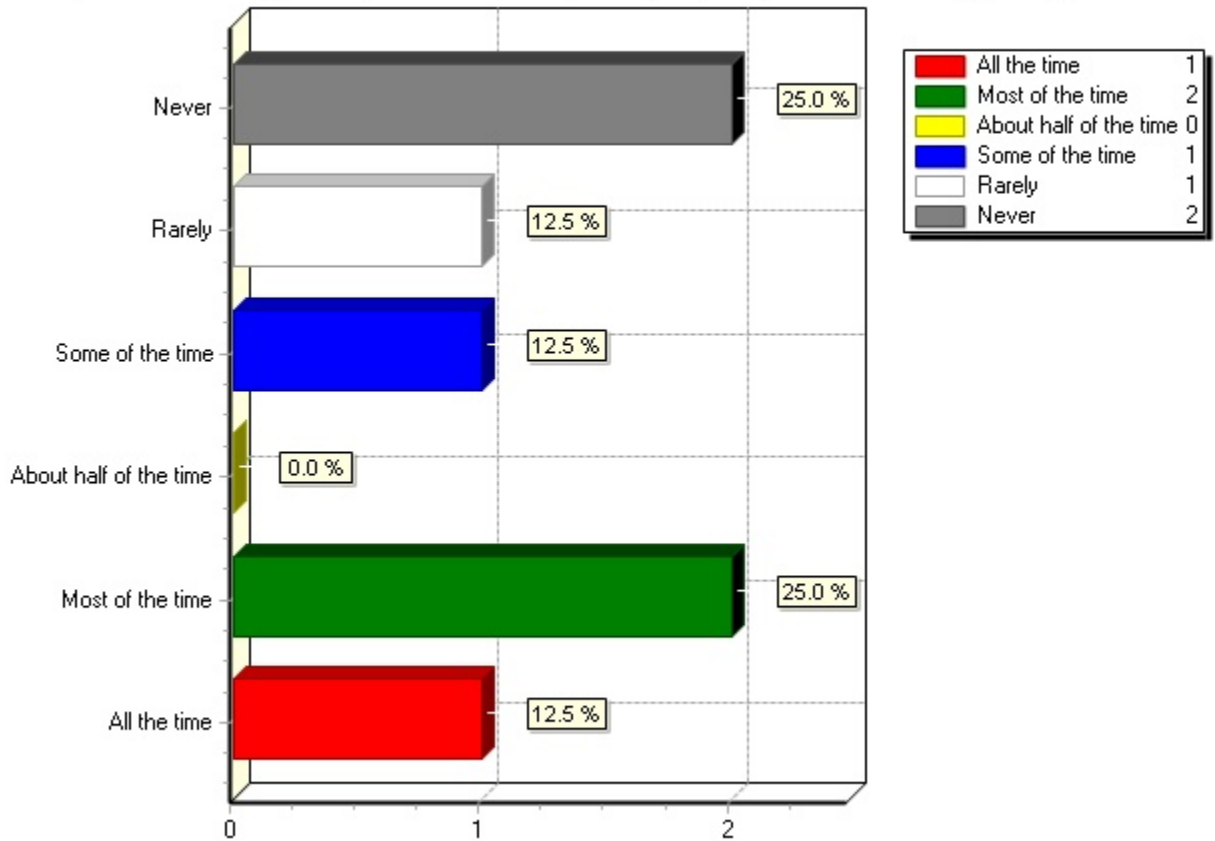
15.5) Department personnel survey "design one-call marks"(How do you get utility information on design plans?)

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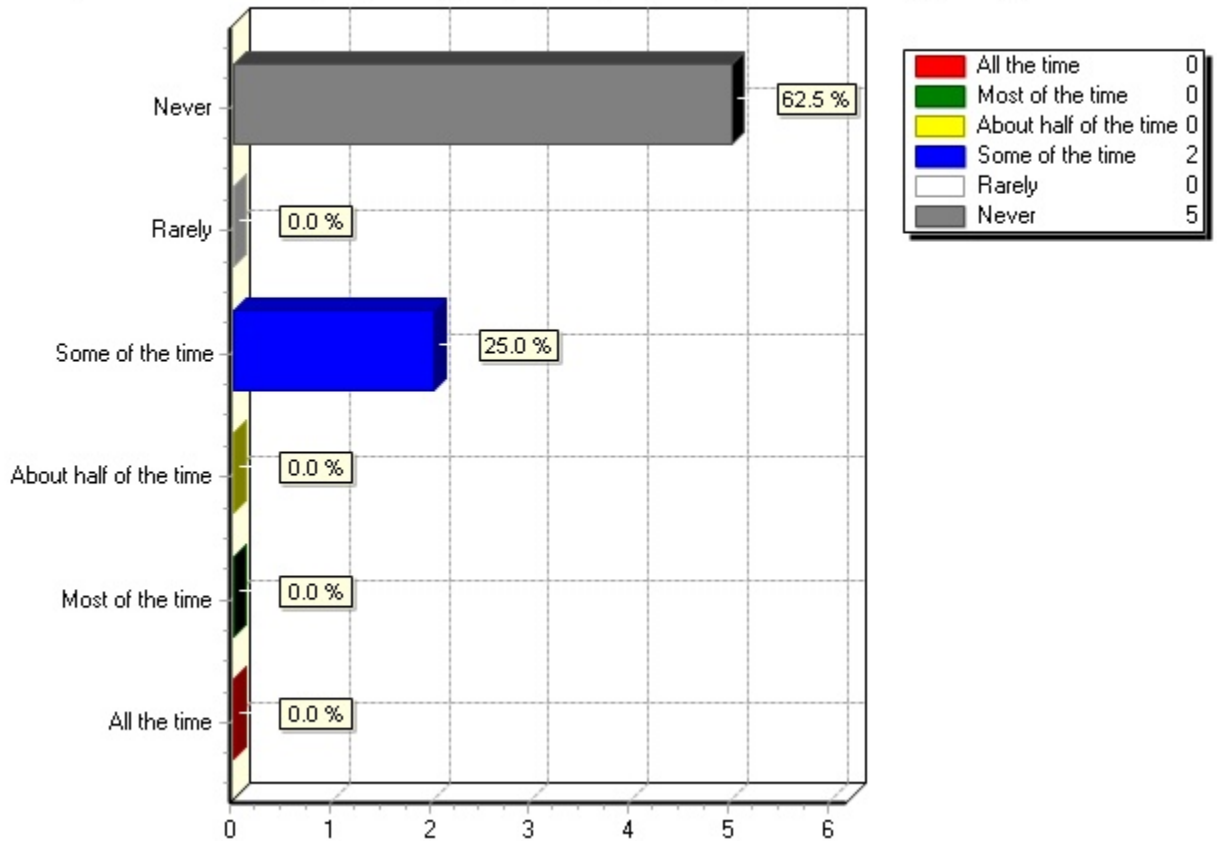
15.6) Consultant surveys “design one-call marks”(How do you get utility information on design plans?)

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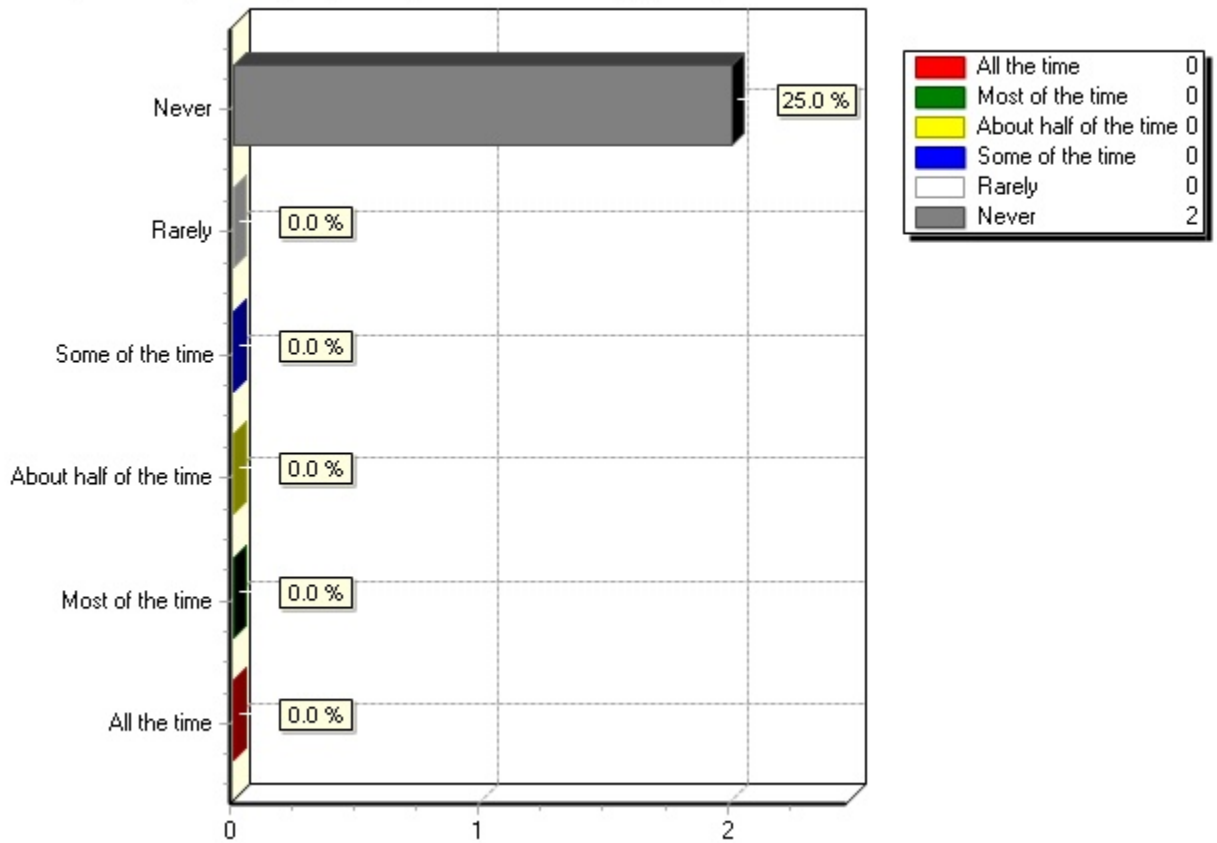
15.7) Hire subsurface utility engineering firm(How do you get utility information on design plans?)

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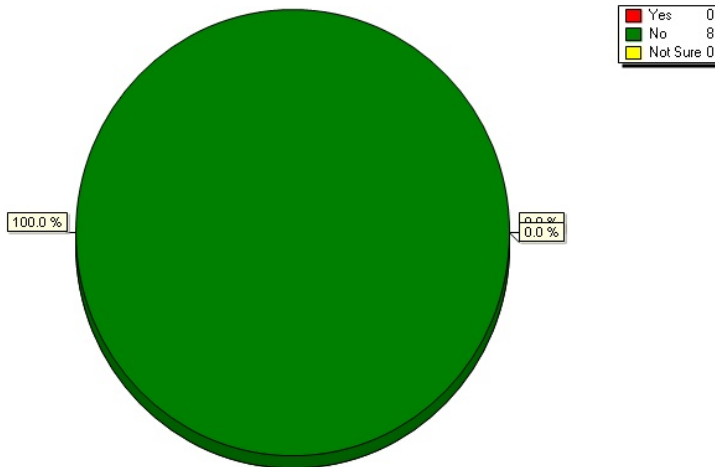
15.8) Not Sure(How do you get utility information on design plans?)

15.8) Not Sure(How do you get utility information on design plans?)



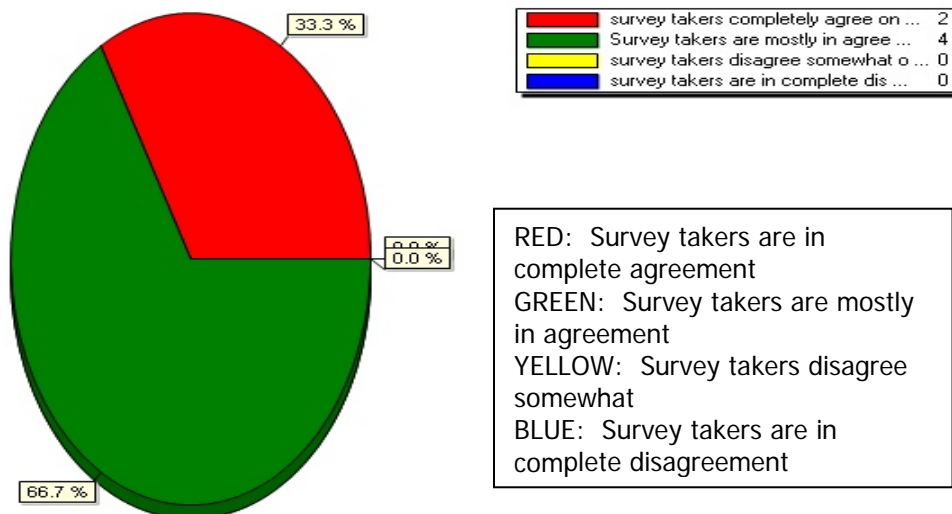
16) Do you have a formal mechanism to decide on which of the above methods you will use for a specific project? The official DOT response was:

16) Do you have a formal mechanism to decide on which of the above methods you will use for a specific pro



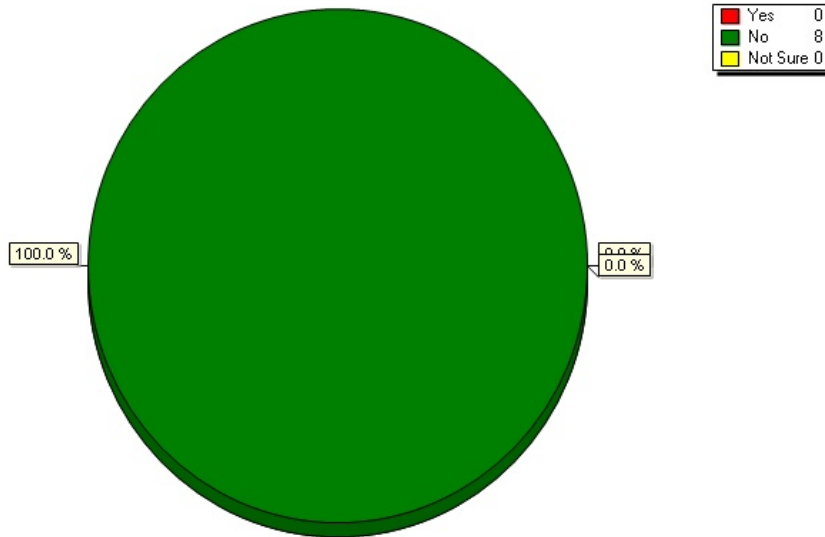
However, within the DOT there was the following diversity of opinion to the official response.

5.11) Question # 16 (This question is to be filled out only by the person responsible to collate ans



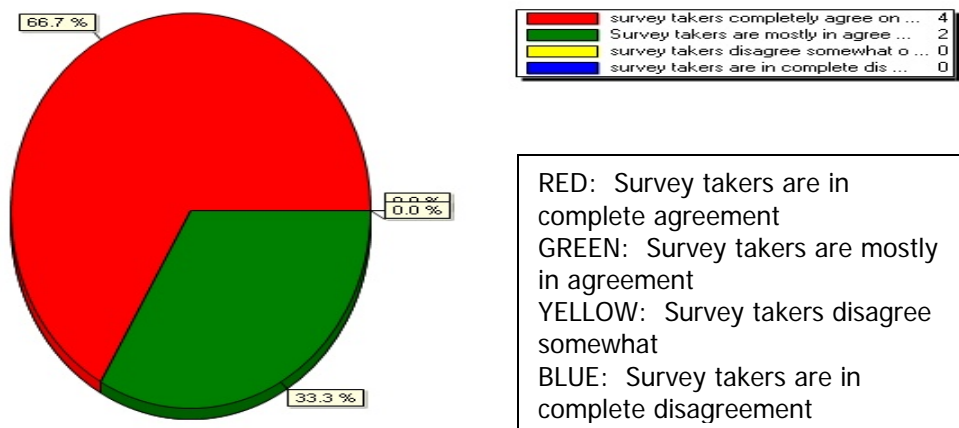
17) Do you consider the impacts of overhead utilities at a different time in the project development process than you do the underground utilities? The official DOT response was:

17) Do you consider the impacts of overhead utilities at a different time in the project development proce



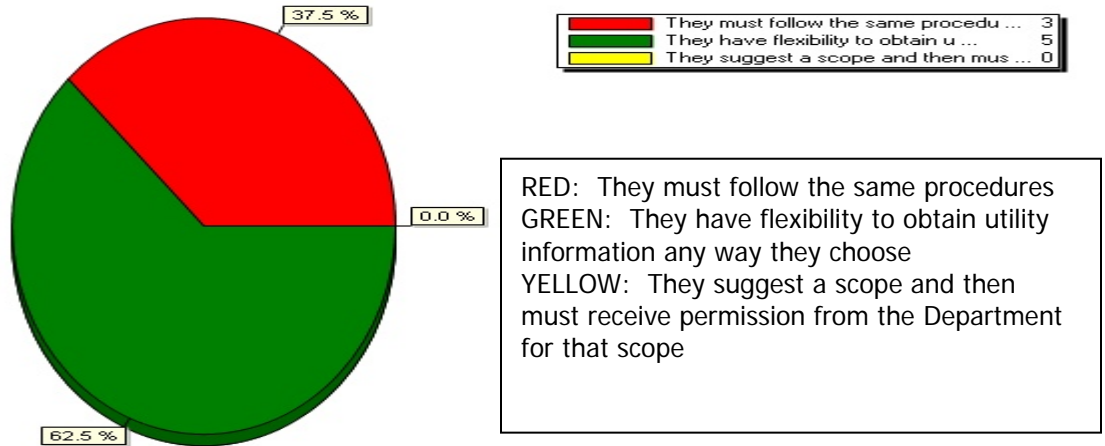
However, within the DOT there was the following diversity of opinion to the official response.

5.12) Question # 17 (This question is to be filled out only by the person responsible to collate ans



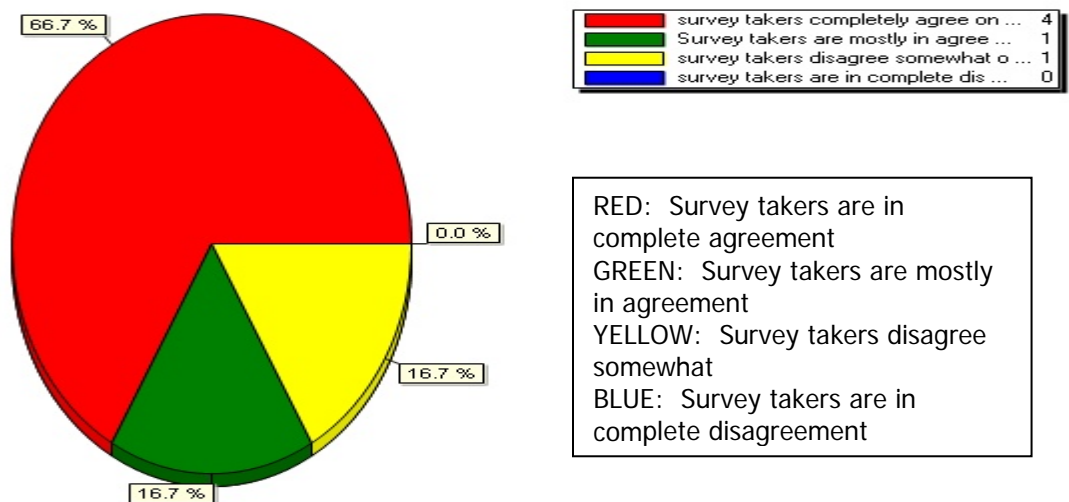
18) Do consultant-designed projects follow the same procedures for obtaining utility information that the department does? The official DOT response was:

18) Do consultant-designed projects follow the same procedures for obtaining utility information that the



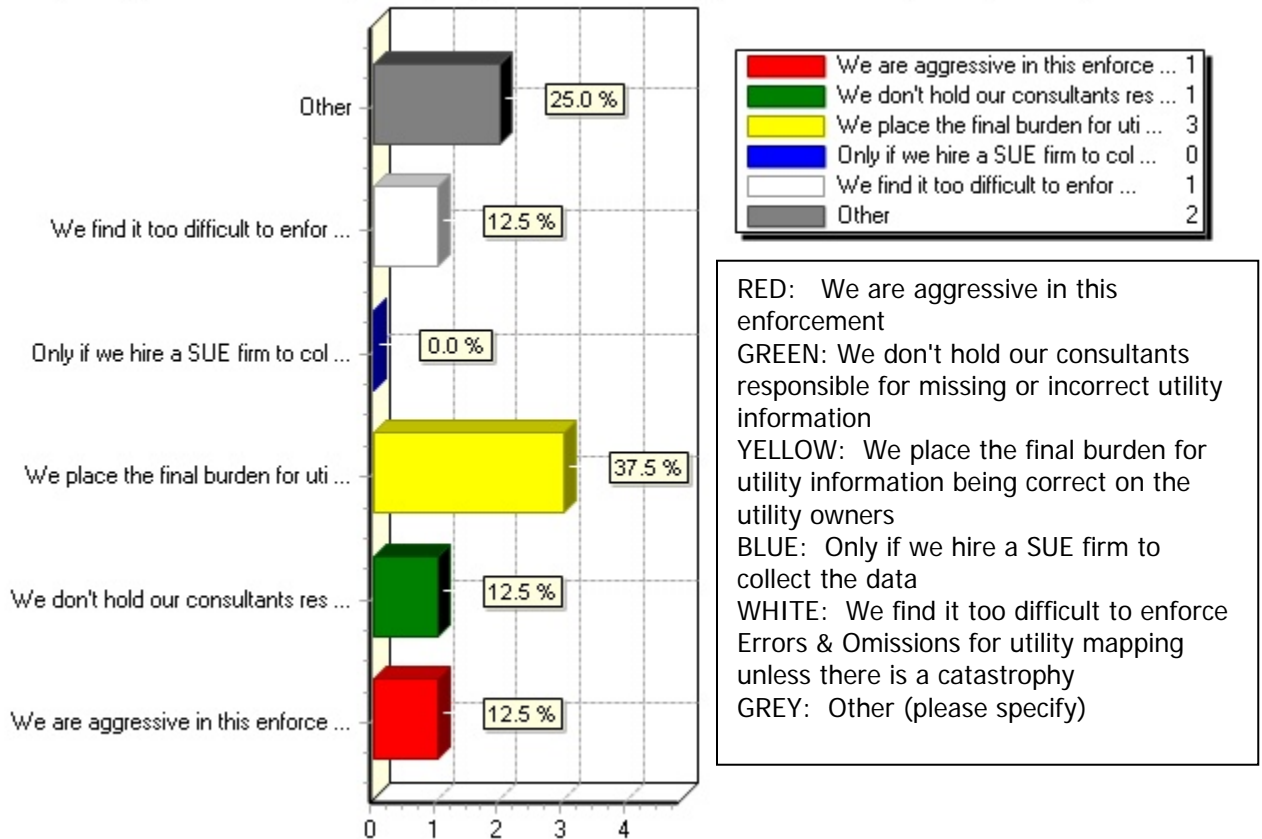
However, within the DOT there was the following diversity of opinion to the official response.

5.13) Question # 18 (This question is to be filled out only by the person responsible to collate answers)



19) Does your Contract Management policy enforce Errors & Omissions for utility data depicted on plans by consultants? The official DOT response was:

19) Does your Contract Management policy enforce Errors & Omissions for utility data depicted on plans

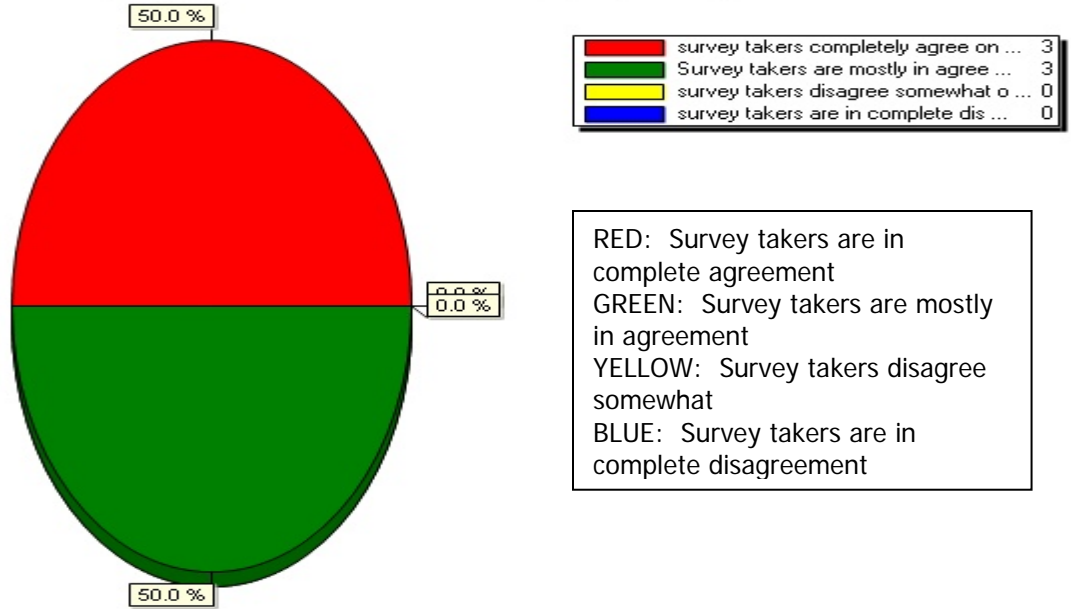


Other Responses:

No policy
Errors and omissions for utility data are not typically catastrophic and are of low significance.

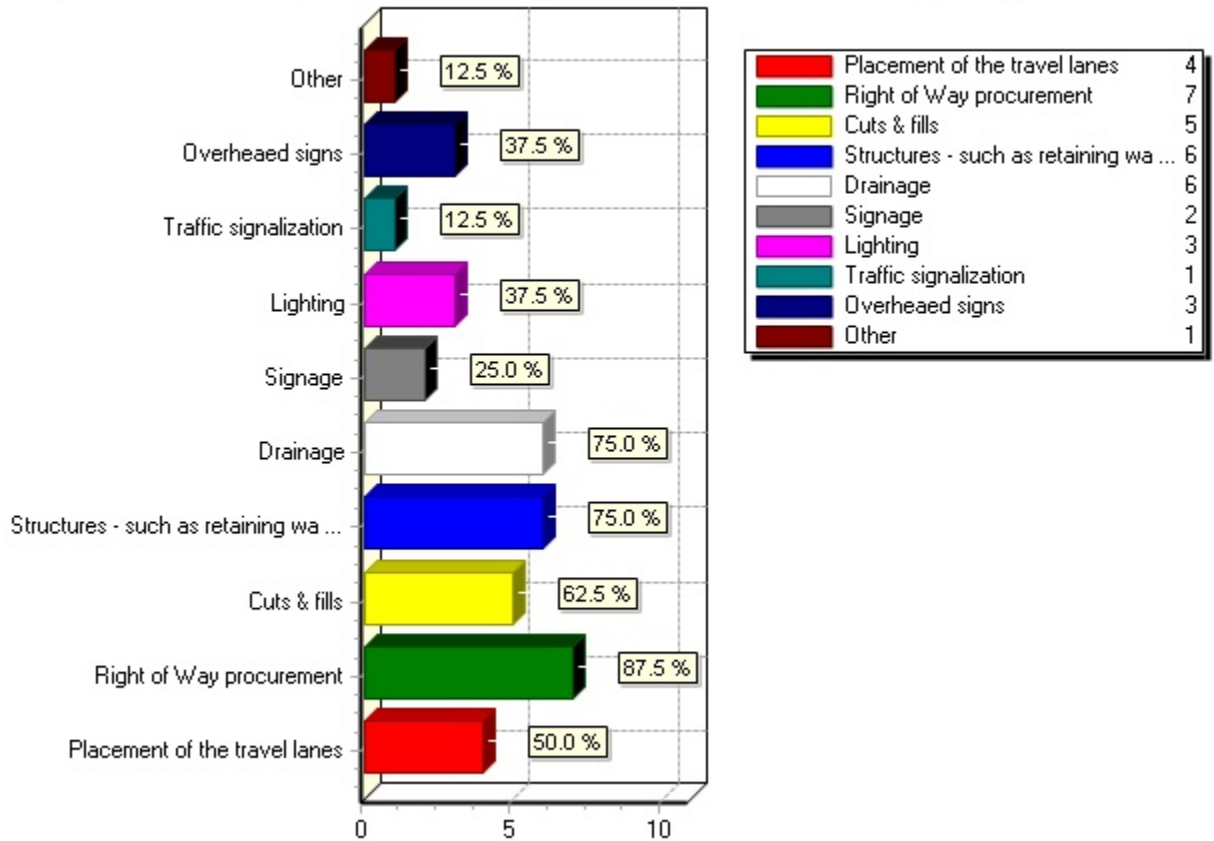
However, within the DOT there was the following diversity of opinion to the official response.

5.14) Question # 19(This question is to be filled out only by the person responsible to collate answ



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:

20) Which of the following elements are routinely considered as a valid reason for a design change as a re

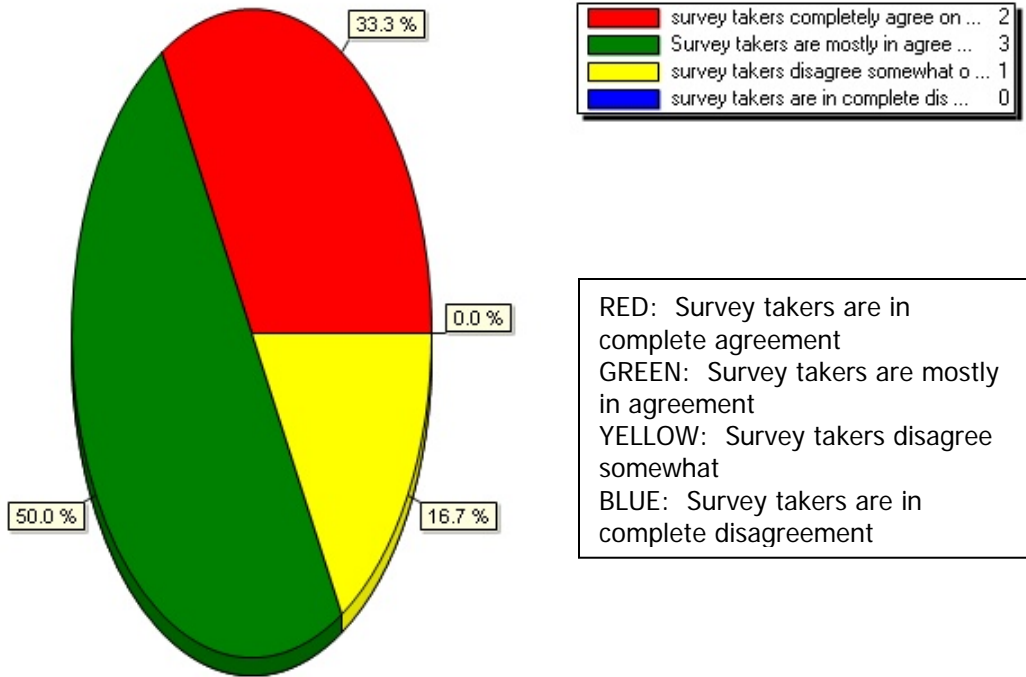


Other Responses:

Excessive cost or technical difficulty in relocation

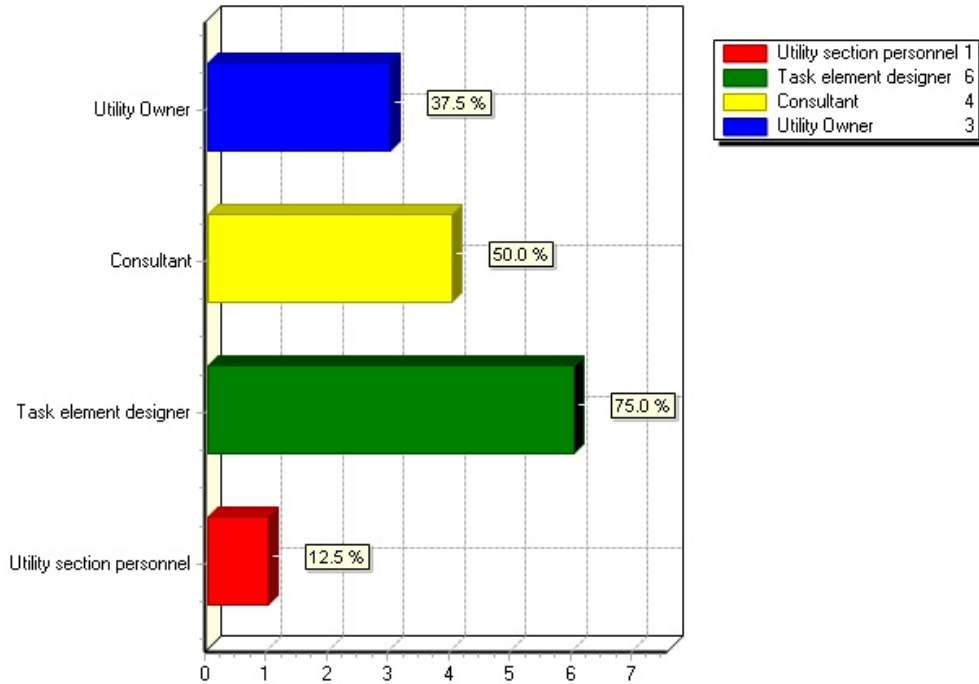
However, within the DOT there was the following diversity of opinion to the official response.

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



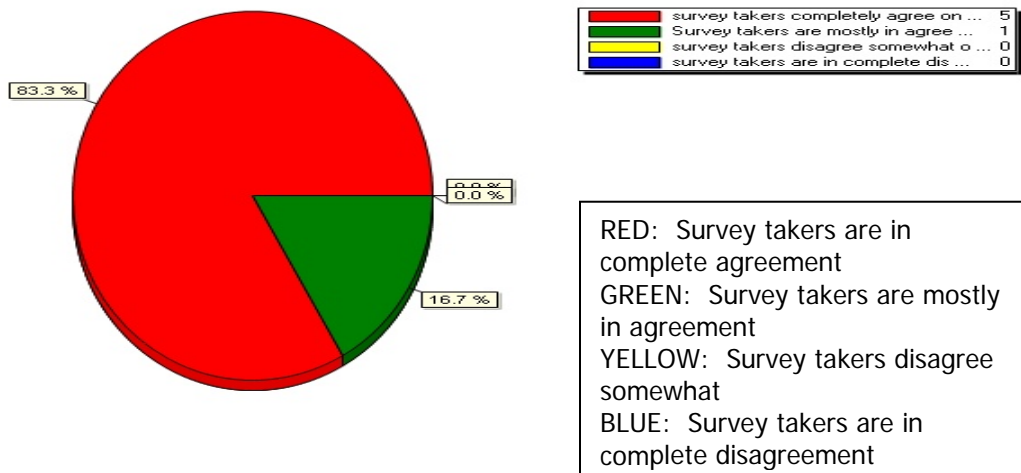
21) If such a design change is suggested, who does the suggesting? (Mark all answers that apply.) The official DOT response was:

21) If such a design change is suggested, who does the suggesting? (Mark all answers that apply.)



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

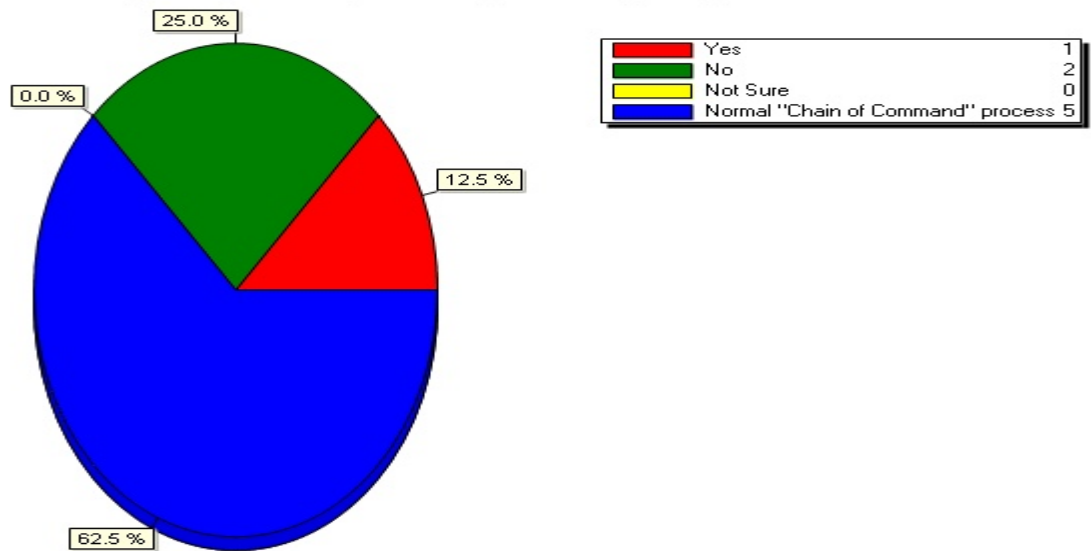
5.16) Question # 21 (This question is to be filled out only by the person responsible to collate answers)



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

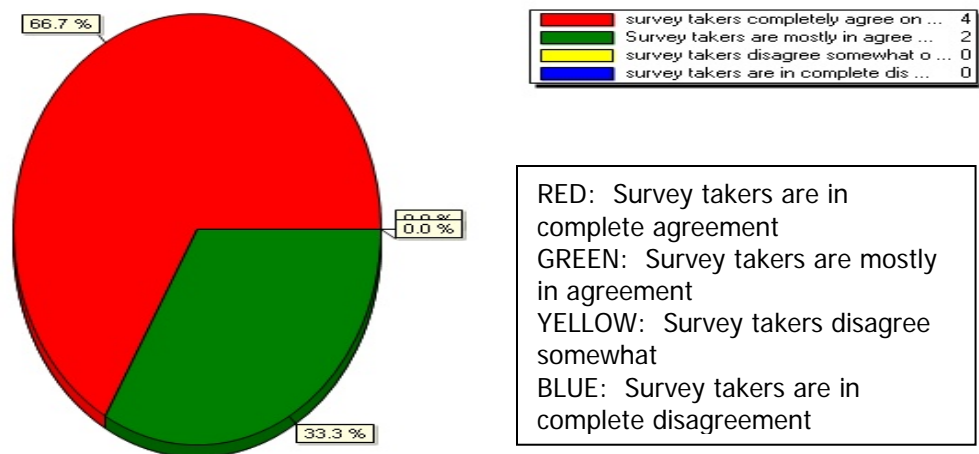
22) Is there a formal approval process required to make a design change in order to accommodate a utility? The official DOT response was:

22) Is there a formal approval process required to make a design change in order to accommodate a utility?



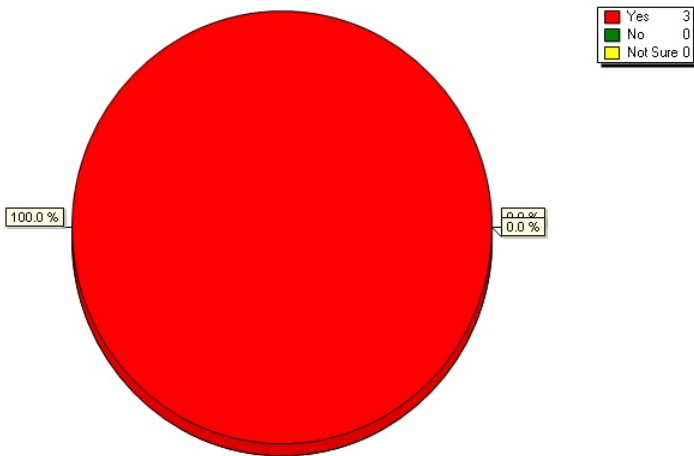
However, within the DOT there was the following diversity of opinion to the official response.

5.17) Question # 22 (This question is to be filled out only by the person responsible to collate answers)



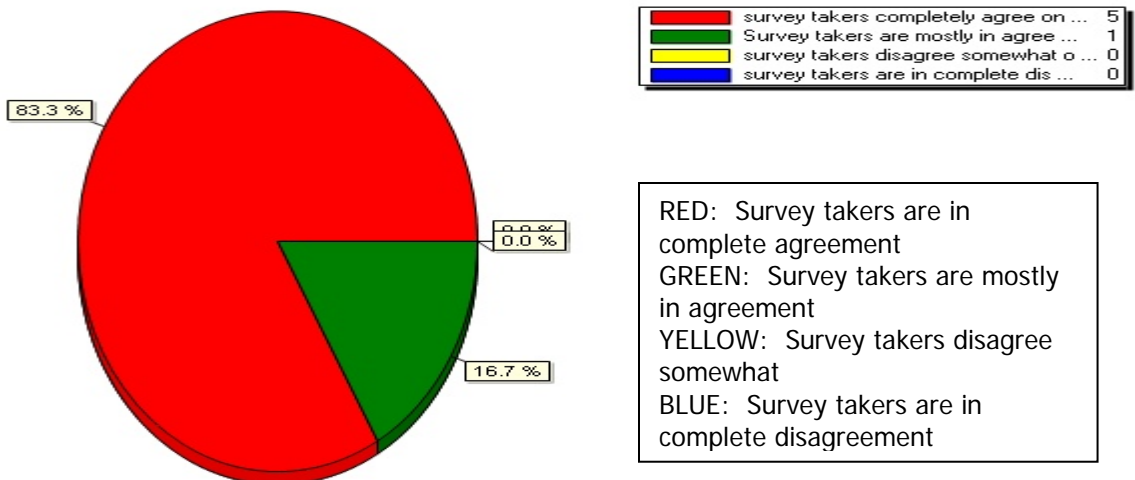
23) If Yes, is there a threshold for this approval based on cost, time, or other factors? The official DOT response was:

23) If Yes, is there a threshold for this approval based on cost, time, or other factors?



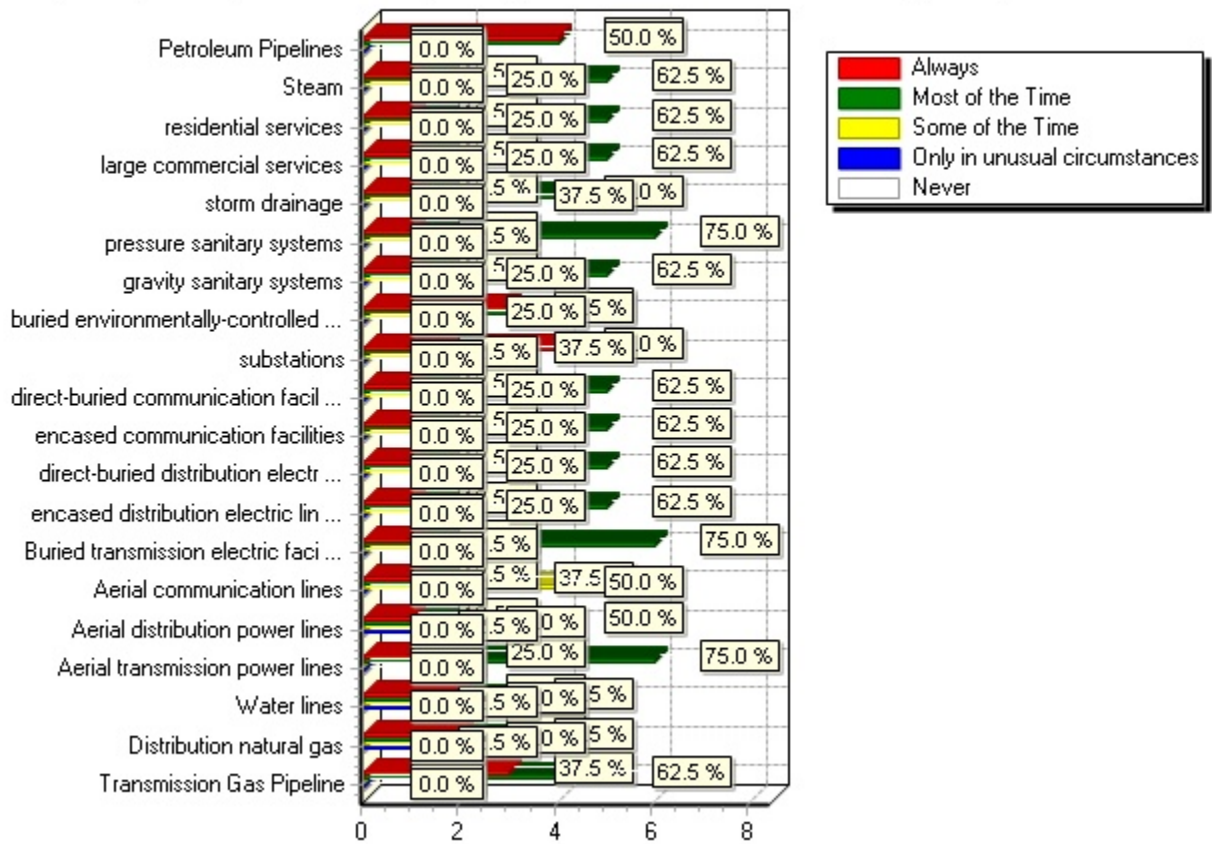
However, within the DOT there was the following diversity of opinion to the official response.

5.18) Question # 23 (This question is to be filled out only by the person responsible to collate answers)



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:

24) Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?

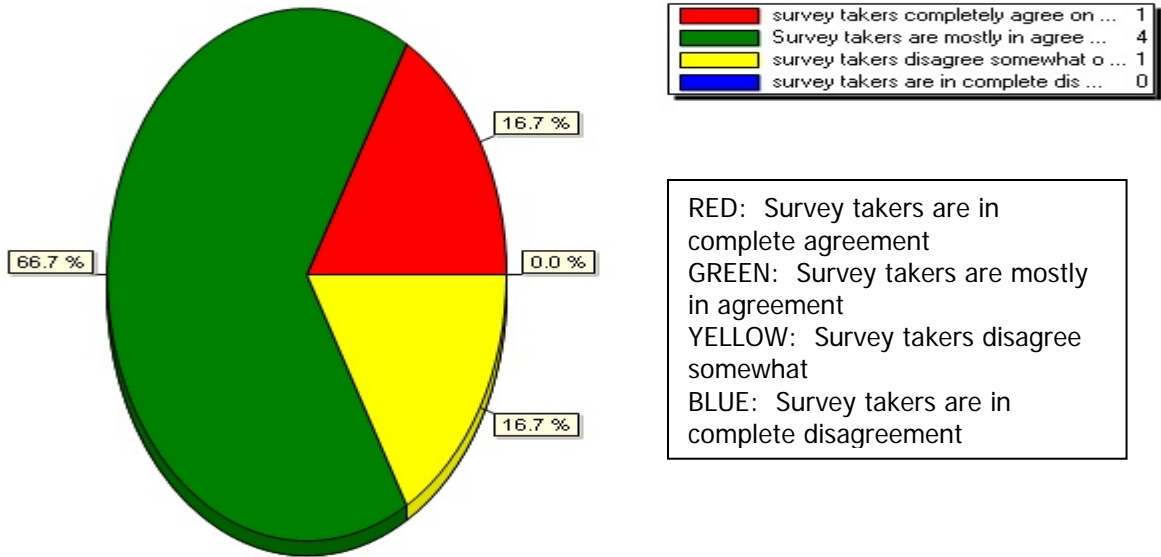


Comment Responses:

Functional Planning reviews utility issu

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

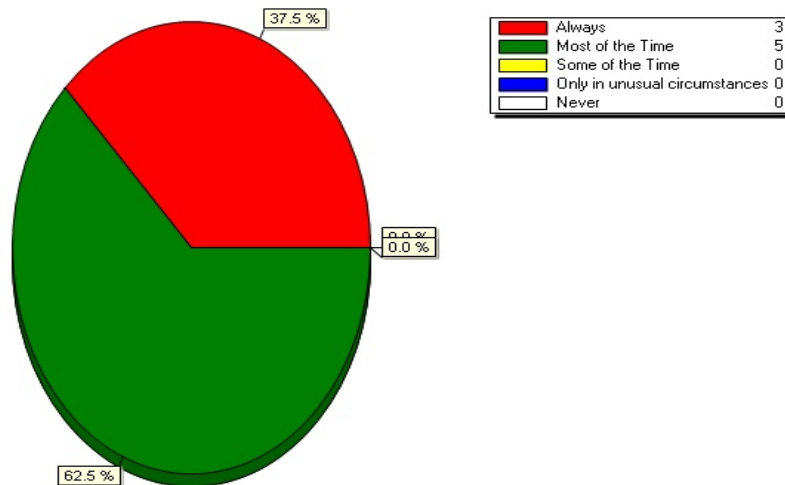
5.19) Question # 24(This question is to be filled out only by the person responsible to collate answ



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

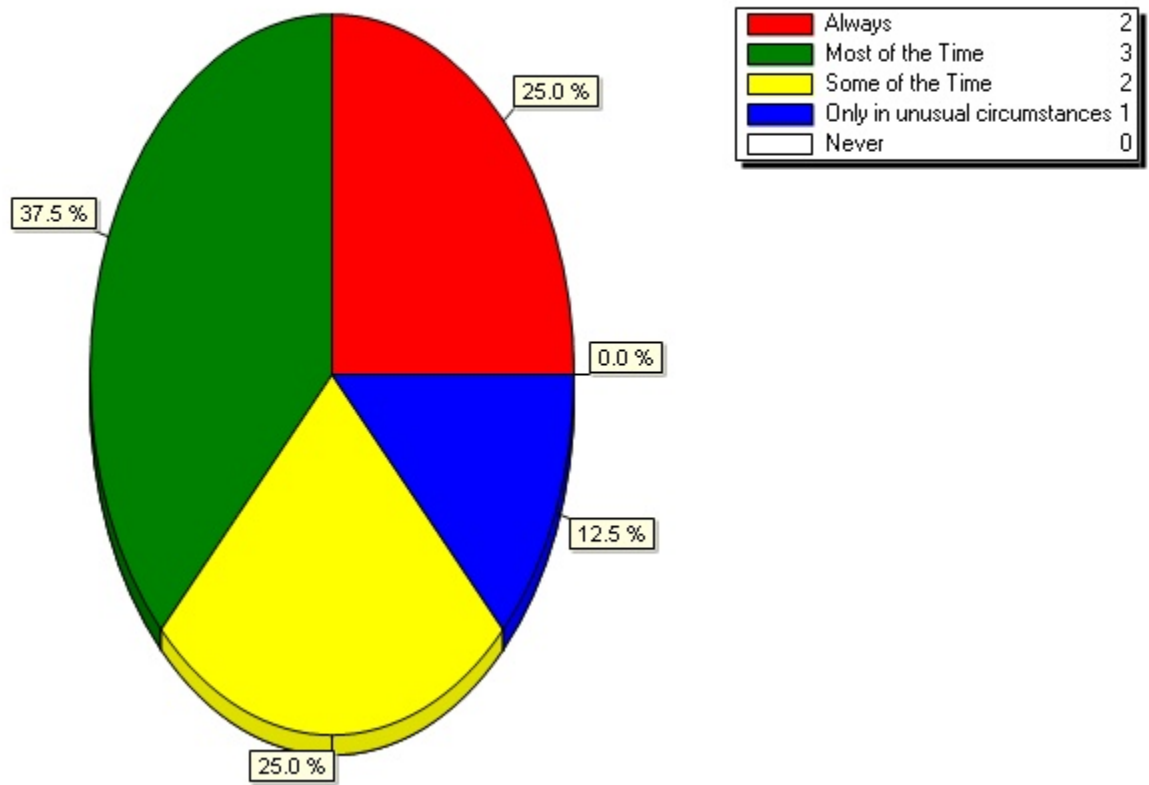
24.1) Transmission Gas Pipeline (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.1) Transmission Gas Pipeline (Would you consider a design change in order to accommodate the follo



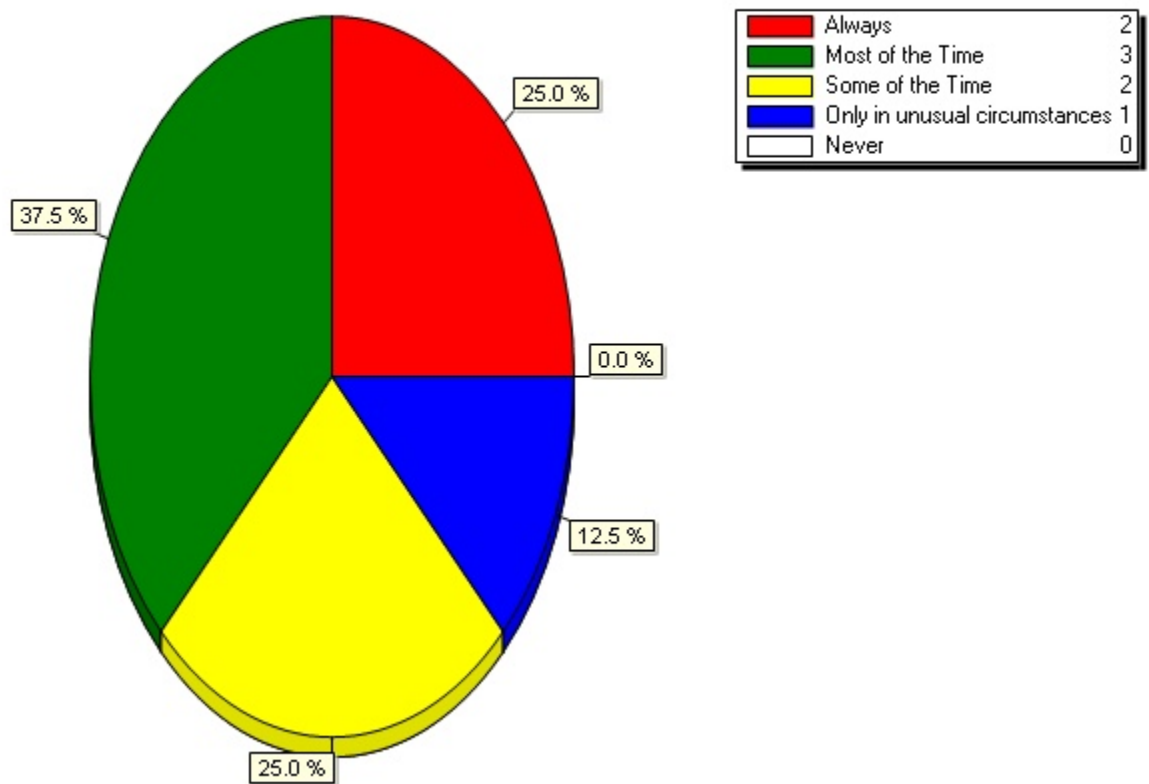
24.2) Distribution natural gas(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.2) 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?)



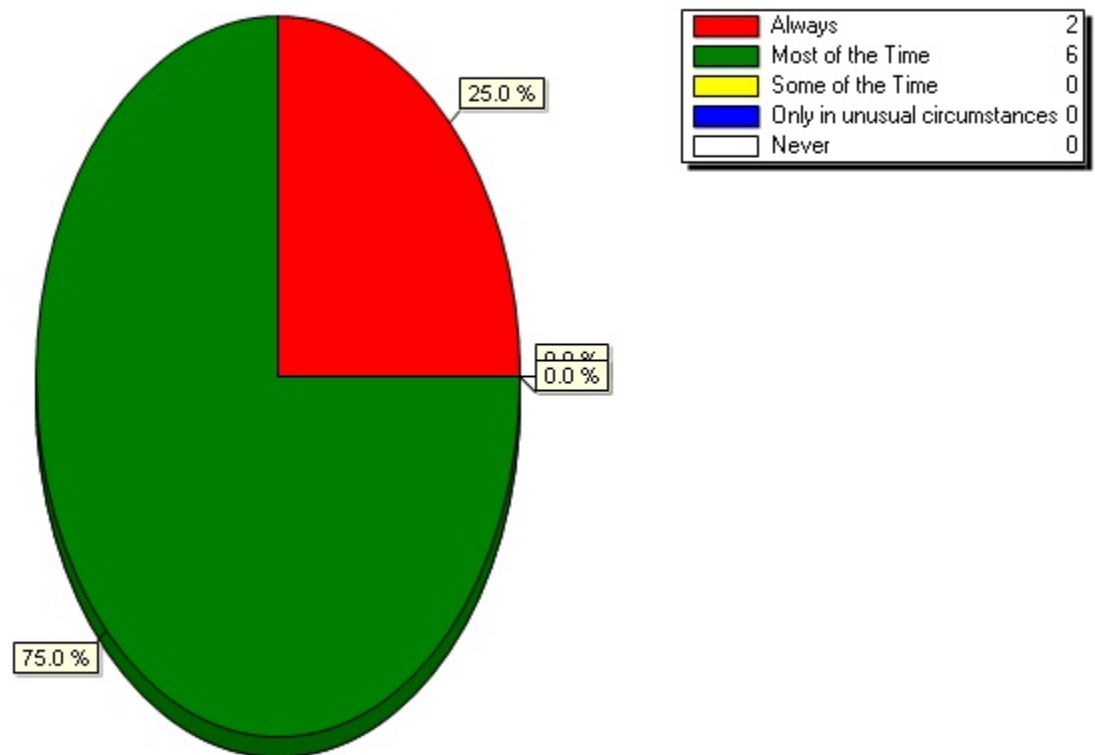
24.3) Water lines(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

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



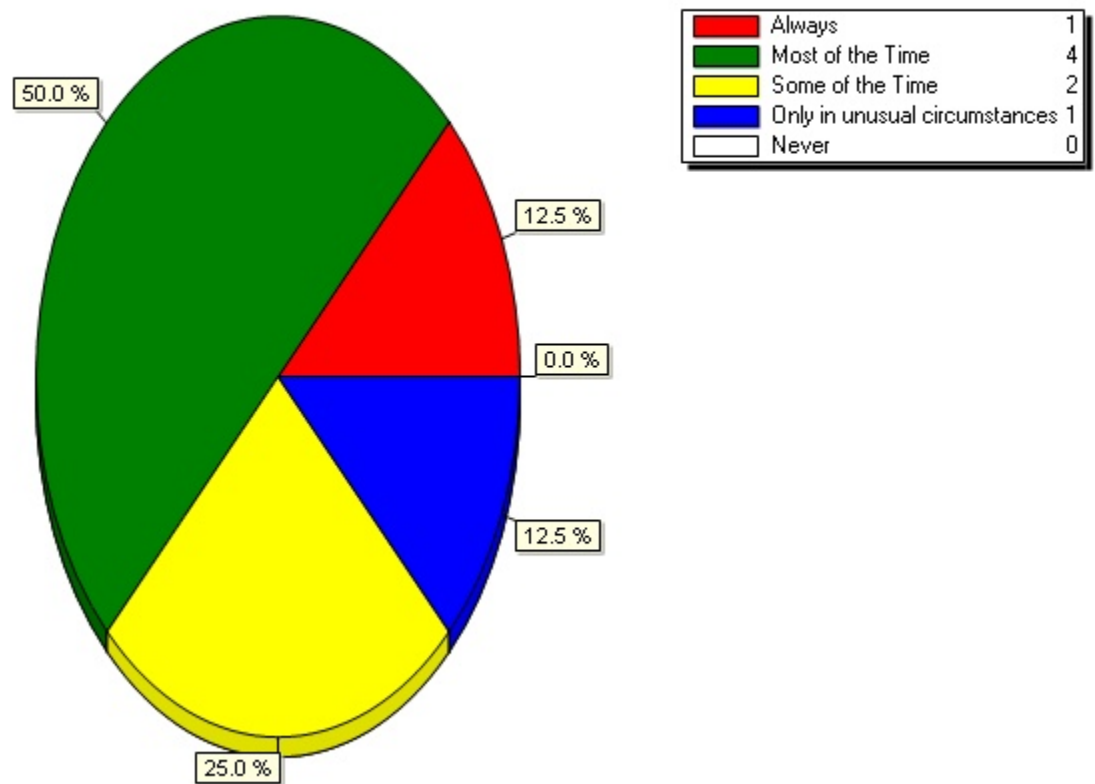
24.4) Aerial transmission power lines(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.4) Aerial transmission power lines(Would you consider a design change in order to accommodate the



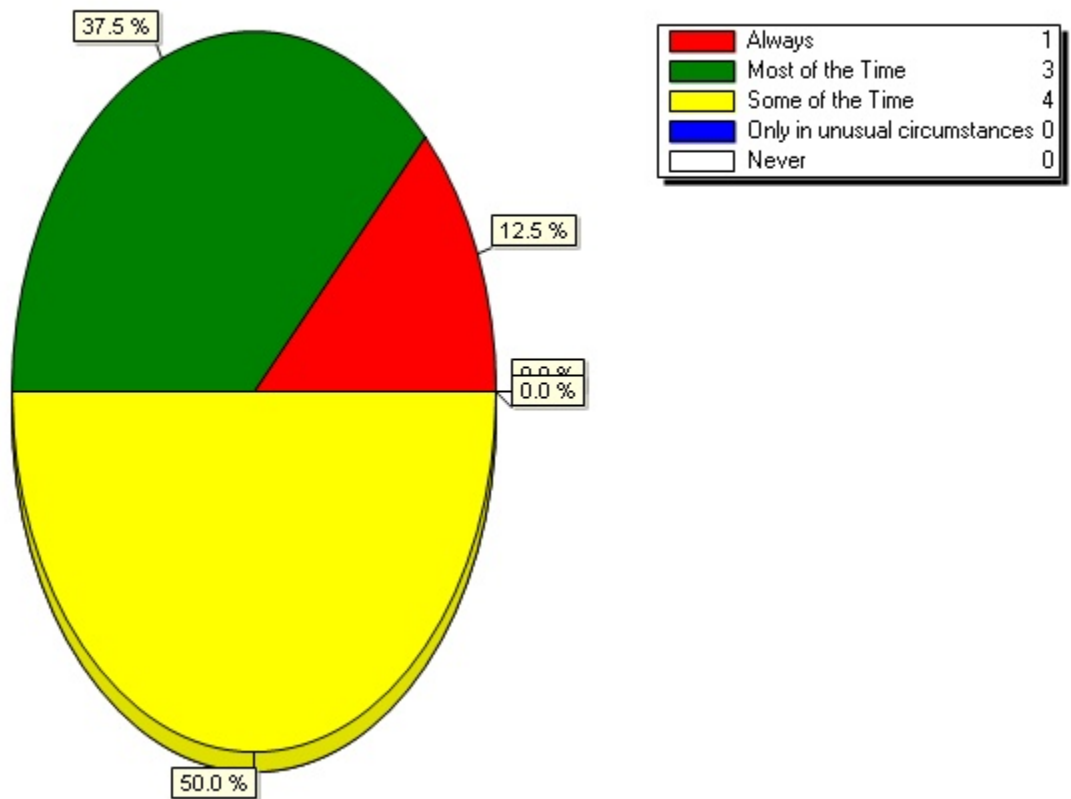
24.5) Aerial distribution power lines(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.5) Aerial distribution power lines(Would you consider a design change in order to accommodate the



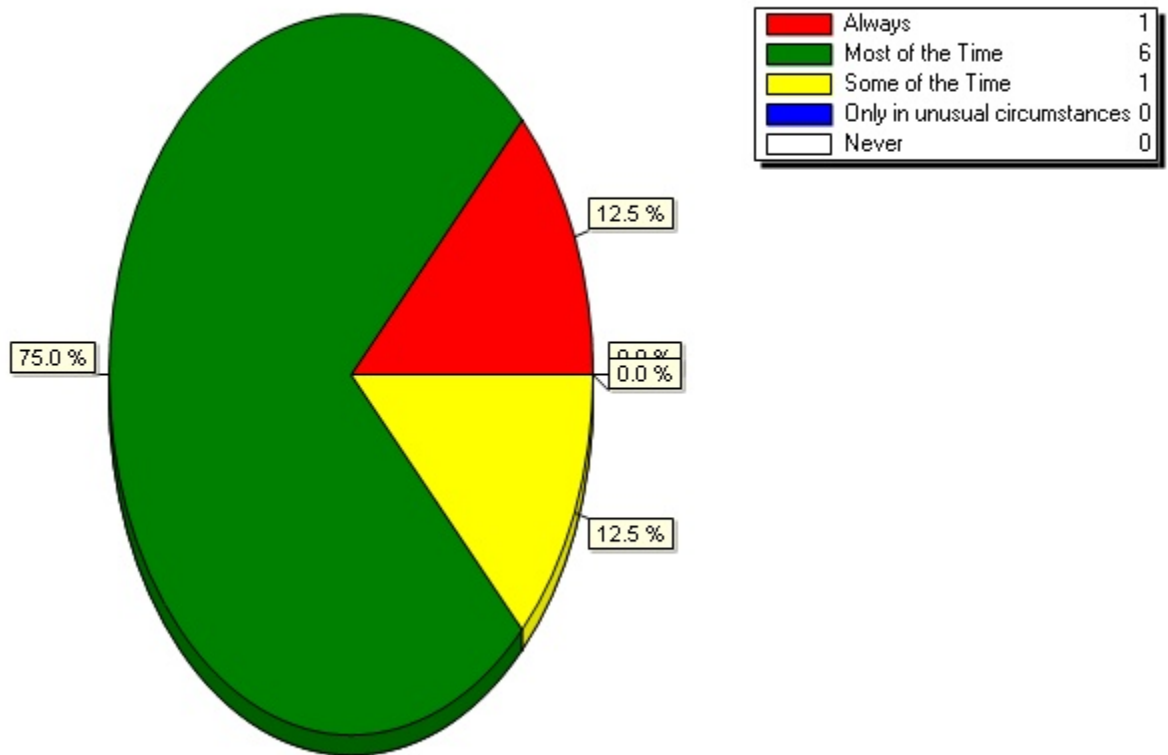
24.6) Aerial communication lines (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.6) 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?)



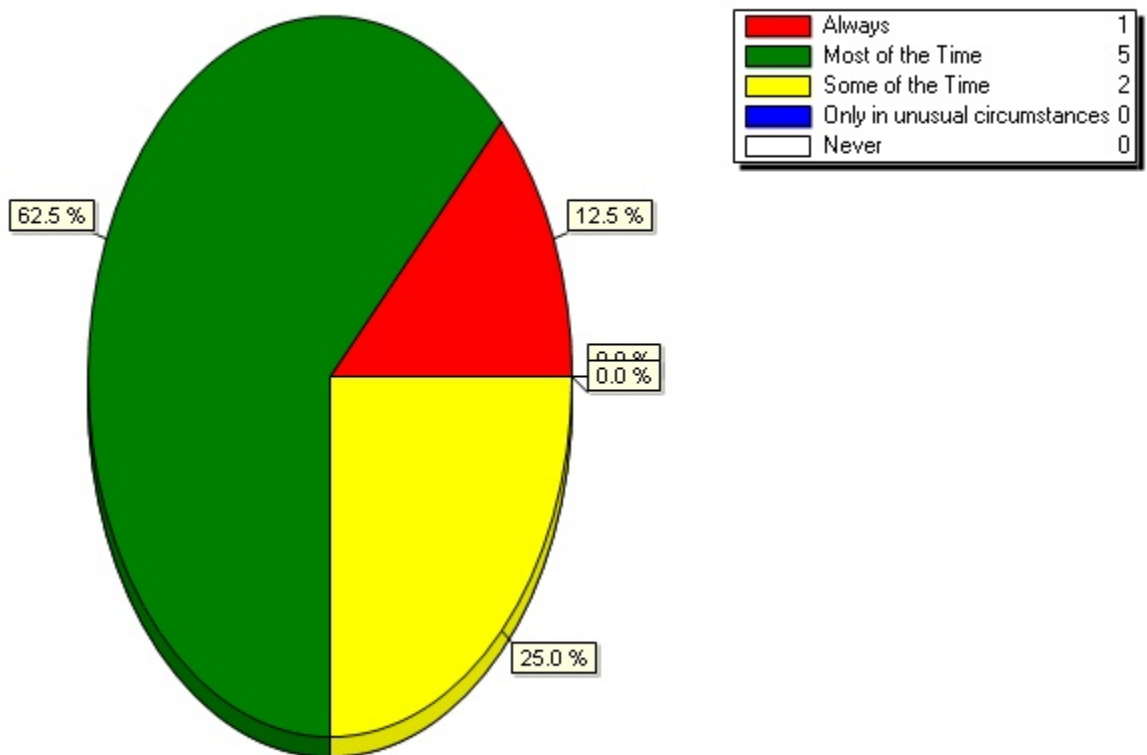
24.7) Buried transmission electric facilities(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.7) Buried transmission electric facilities(Would you consider a design change in order to accommod



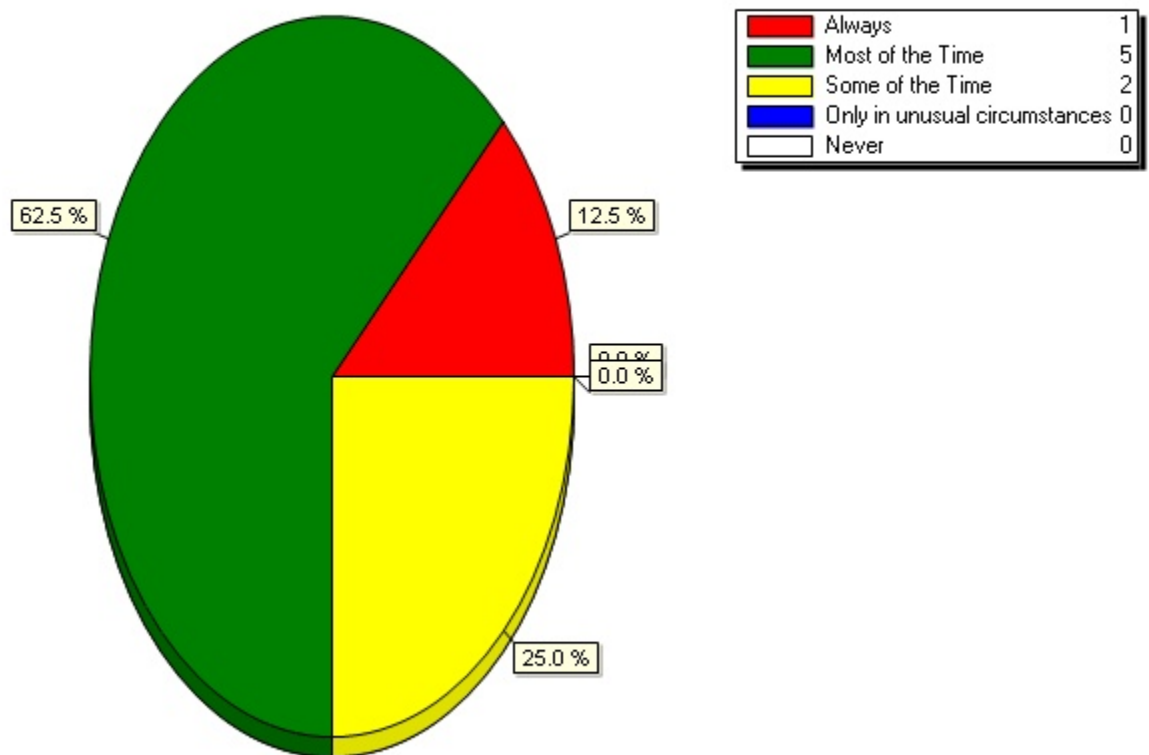
24.8) encased distribution electric lines(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.8) encased distribution electric lines(Would you consider a design change in order to accommodate



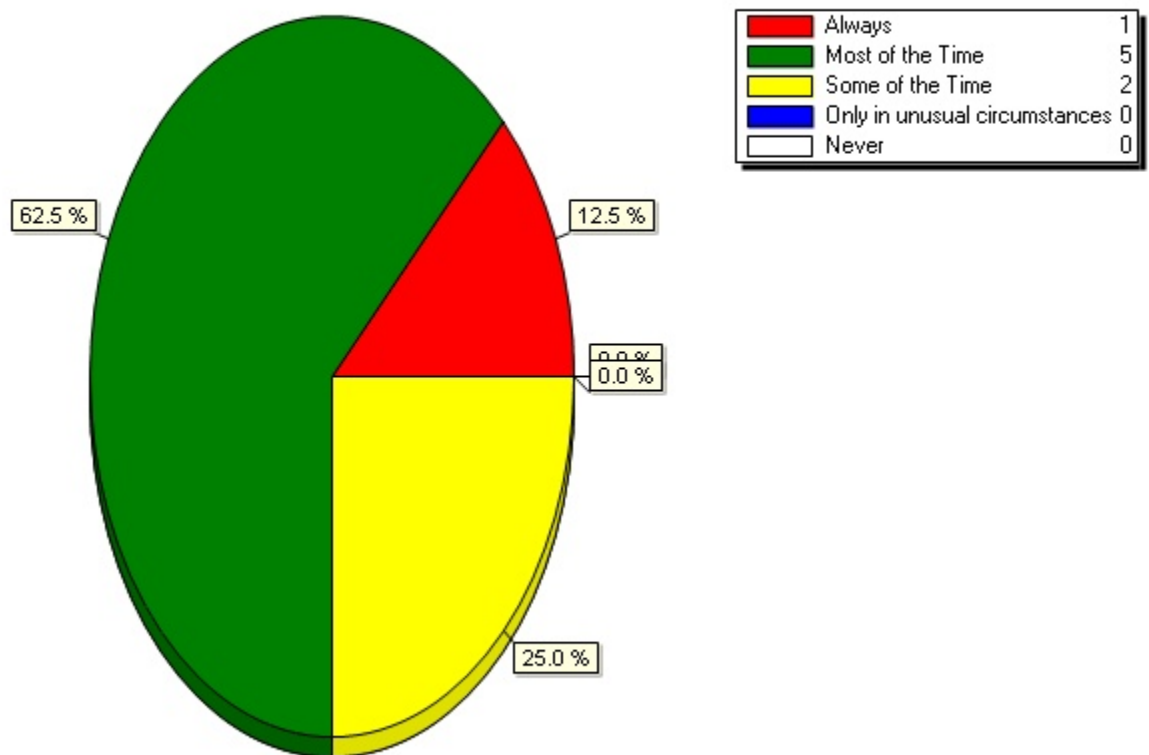
24.9) direct-buried distribution electric lines(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.9) direct-buried distribution electric lines(Would you consider a design change in order to accomm



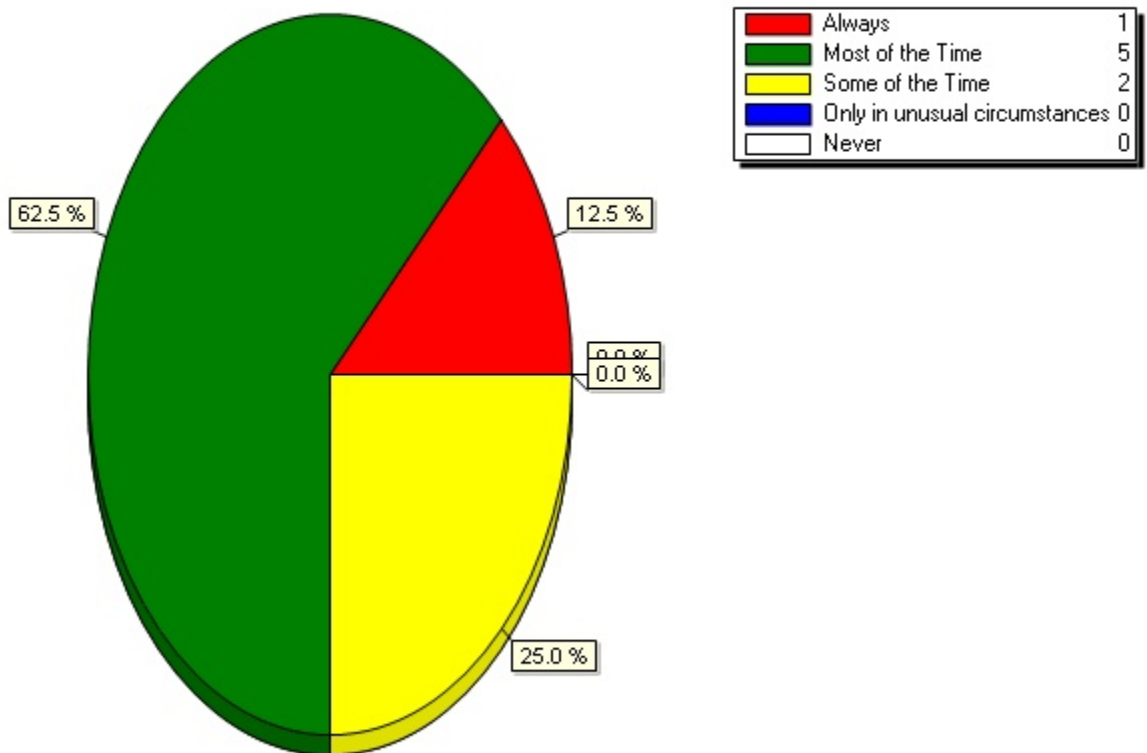
24.10) encased communication facilities(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.10) encased communication facilities(Would you consider a design change in order to accommodate th



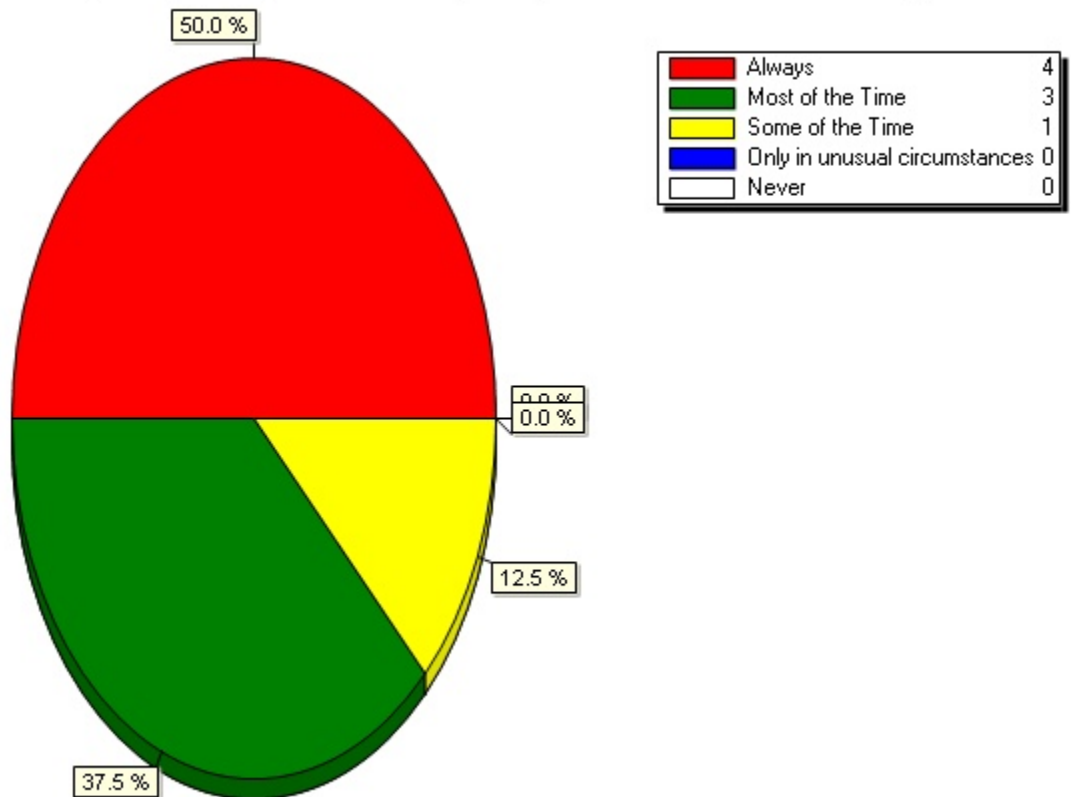
24.11) direct-buried communication facilities(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.11) direct-buried communication facilities(Would you consider a design change in order to accomod



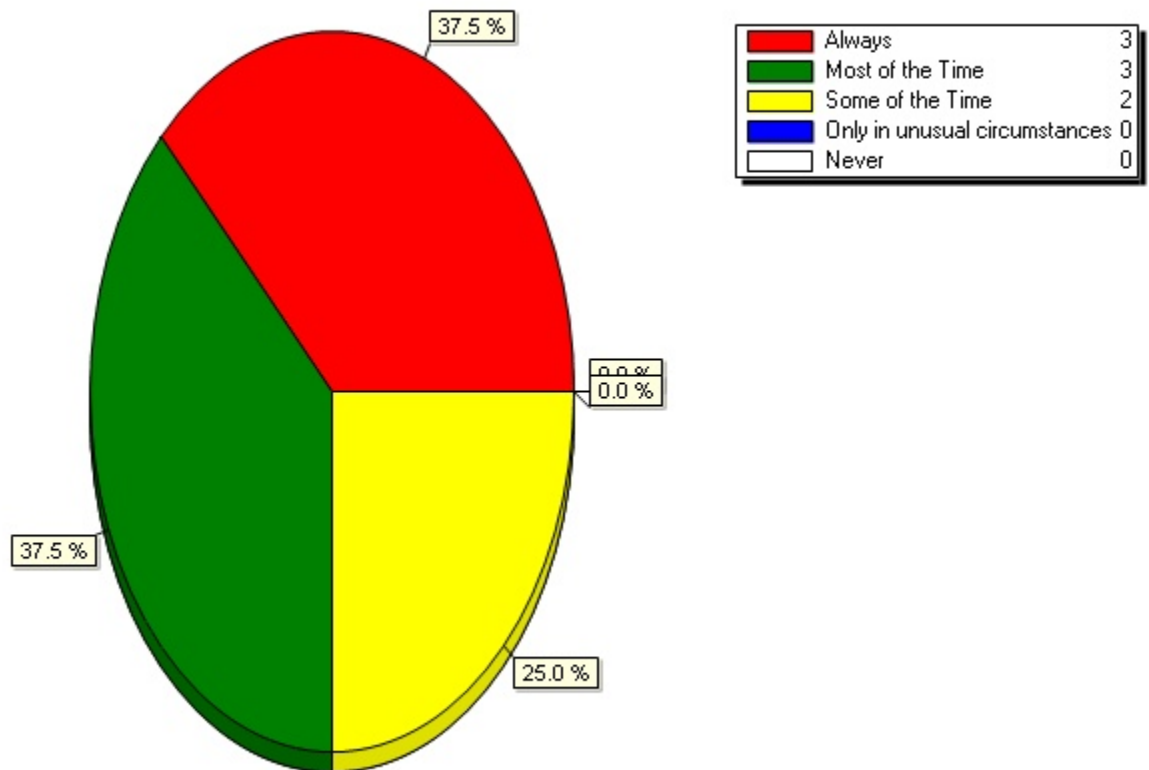
24.12) substations(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.12) substations(Would you consider a design change in order to accommodate the following utilities



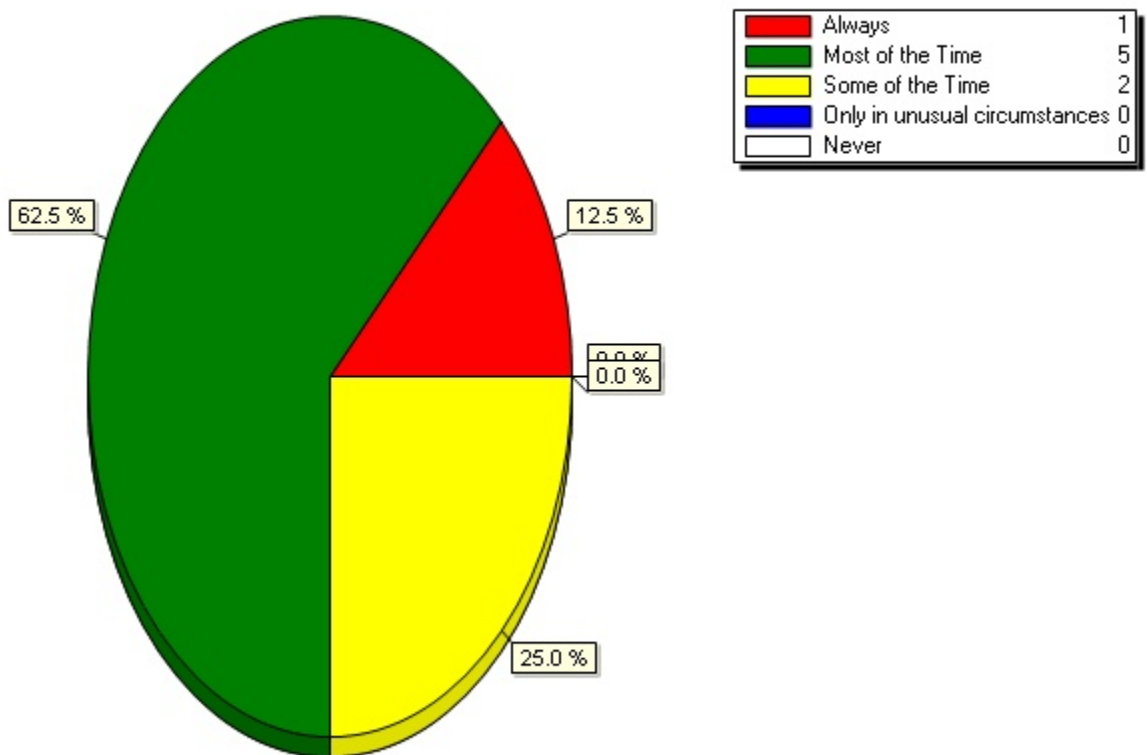
24.13) buried environmentally-controlled vaults(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.13) buried environmentally-controlled vaults(Would you consider a design change in order to accomm



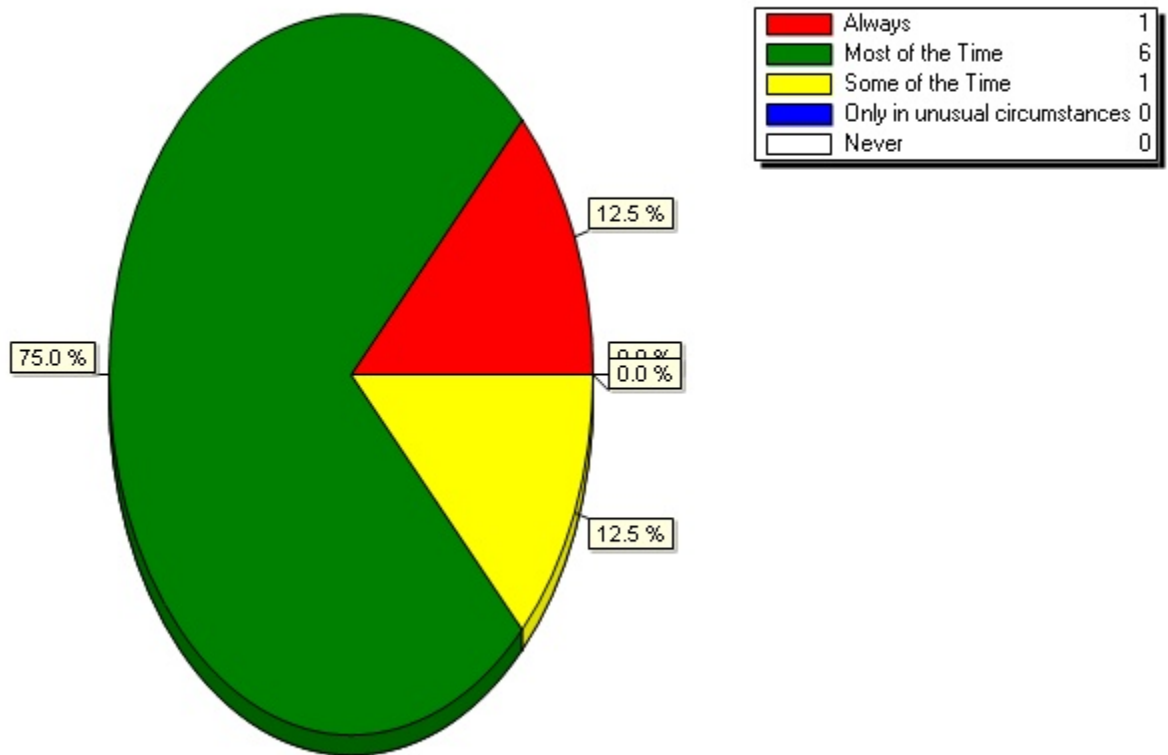
24.14) gravity sanitary systems(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

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



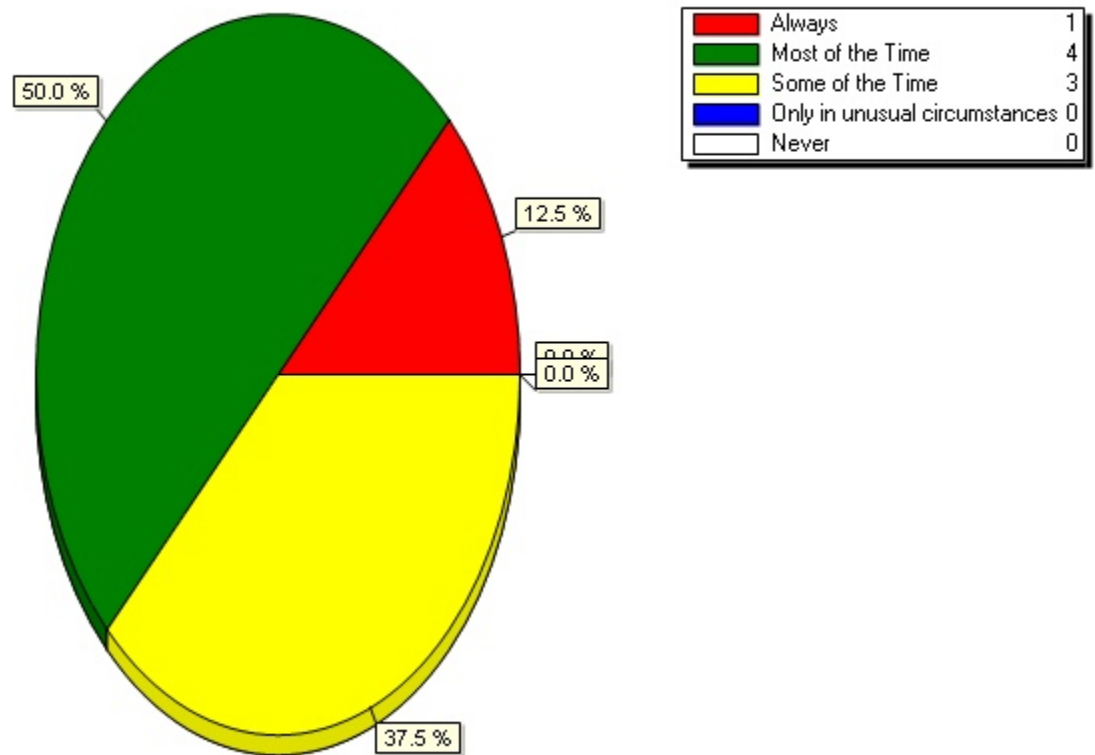
24.15) pressure sanitary systems(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.15) pressure sanitary systems(Would you consider a design change in order to accommodate the follo



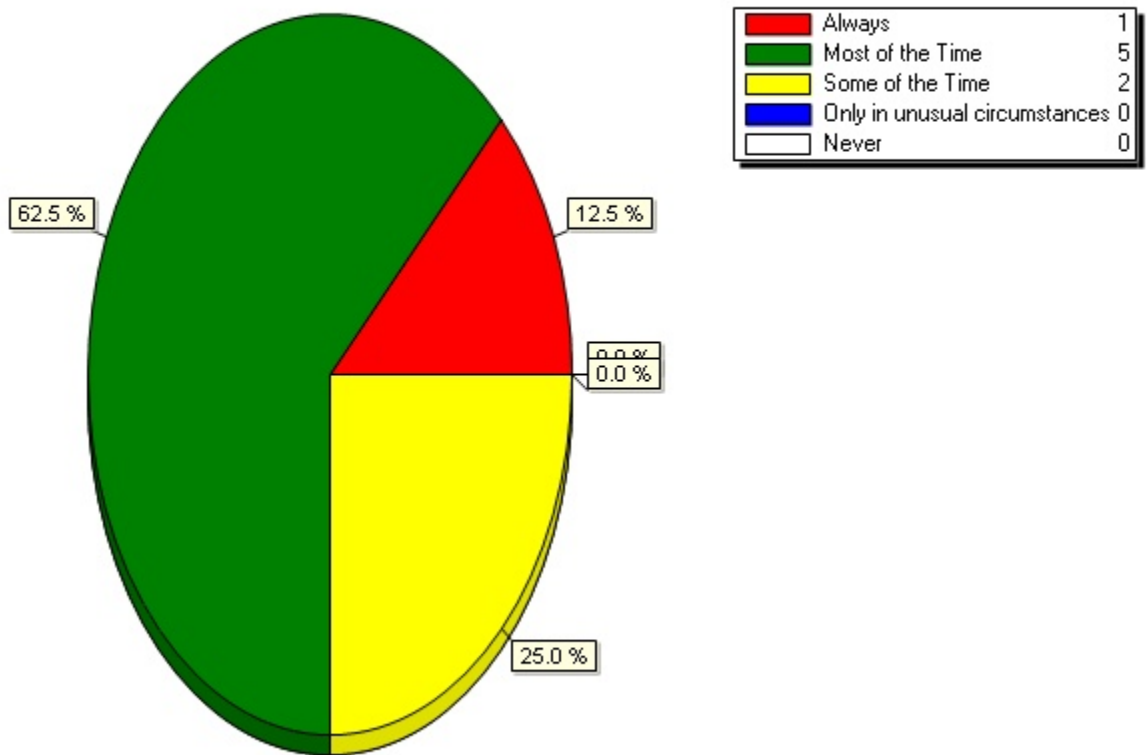
24.16) storm drainage(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.16) storm drainage(Would you consider a design change in order to accommodate the following utilities



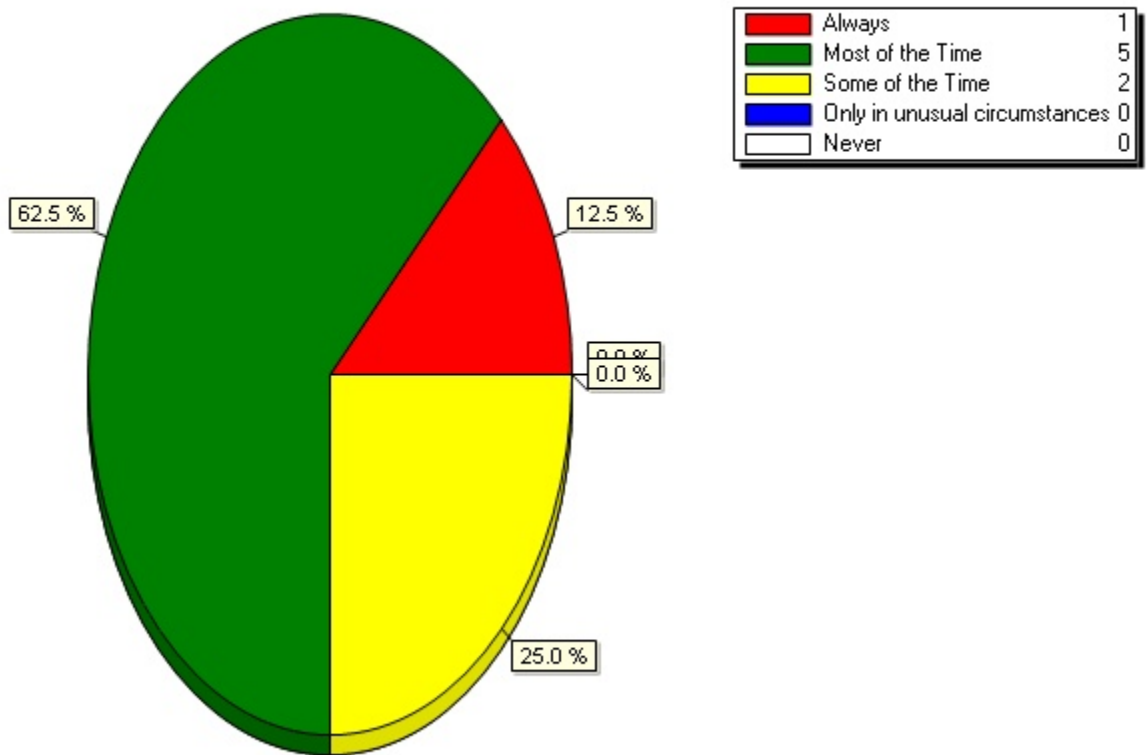
24.17) large commercial services(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.17) 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?)



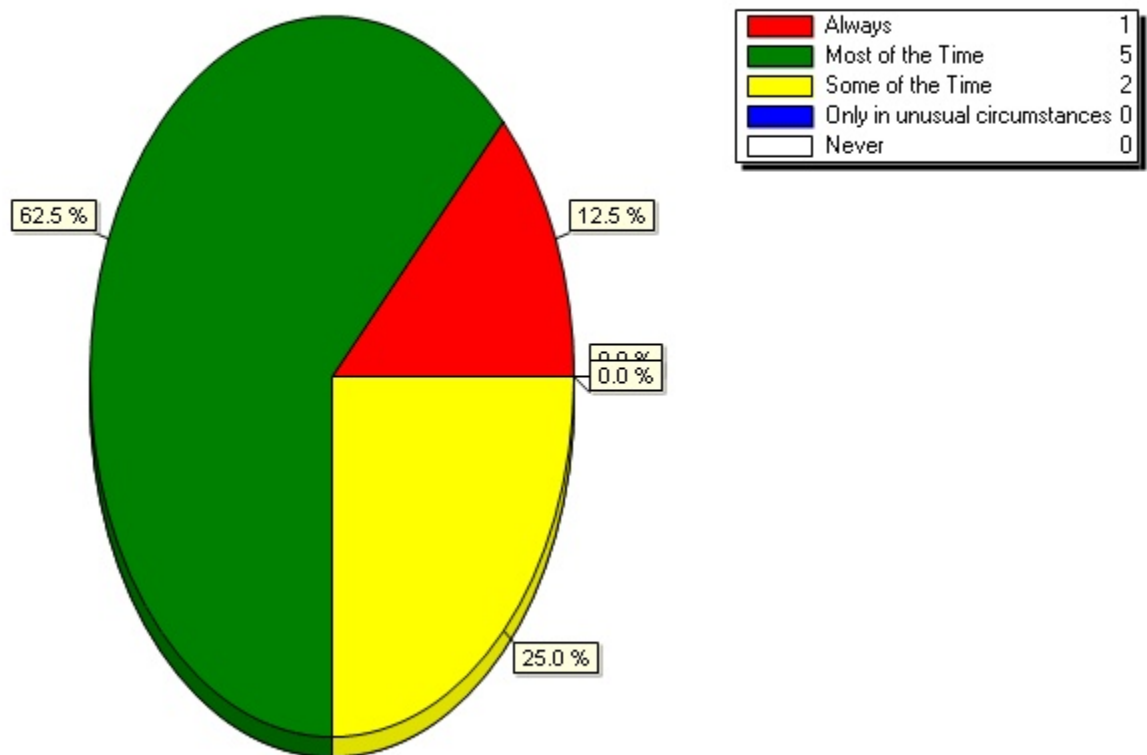
24.18) residential services(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.18) residential services(Would you consider a design change in order to accommodate the following



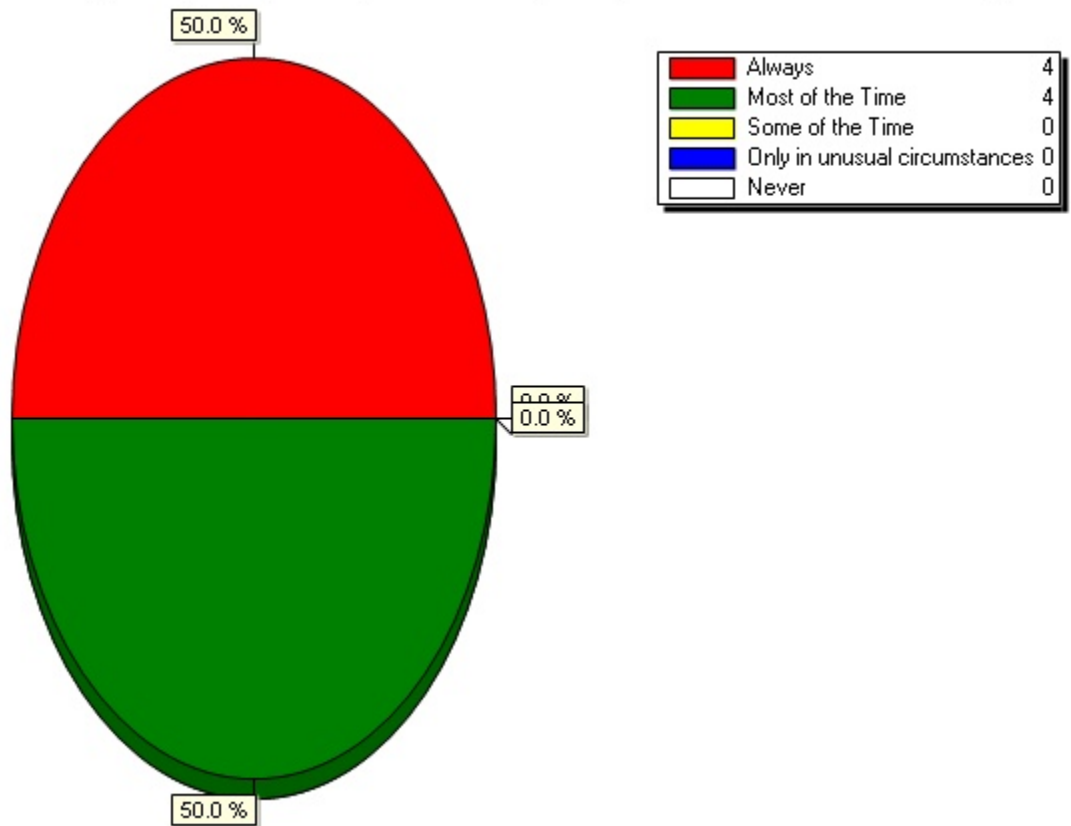
24.19) Steam (Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.19) Steam (Would you consider a design change in order to accommodate the following utilities (in t



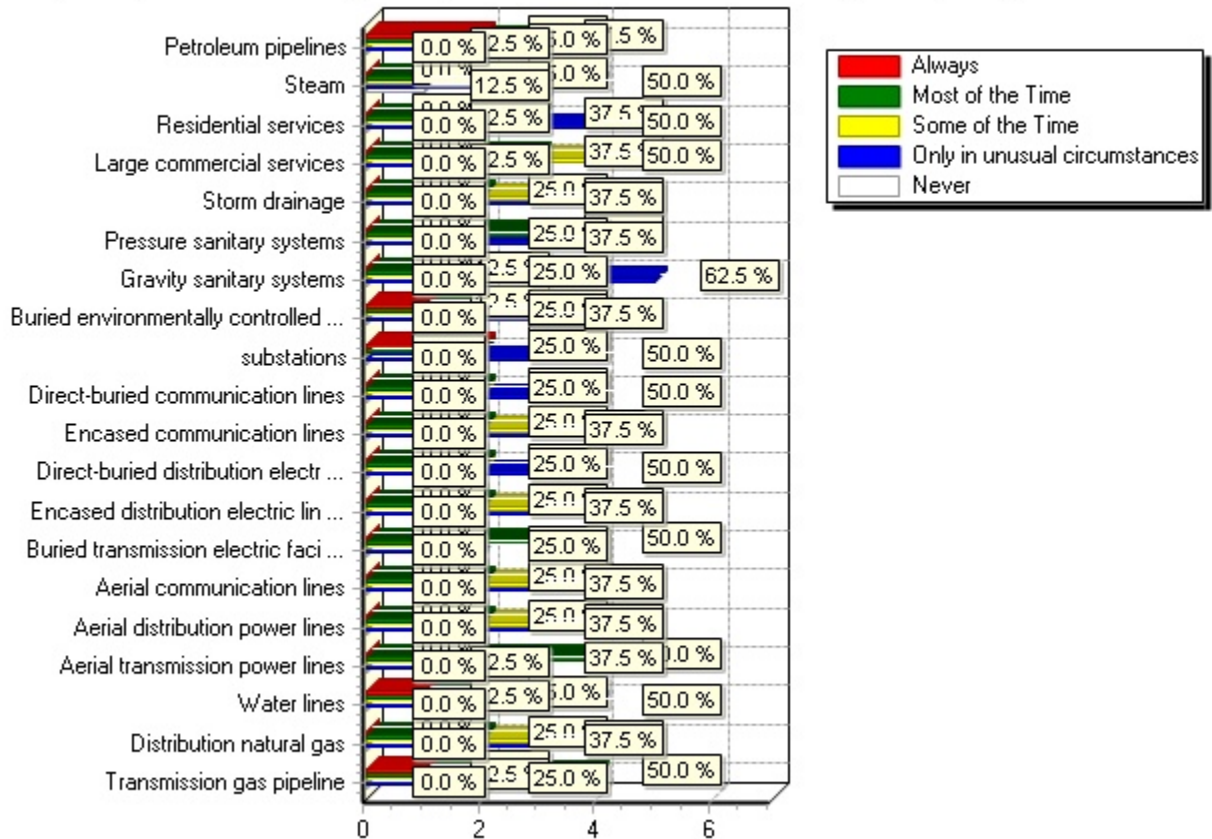
24.20) Petroleum Pipelines(Would you consider a design change in order to accommodate the following utilities (in their own easements) in conflict with the highway design?)

24.20) Petroleum Pipelines(Would you consider a design change in order to accommodate the following u



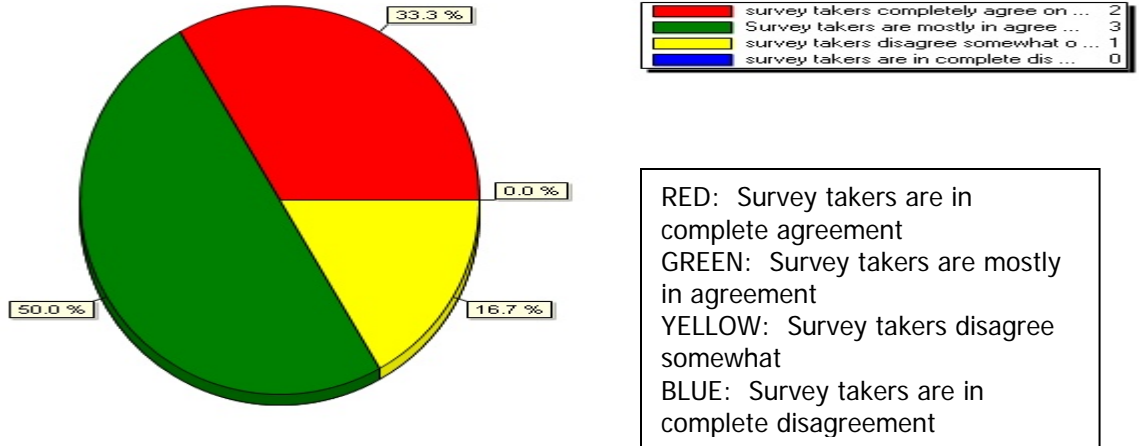
25) Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design? The official DOT response was:

25) Would you consider a design change in order to accommodate the following utilities (in the right of wa



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

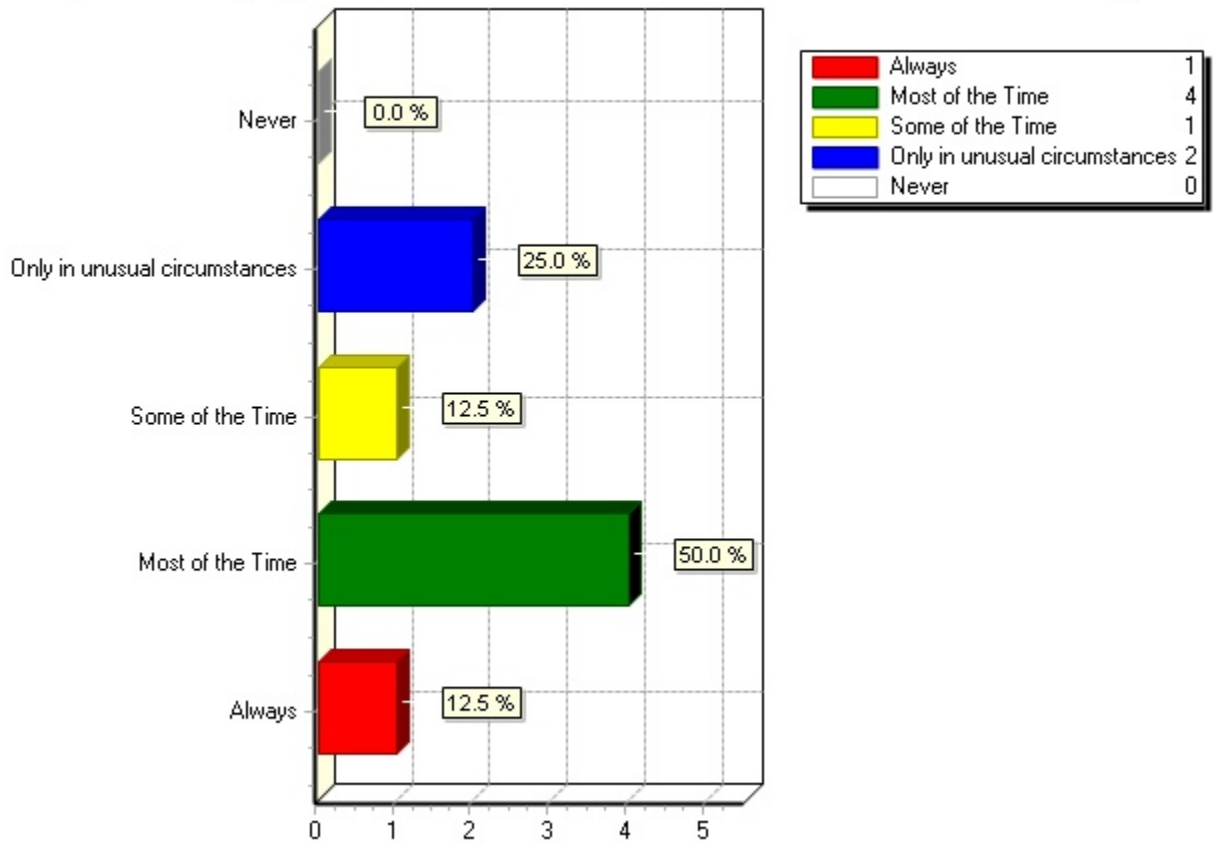
5.20) Question # 25(This question is to be filled out only by the person responsible to collate answ



Here is the detailed response for each question asked in # 25.

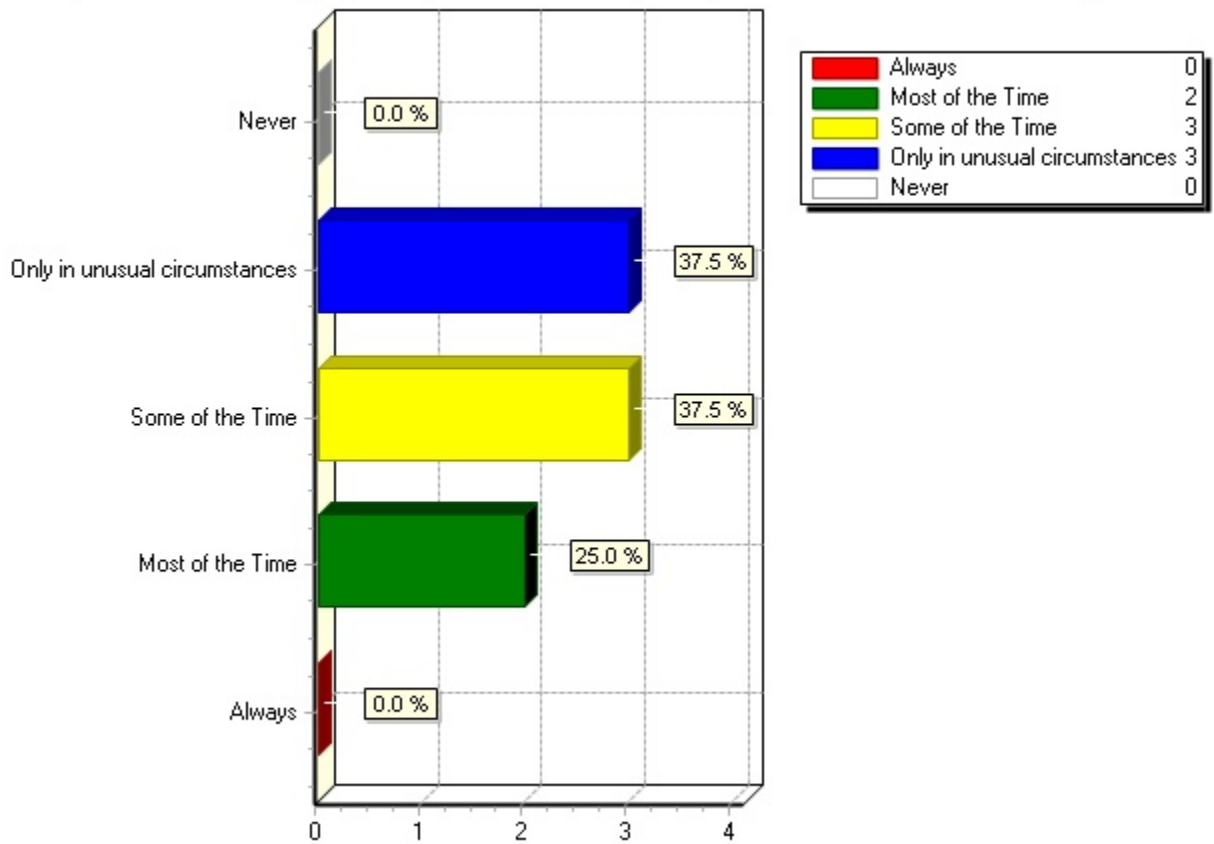
25.1) Transmission gas pipeline(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.1) Transmission gas pipeline(Would you consider a design change in order to accommodate the following u



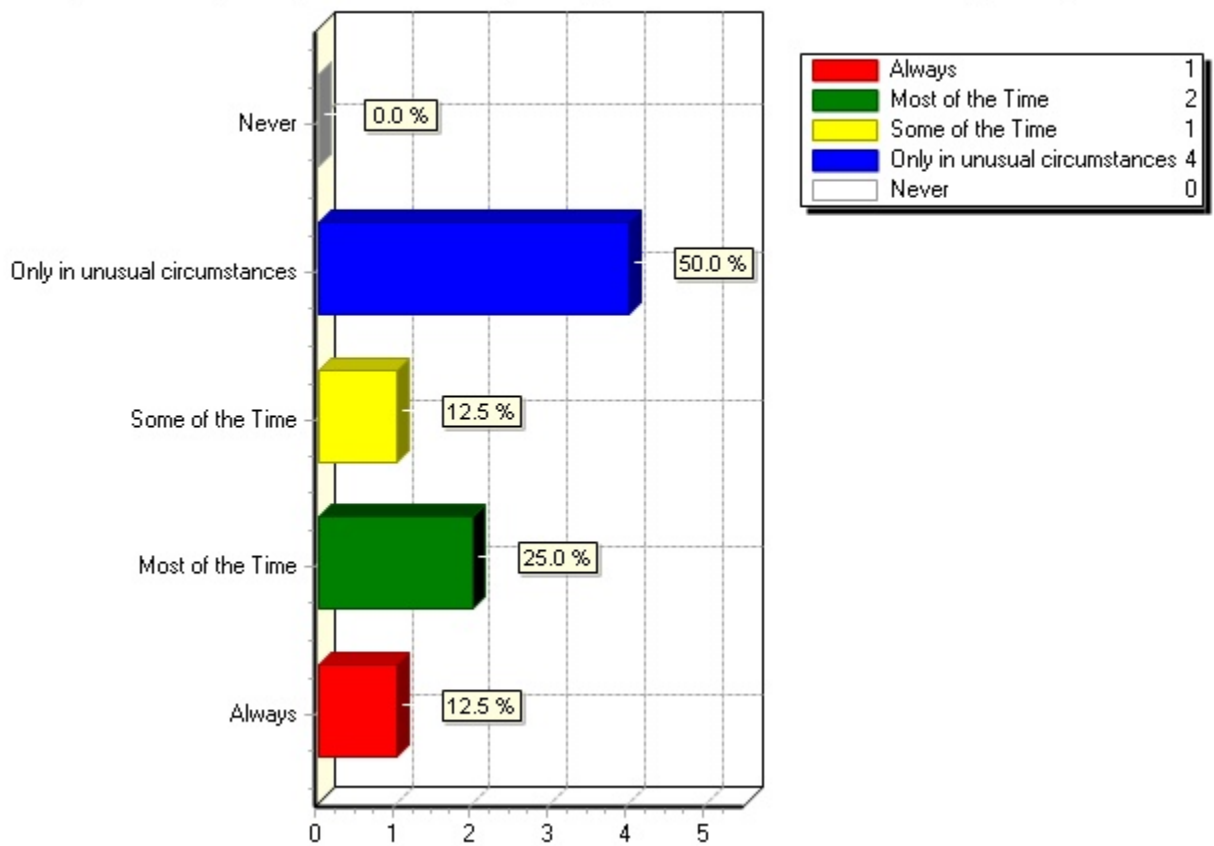
25.2) Distribution natural gas(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.2) Distribution natural gas(Would you consider a design change in order to accommodate the following ut



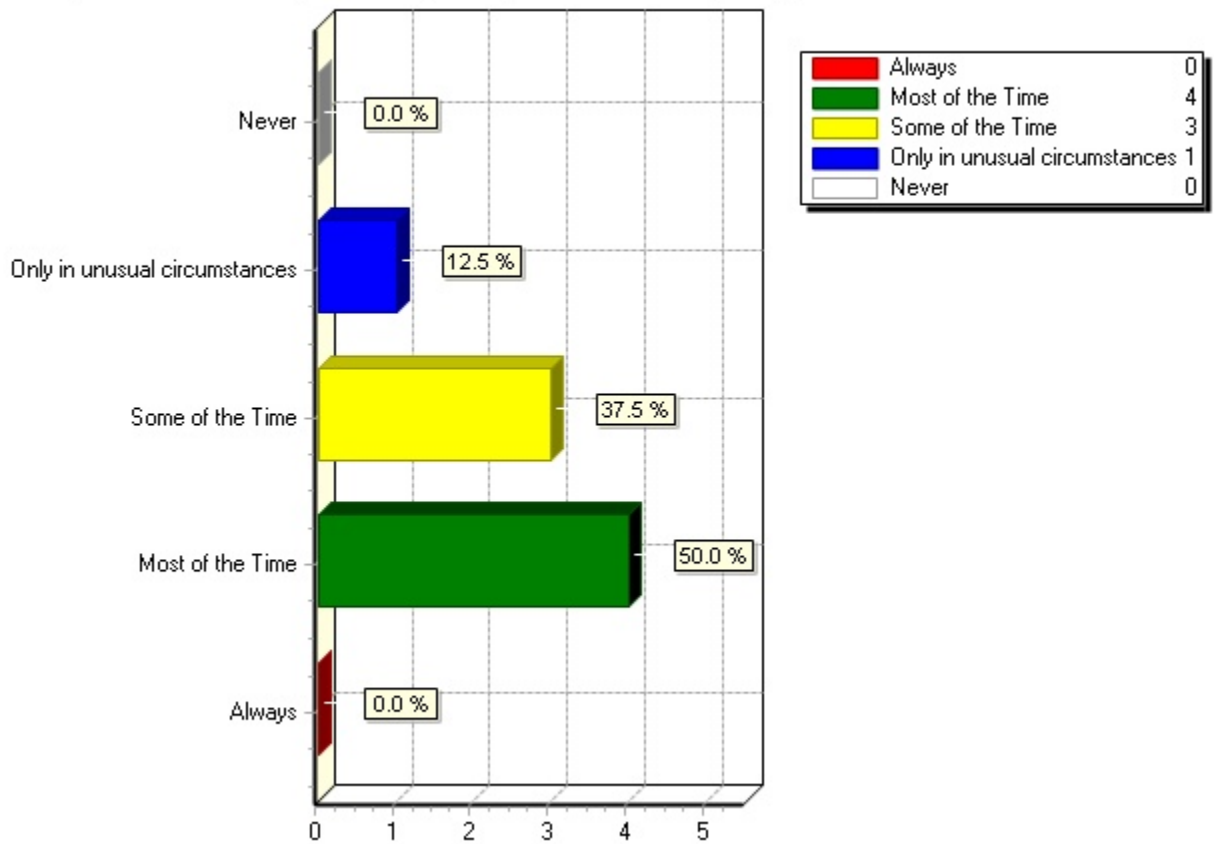
25.3) Water lines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

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



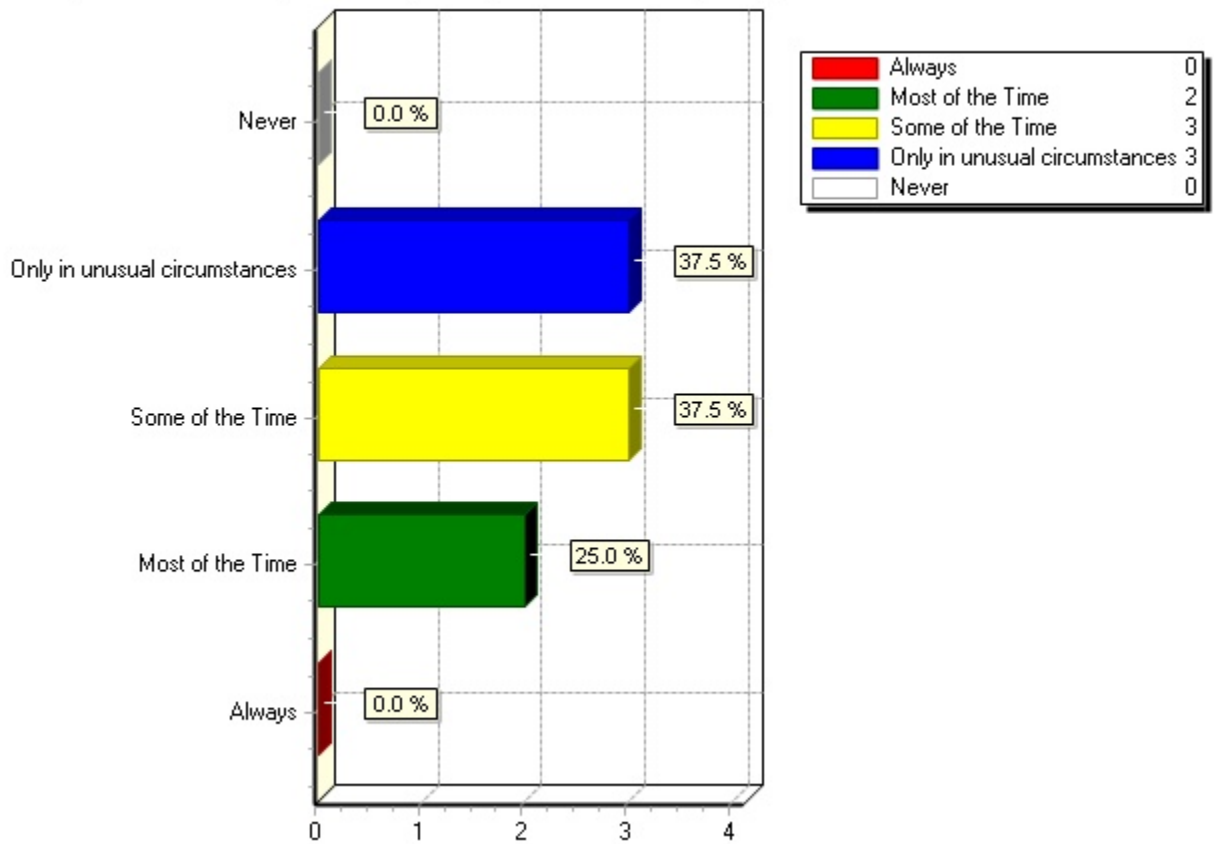
25.4) Aerial transmission power lines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.4) Aerial transmission power lines(Would you consider a design change in order to accommodate the follo



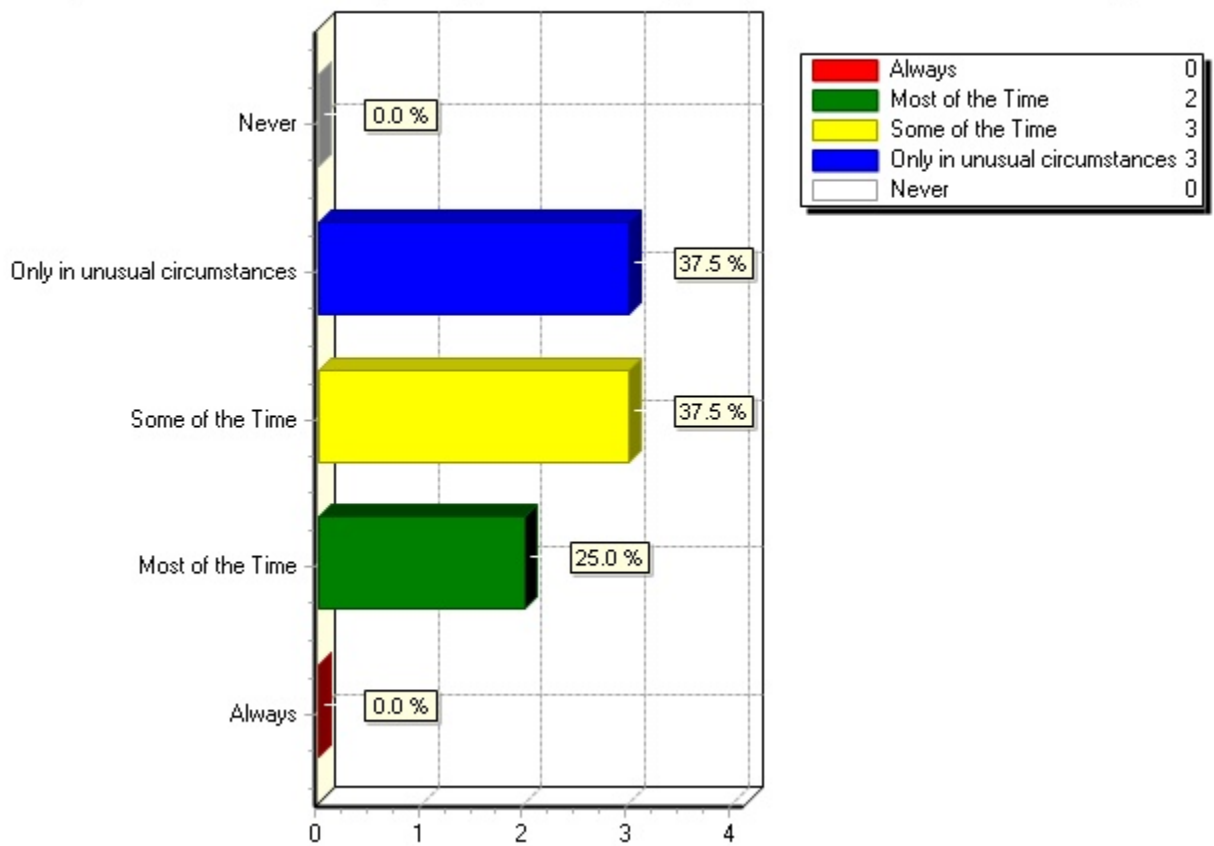
25.5) Aerial distribution power lines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.5) Aerial distribution power lines(Would you consider a design change in order to accommodate the follo



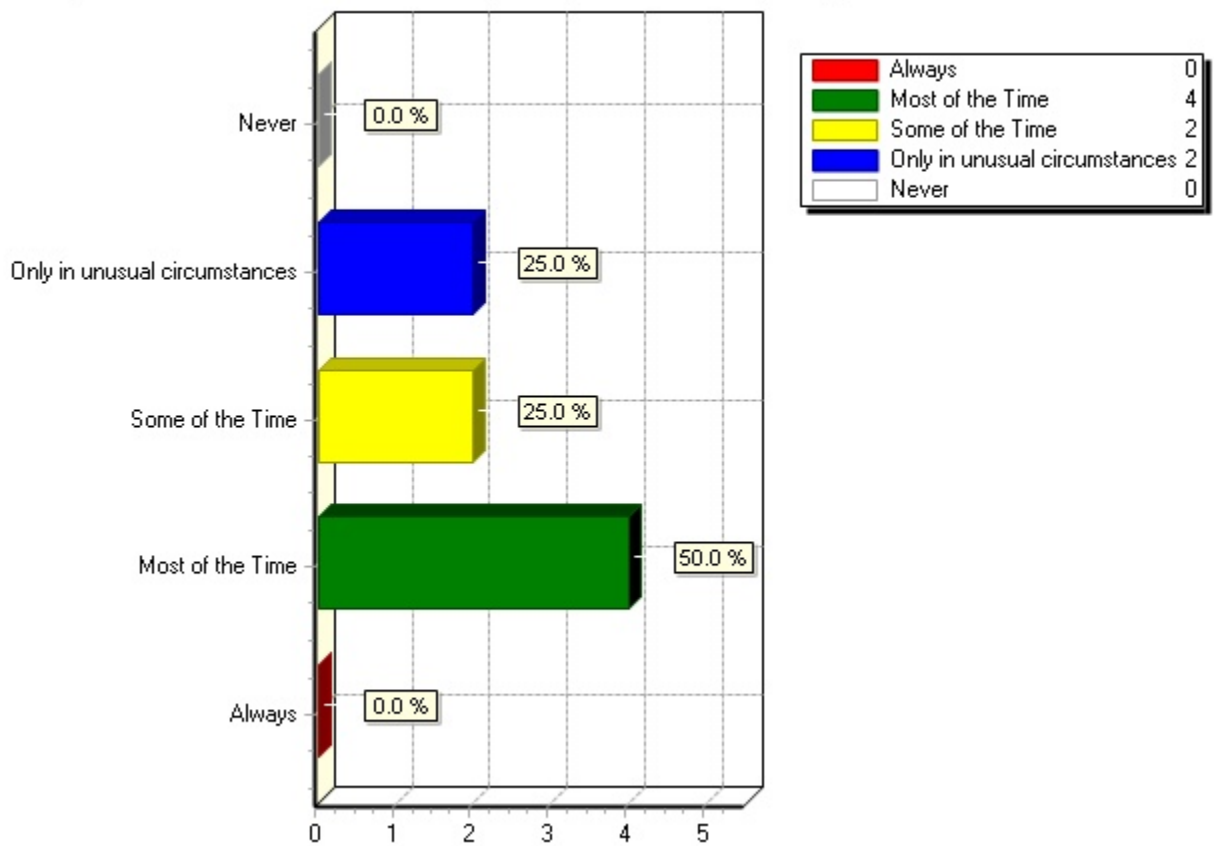
25.6) Aerial communication lines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.6) Aerial communication lines(Would you consider a design change in order to accommodate the following



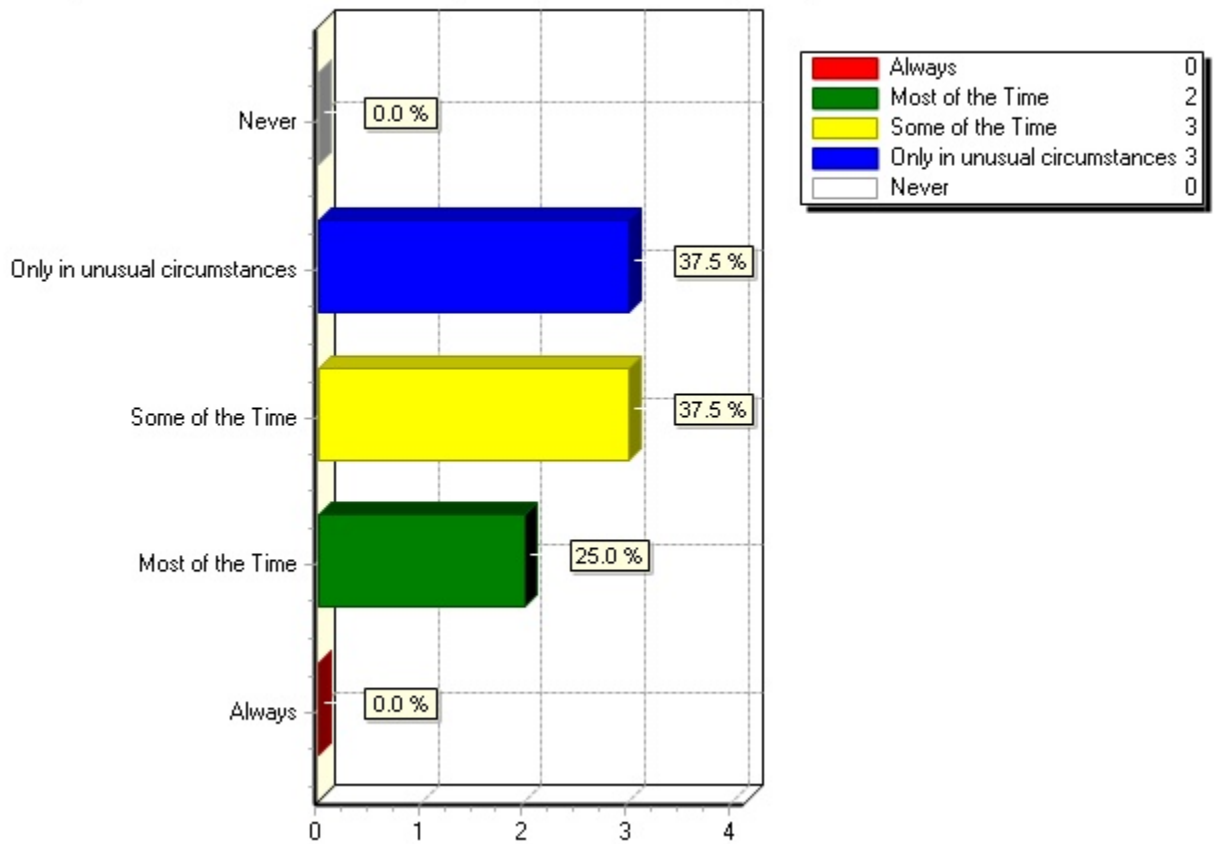
25.7) Buried transmission electric facilities(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.7) Buried transmission electric facilities(Would you consider a design change in order to accommodate t



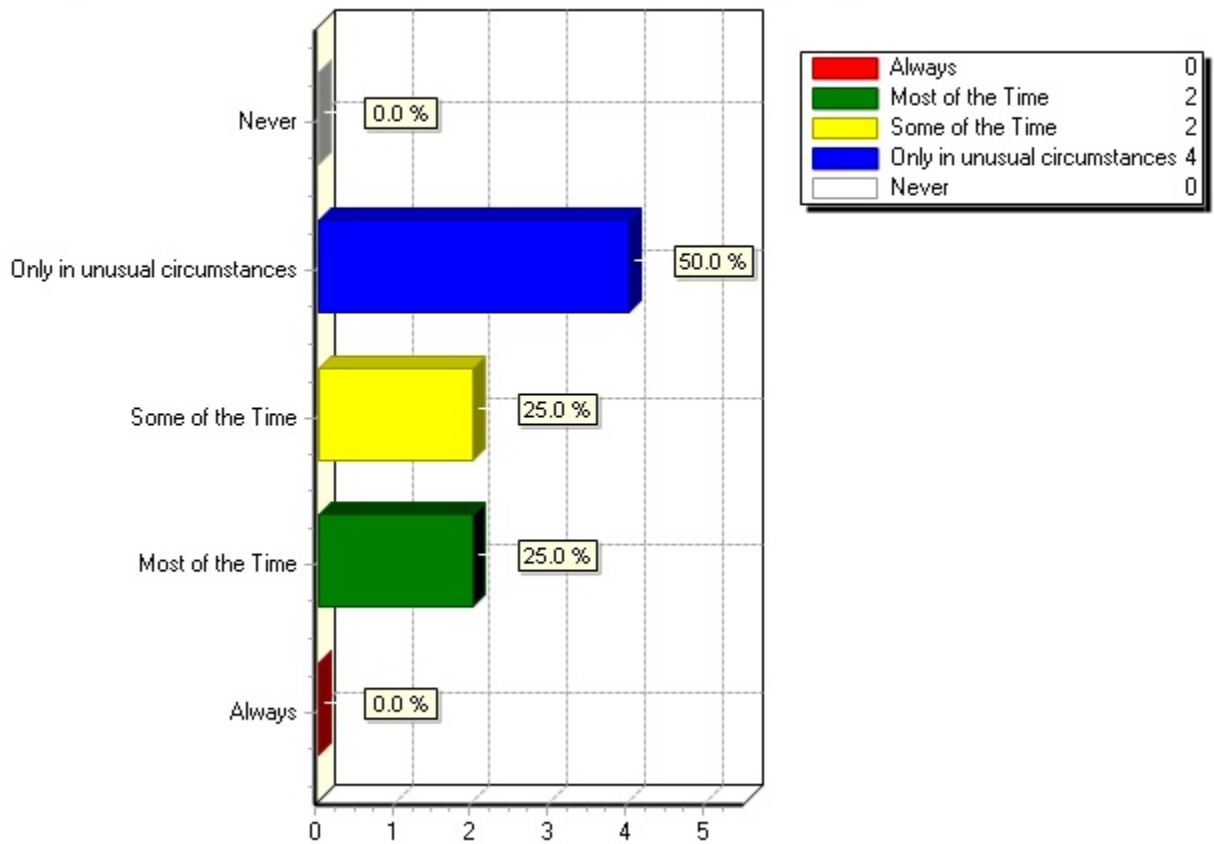
25.8) Encased distribution electric lines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.8) Encased distribution electric lines(Would you consider a design change in order to accommodate the f



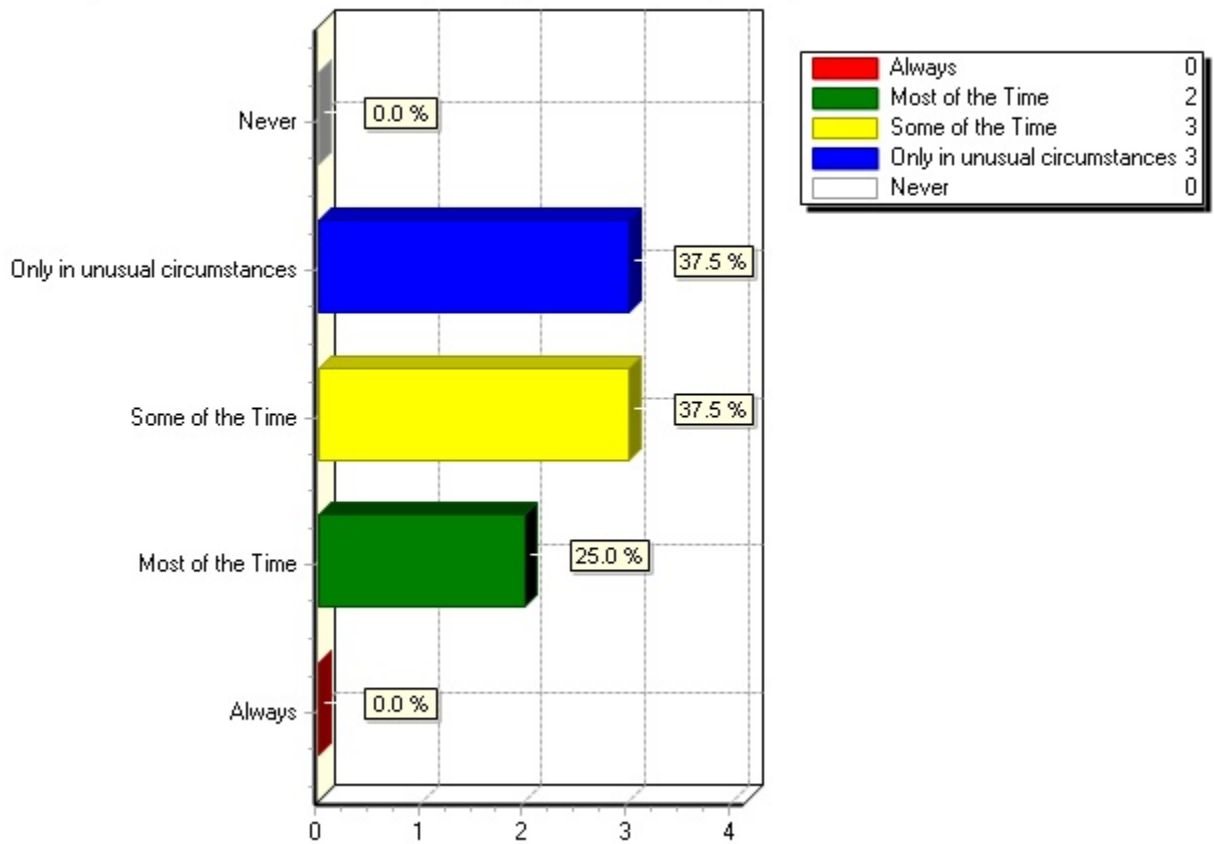
25.9) Direct-buried distribution electric lines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.9) Direct-buried distribution electric lines(Would you consider a design change in order to accommodate



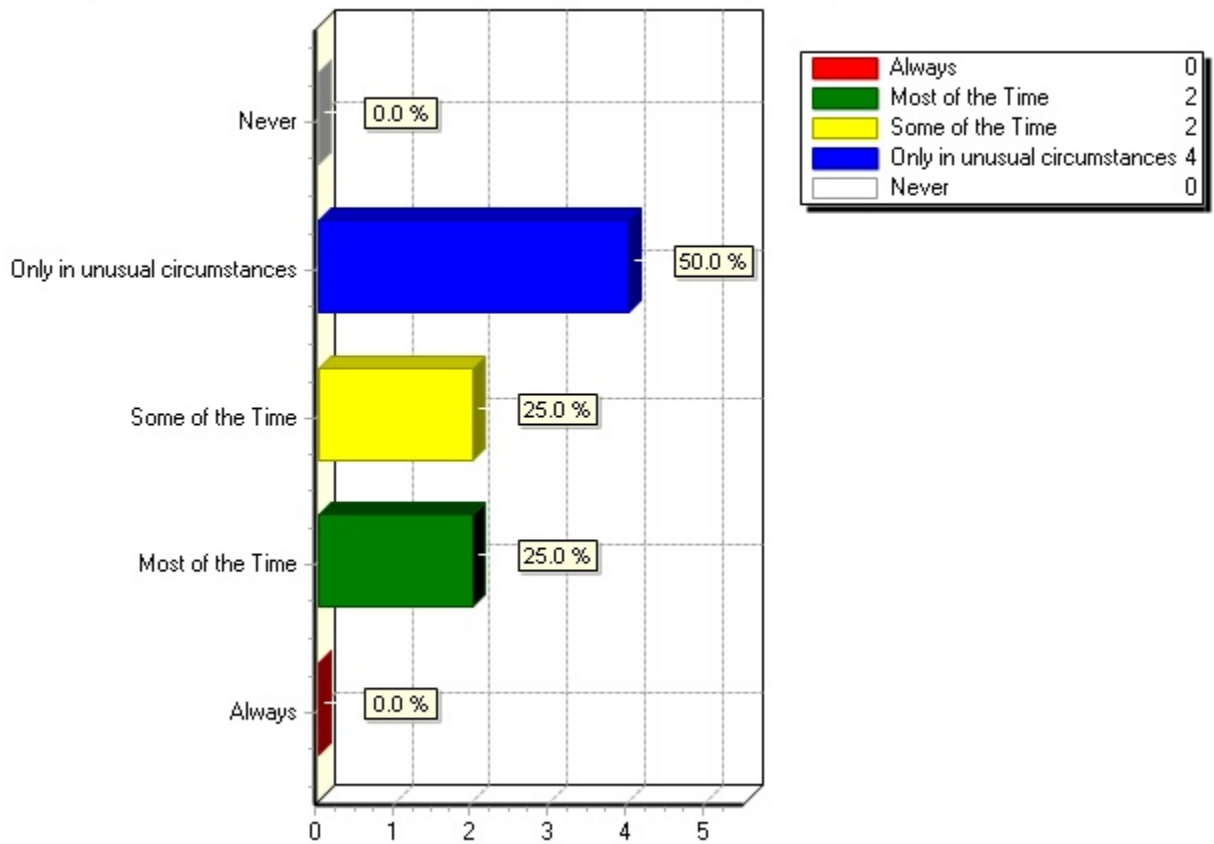
25.10) Encased communication lines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.10) Encased communication lines(Would you consider a design change in order to accommodate the following



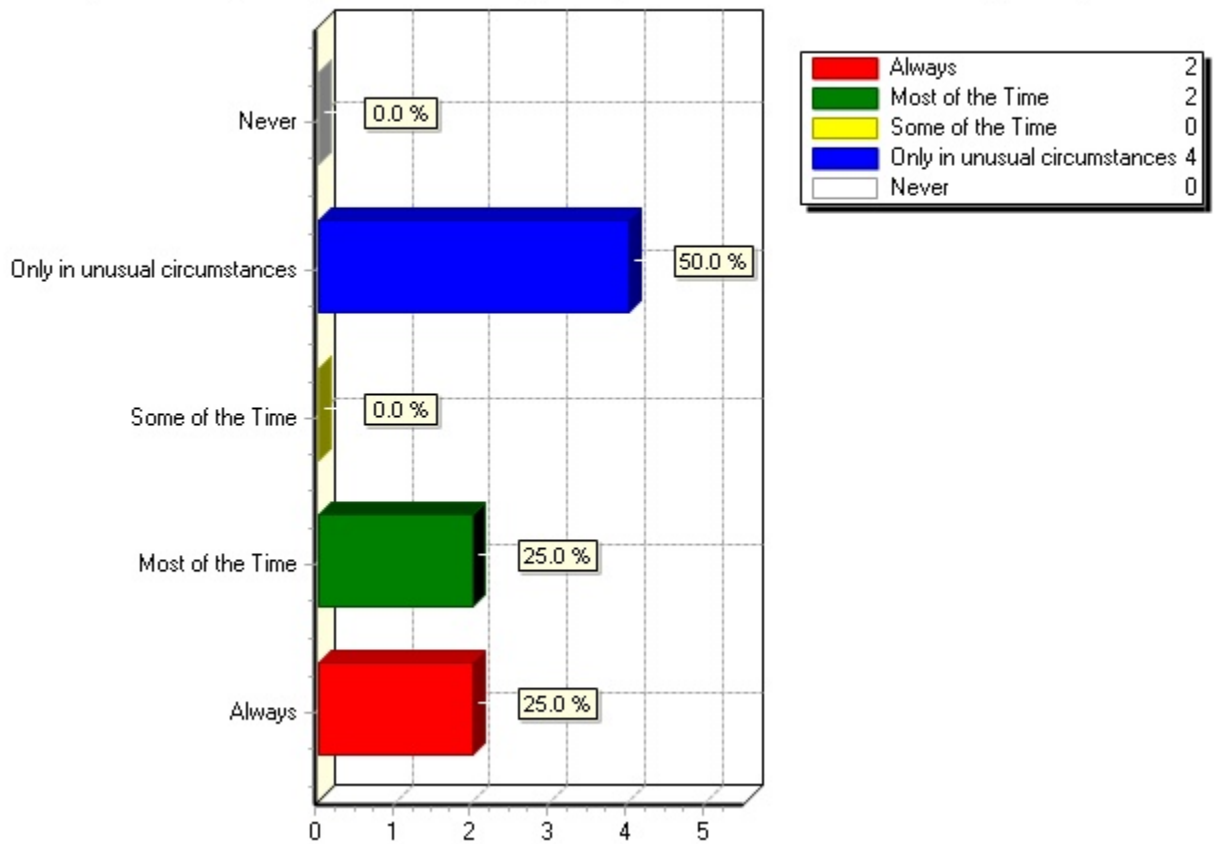
25.11) Direct-buried communication lines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.11) Direct-buried communication lines(Would you consider a design change in order to accommodate the fo



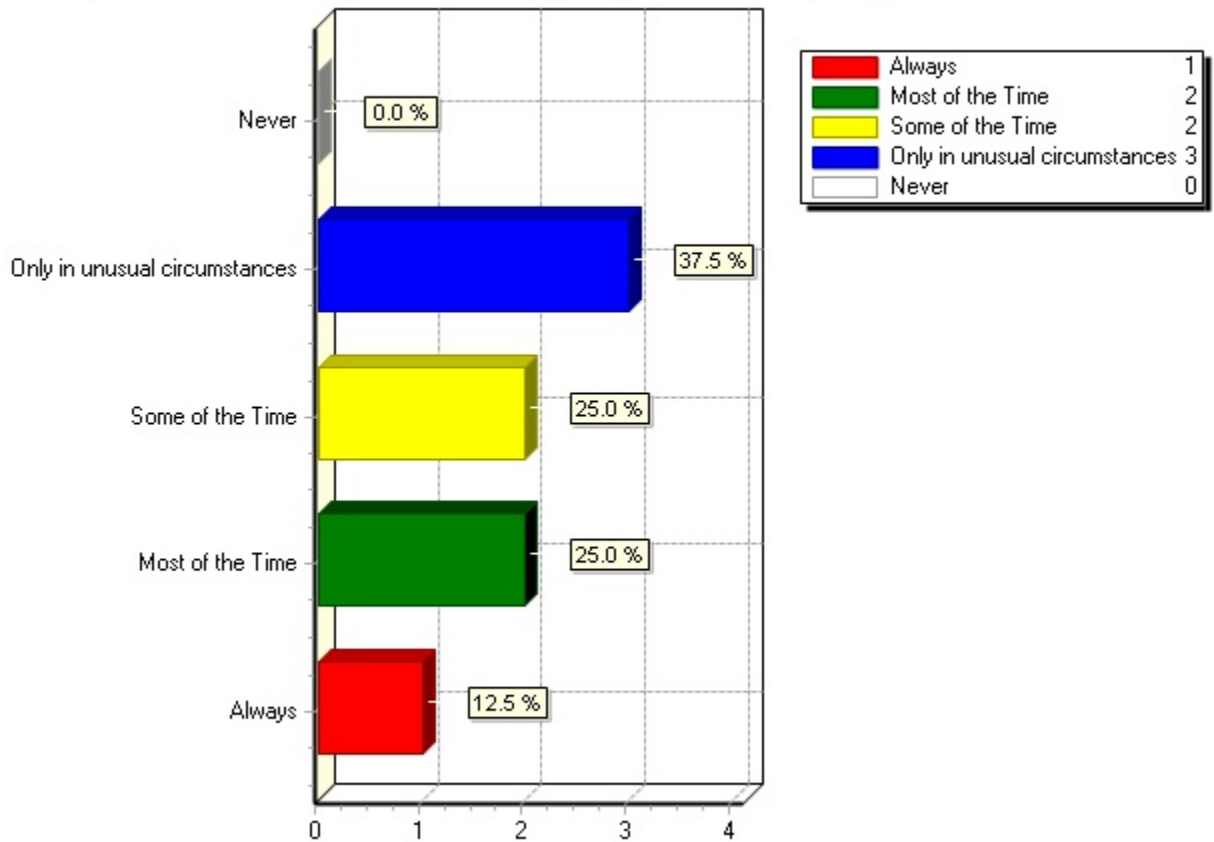
25.12) substations(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.12) substations(Would you consider a design change in order to accommodate the following utilities (in



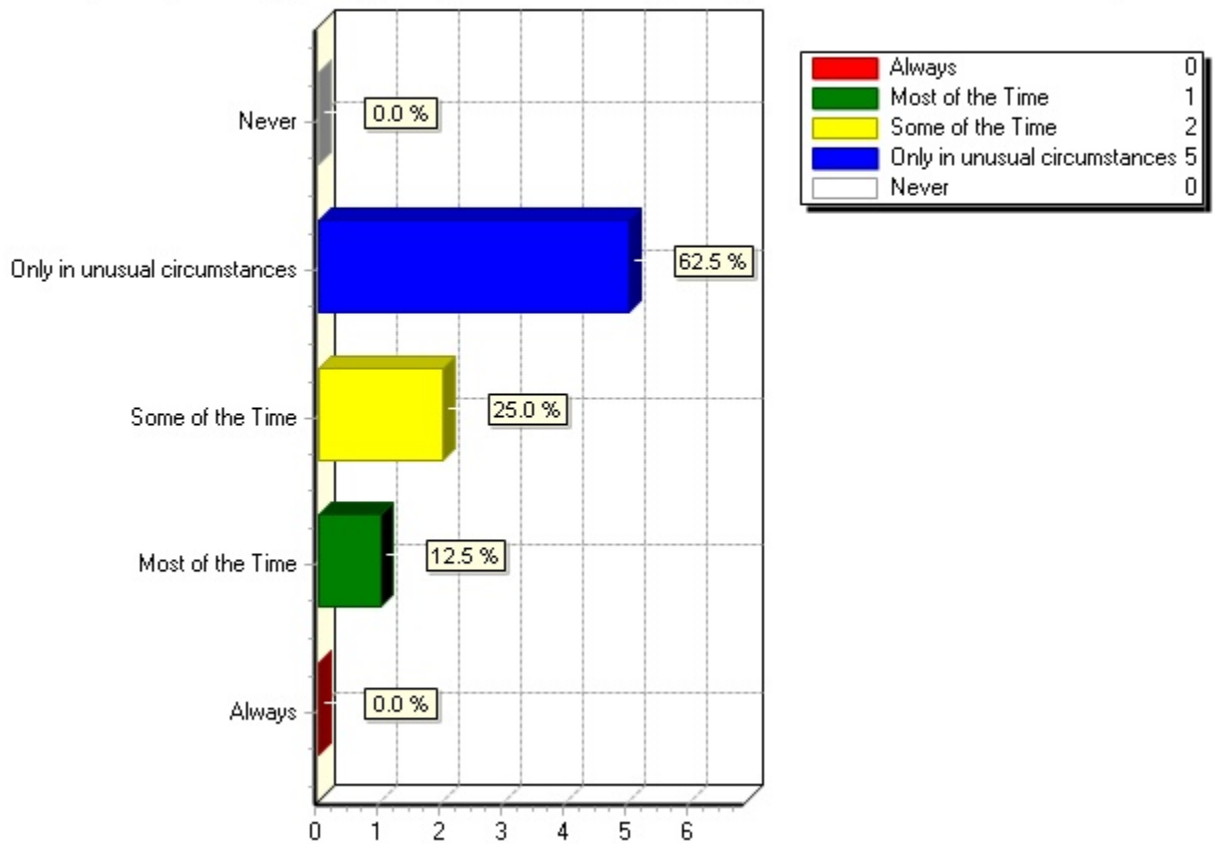
25.13) Buried environmentally controlled vaults (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.13) Buried environmentally controlled vaults (Would you consider a design change in order to accommodate



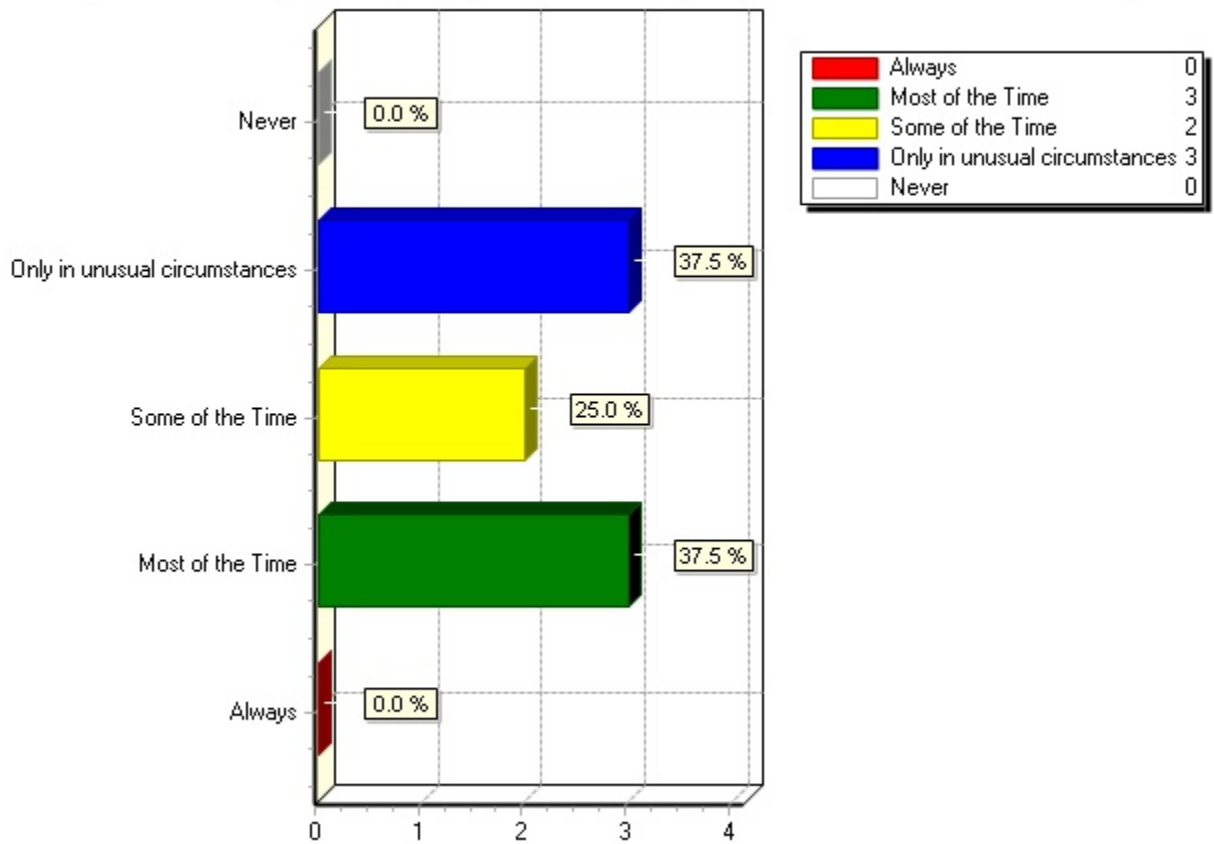
25.14) Gravity sanitary systems(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.14) Gravity sanitary systems(Would you consider a design change in order to accommodate the following u



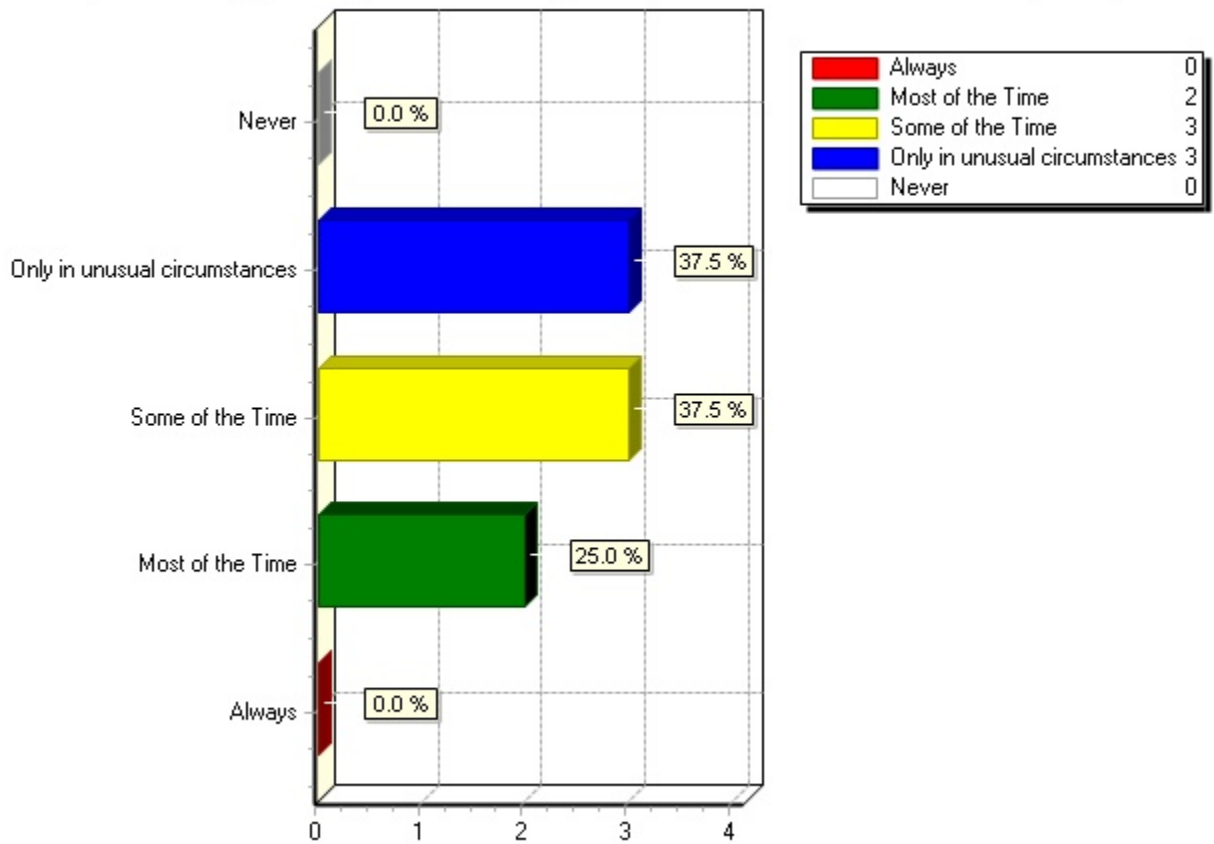
25.15) Pressure sanitary systems(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.15) Pressure sanitary systems(Would you consider a design change in order to accommodate the following



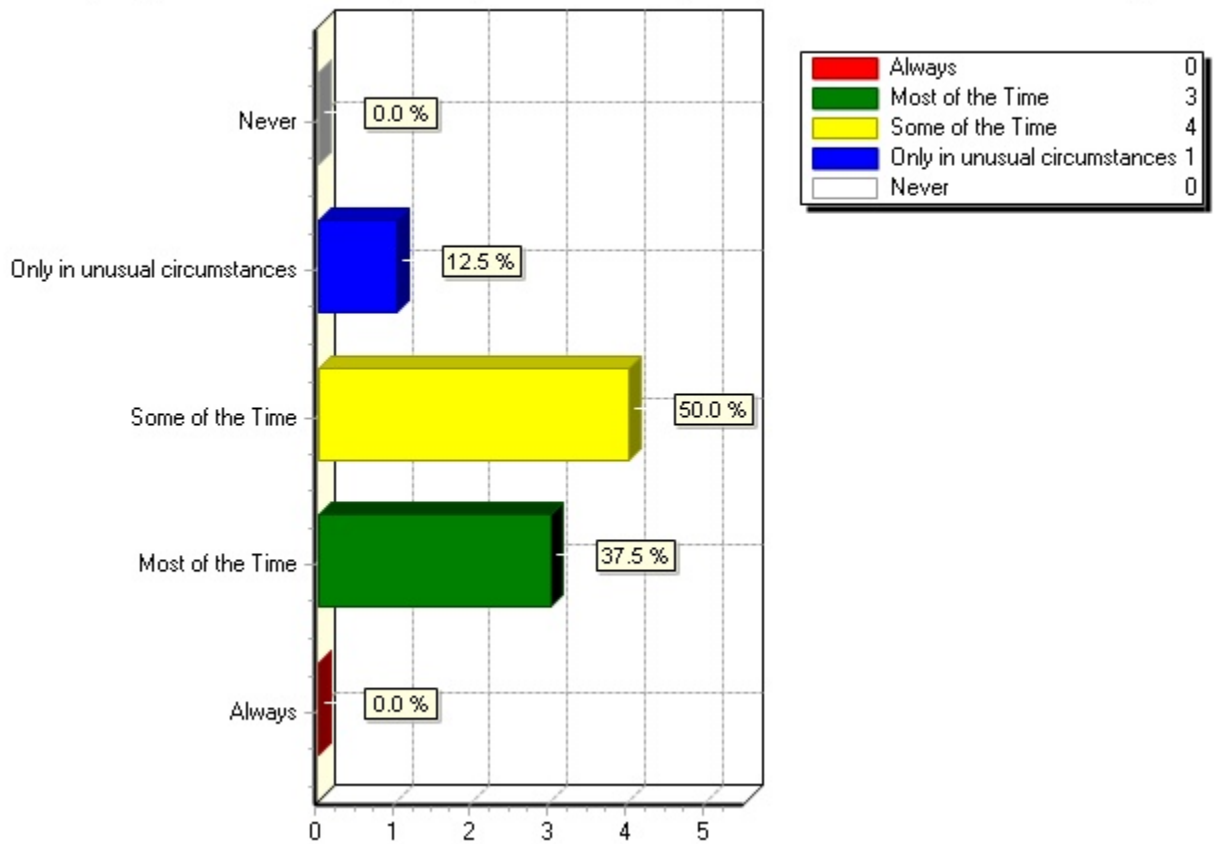
25.16) Storm drainage(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.16) Storm drainage(Would you consider a design change in order to accommodate the following utilities (



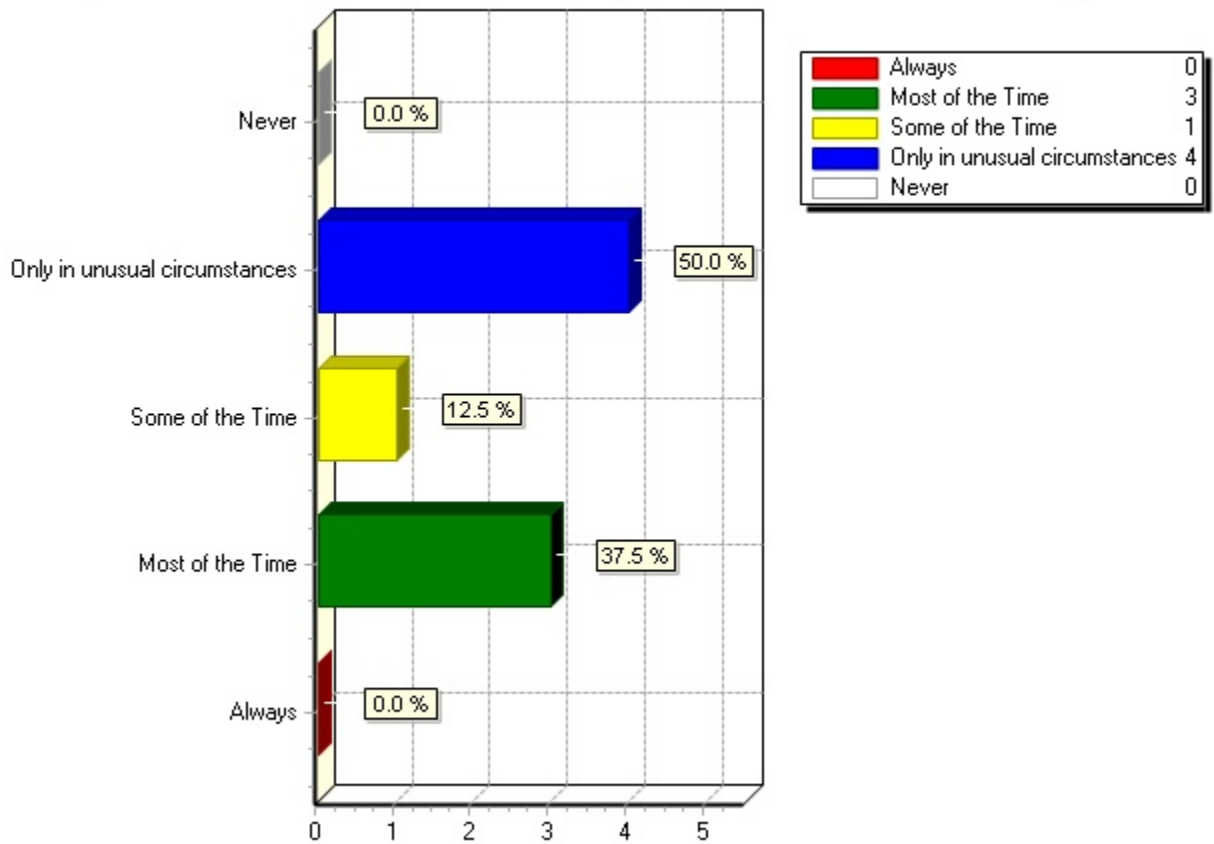
25.17) Large commercial services(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.17) Large commercial services(Would you consider a design change in order to accommodate the following



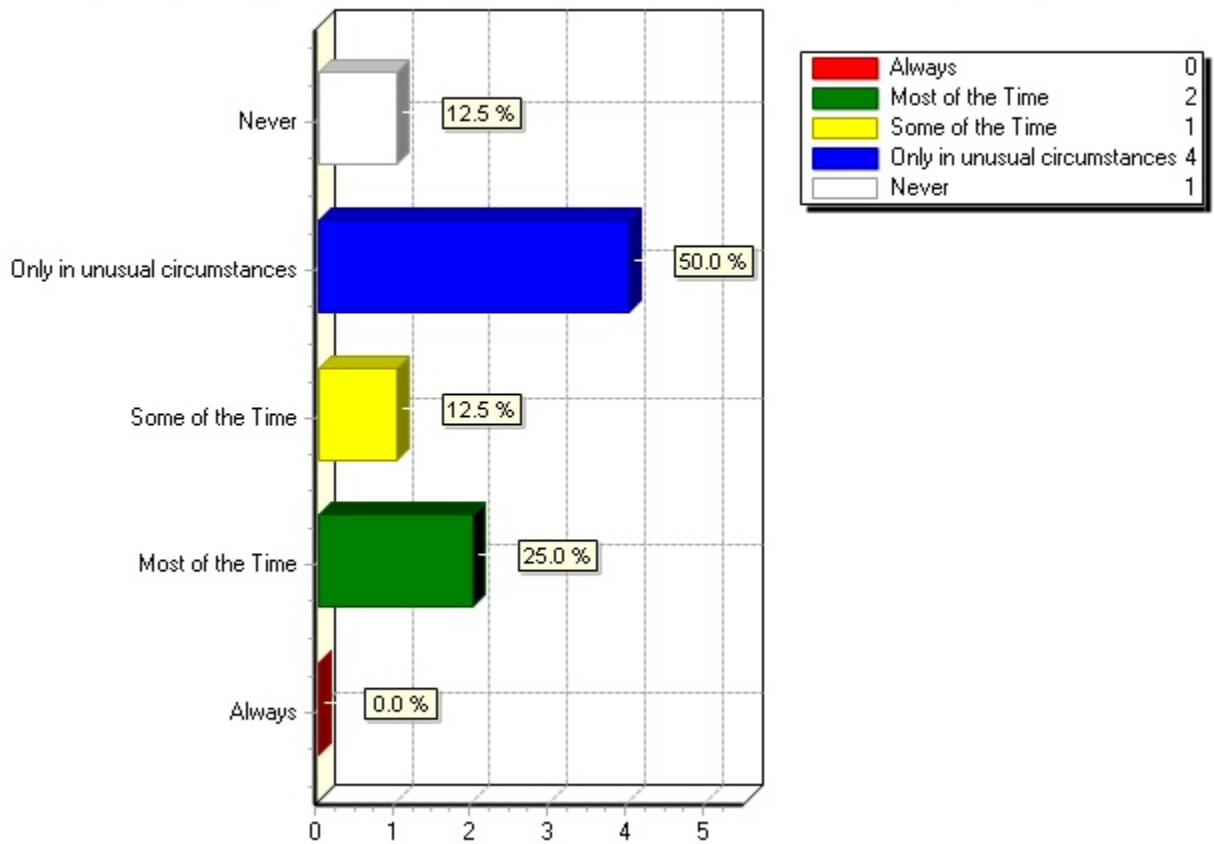
25.18) Residential services(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.18) Residential services(Would you consider a design change in order to accommodate the following utilities



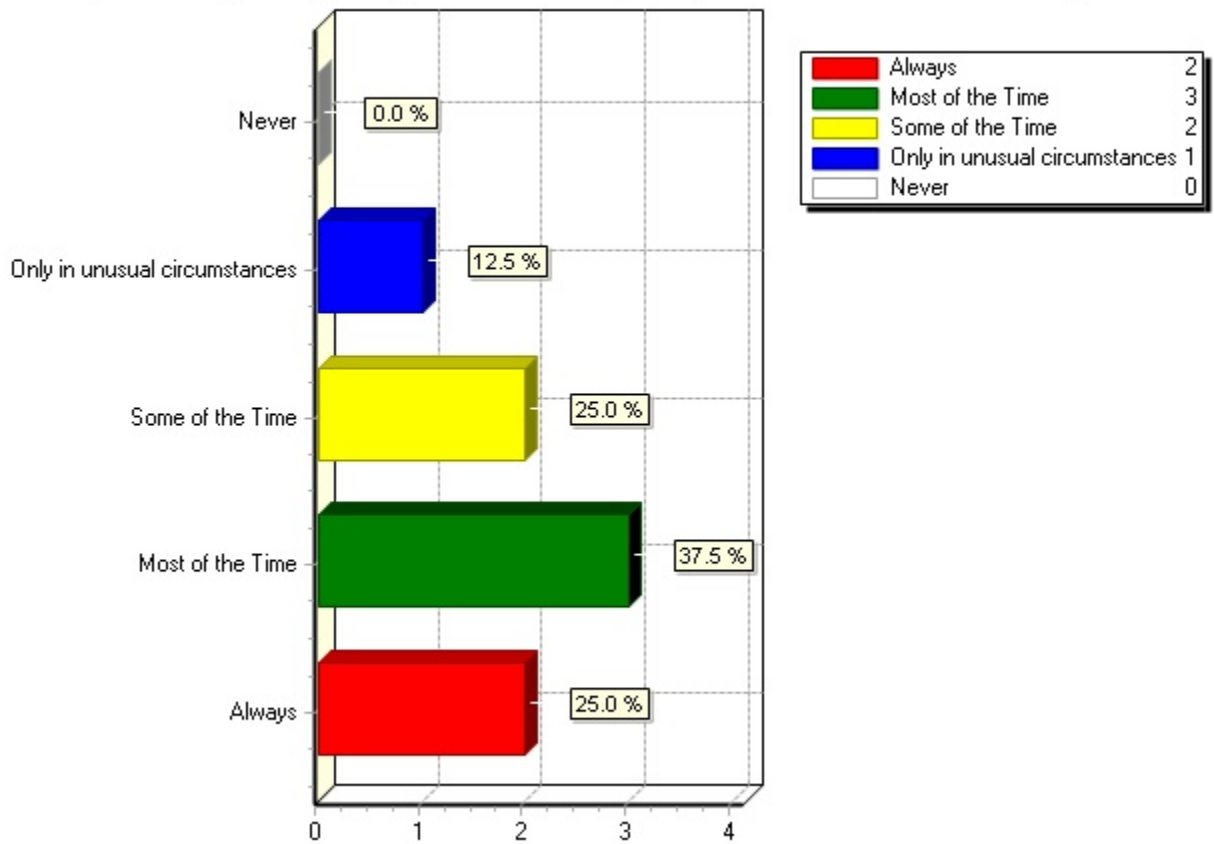
25.19) Steam (Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

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?)

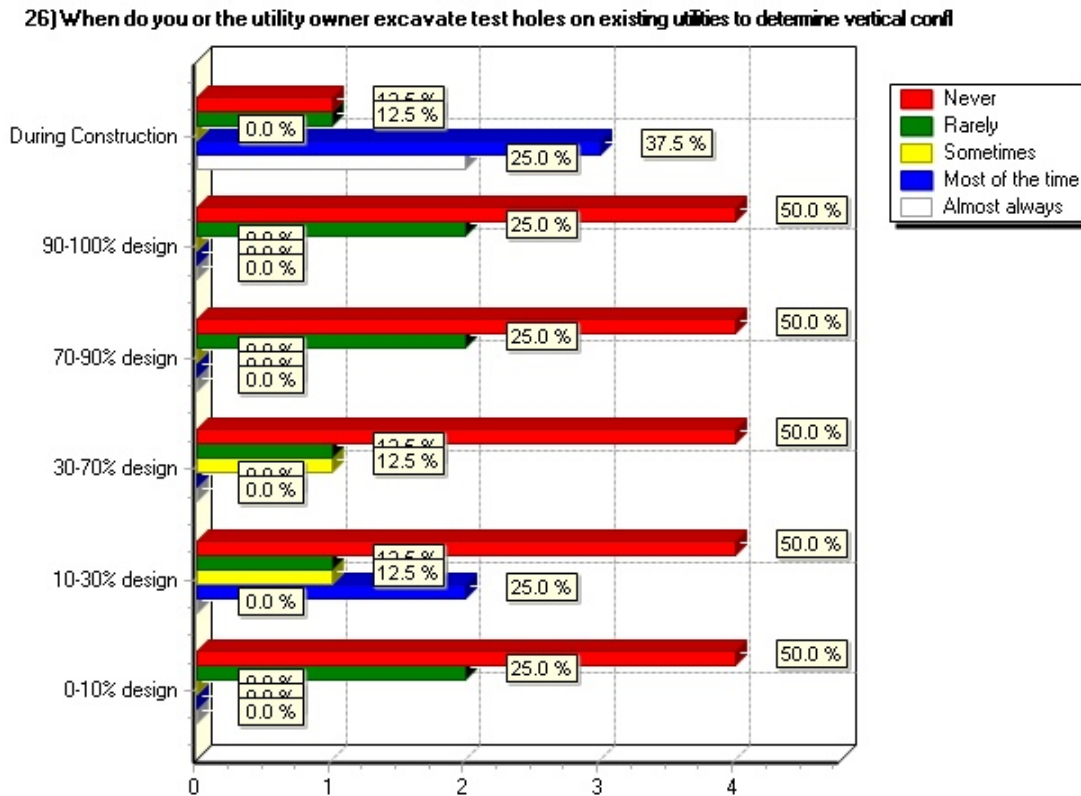


25.20) Petroleum pipelines(Would you consider a design change in order to accommodate the following utilities (in the right of way by permit) in conflict with the highway design?)

25.20) Petroleum pipelines(Would you consider a design change in order to accommodate the following utilities

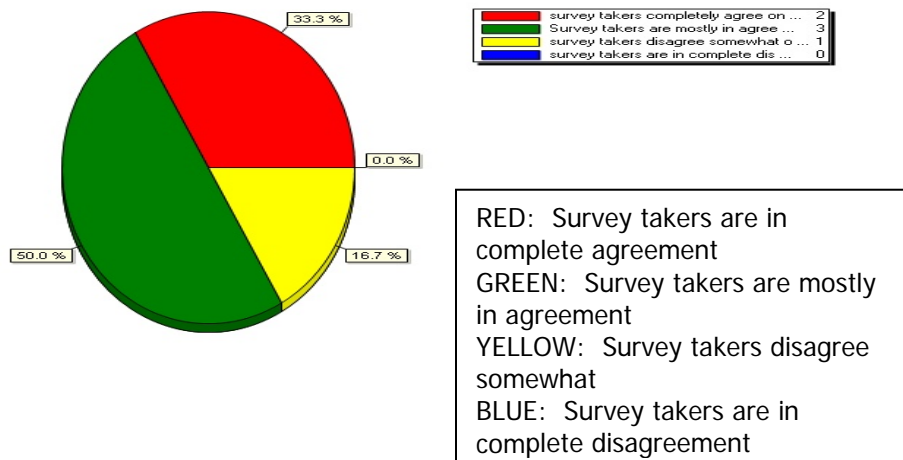


26) When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts? The official DOT response was:



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

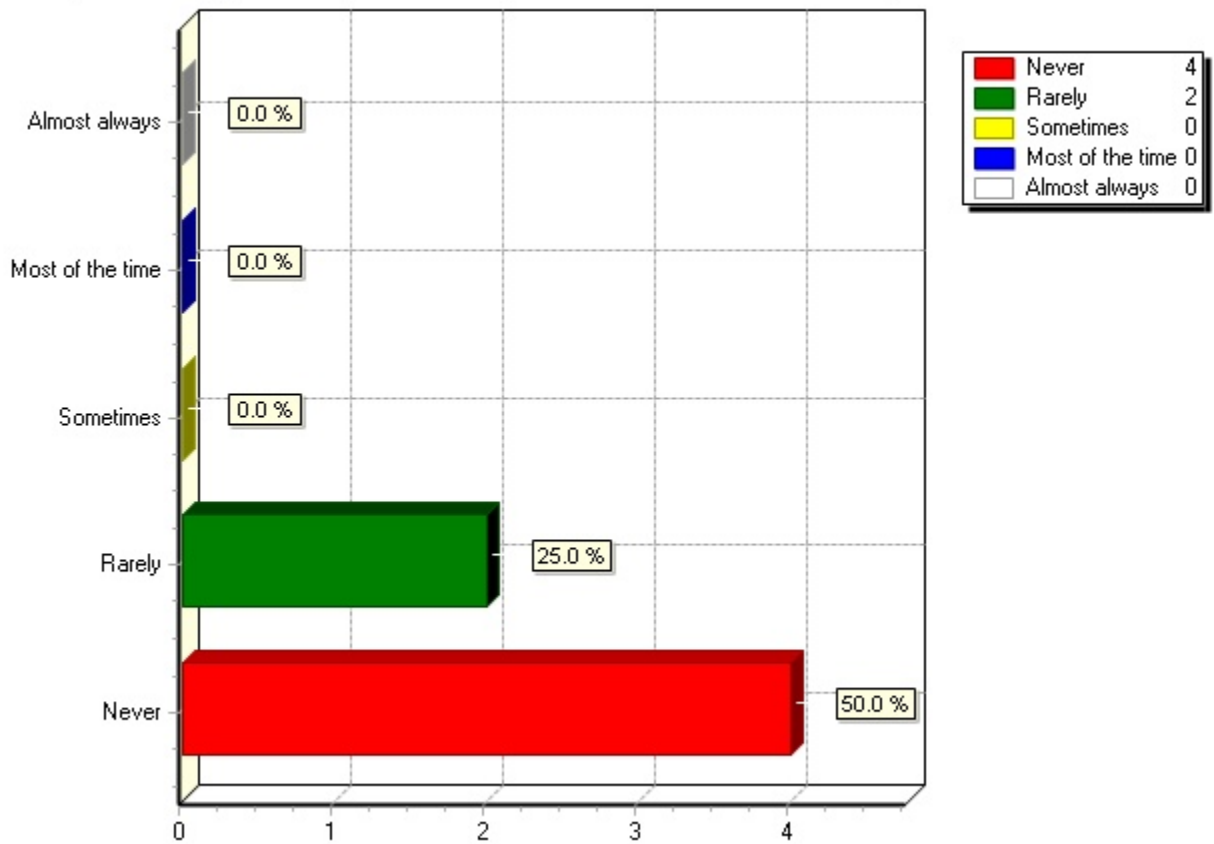
5.21) Question # 26 (This question is to be filled out only by the person responsible to collect answers)



Here is the detailed response for each question asked in # 26.

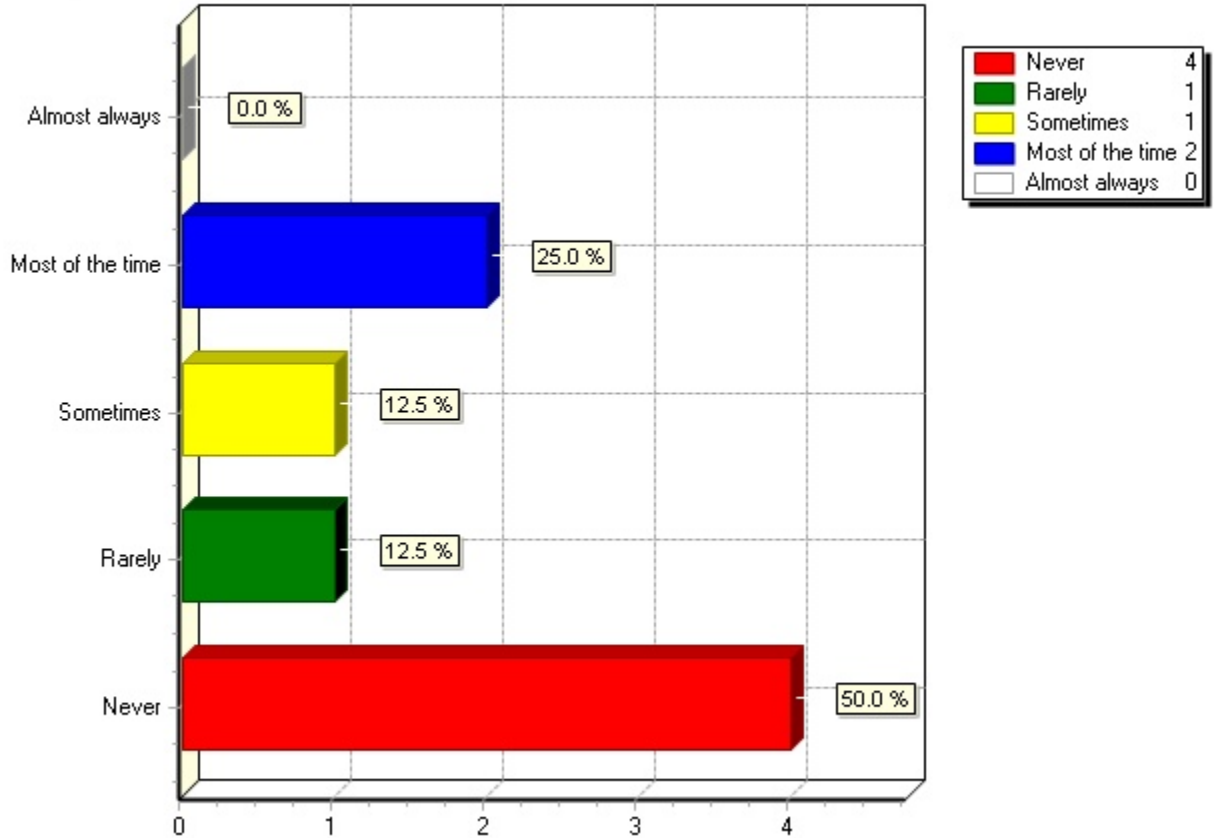
26.1) 0-10% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

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



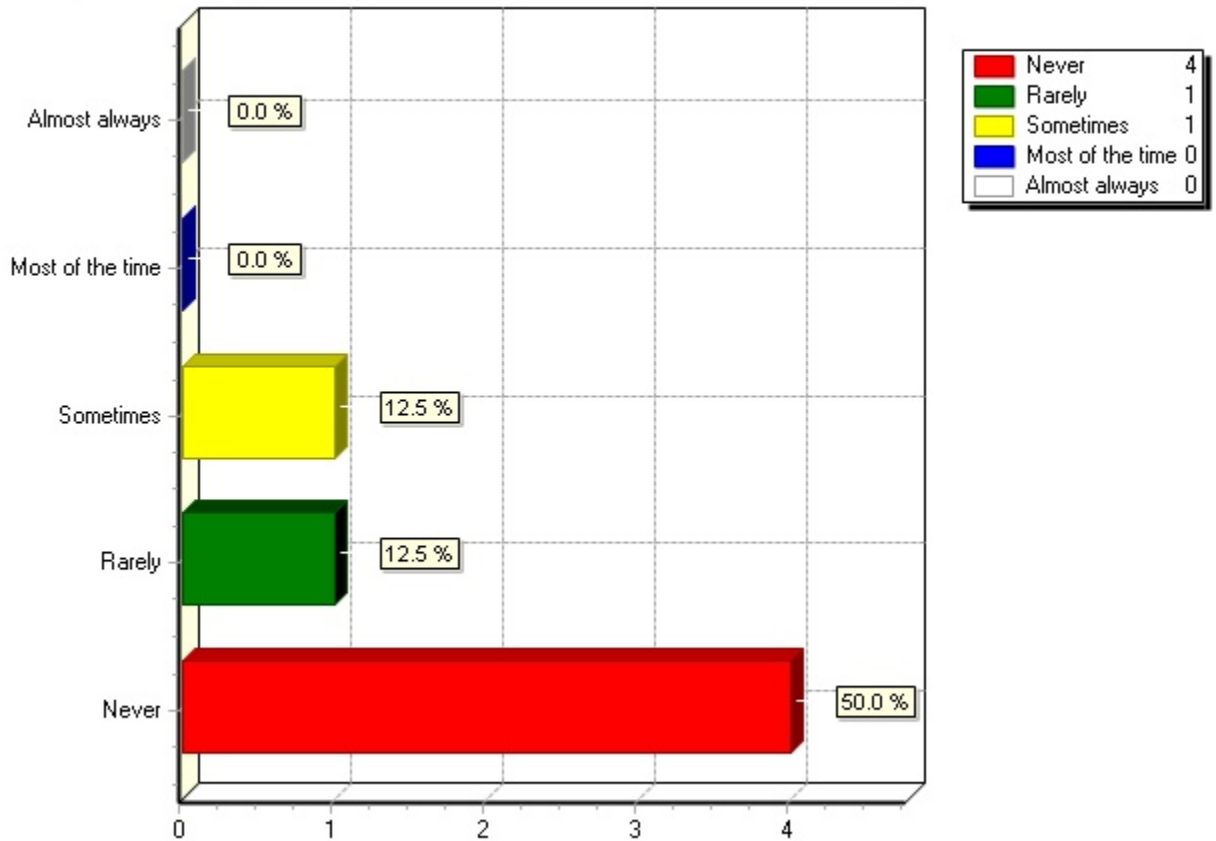
26.2) 10-30% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

26.2) 10-30% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)



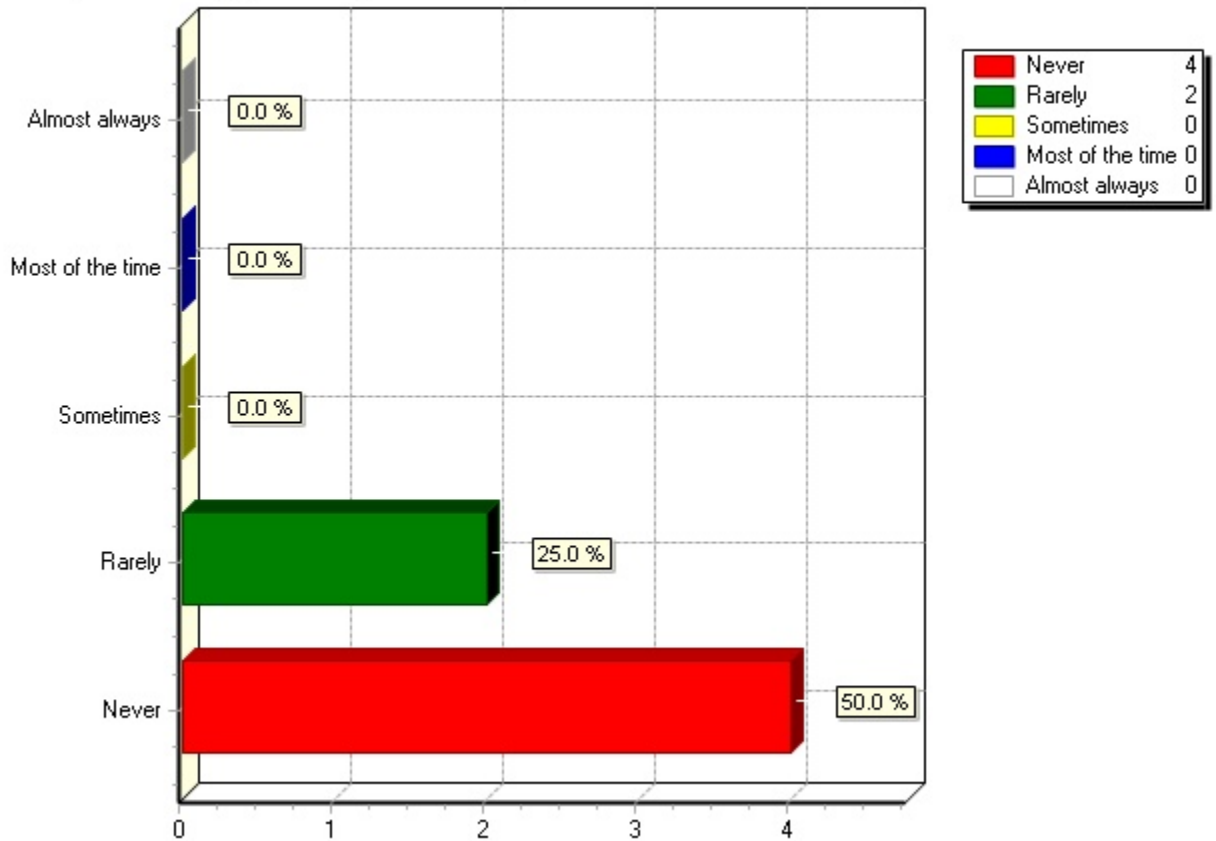
26.3) 30-70% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

26.3) 30-70% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)



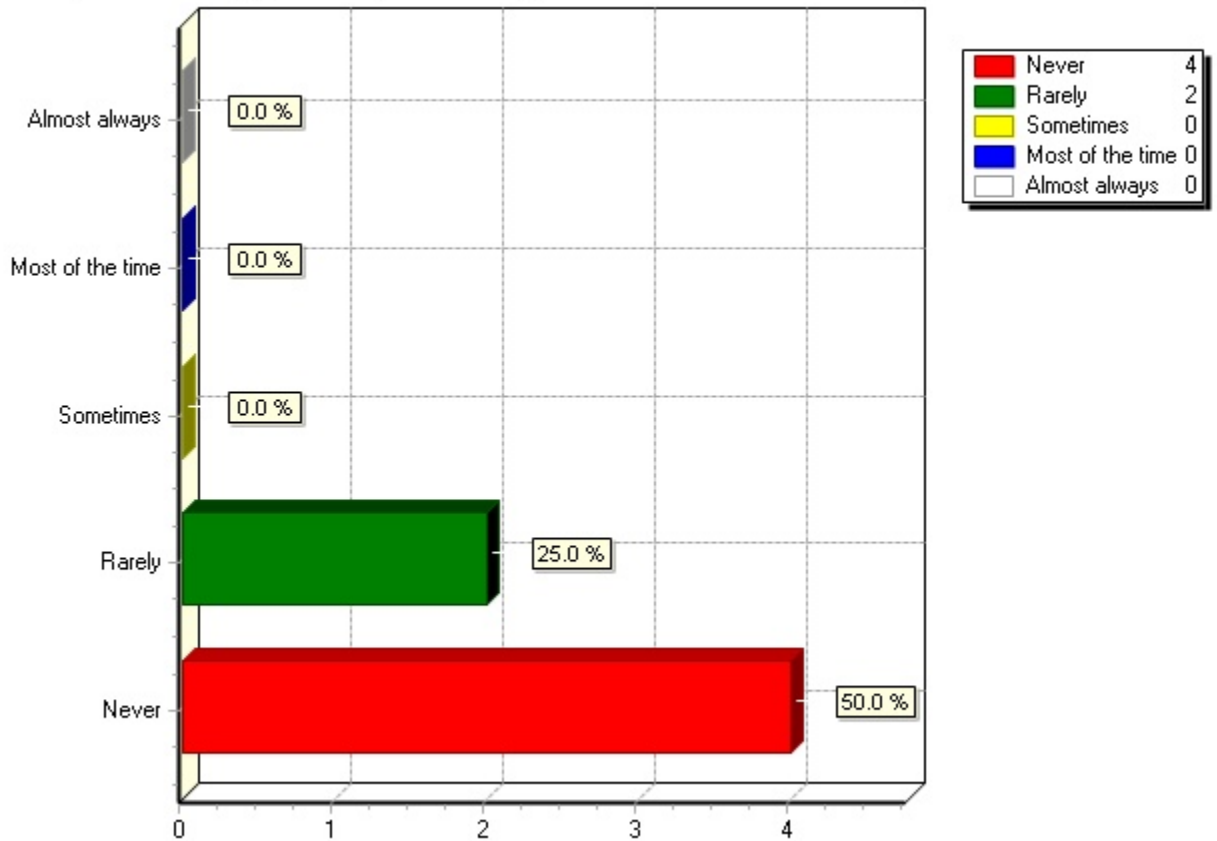
26.4) 70-90% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

26.4) 70-90% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)



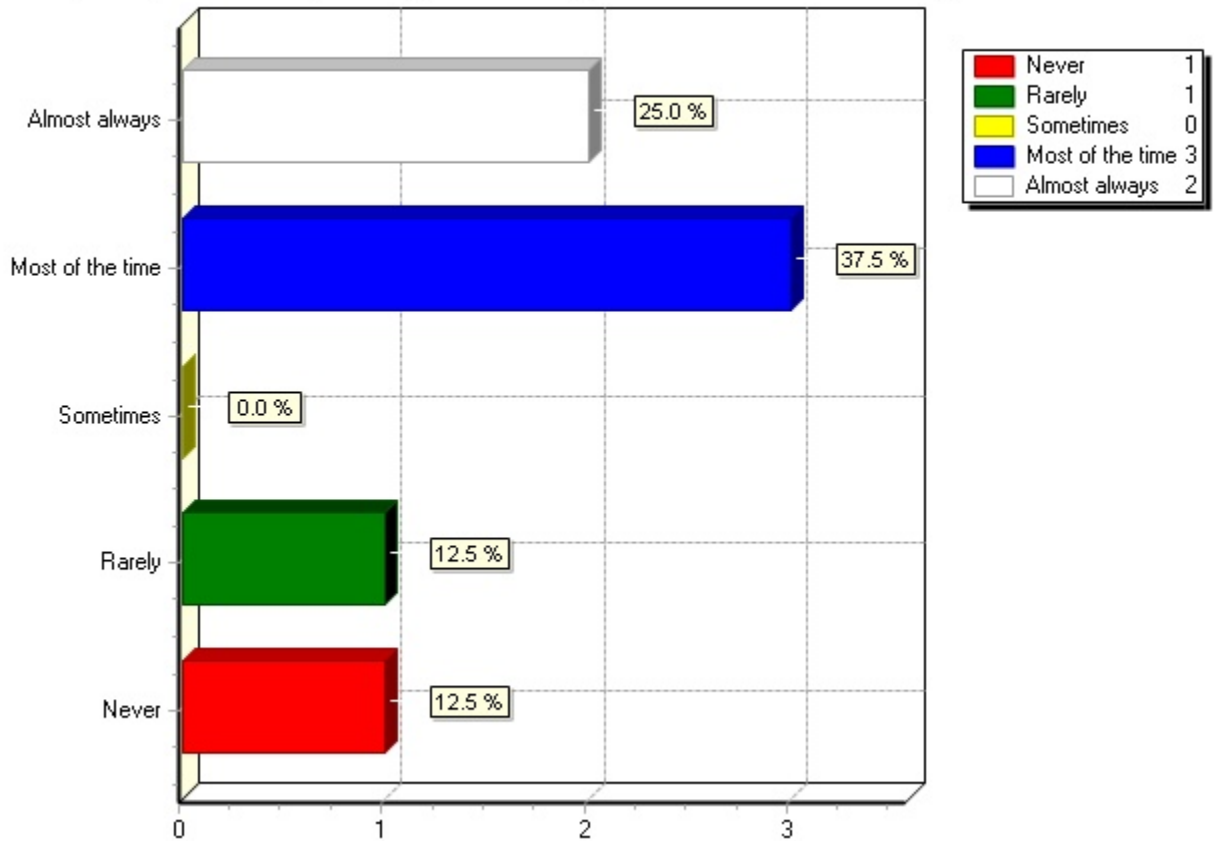
26.5) 90-100% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

26.5) 90-100% design(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)



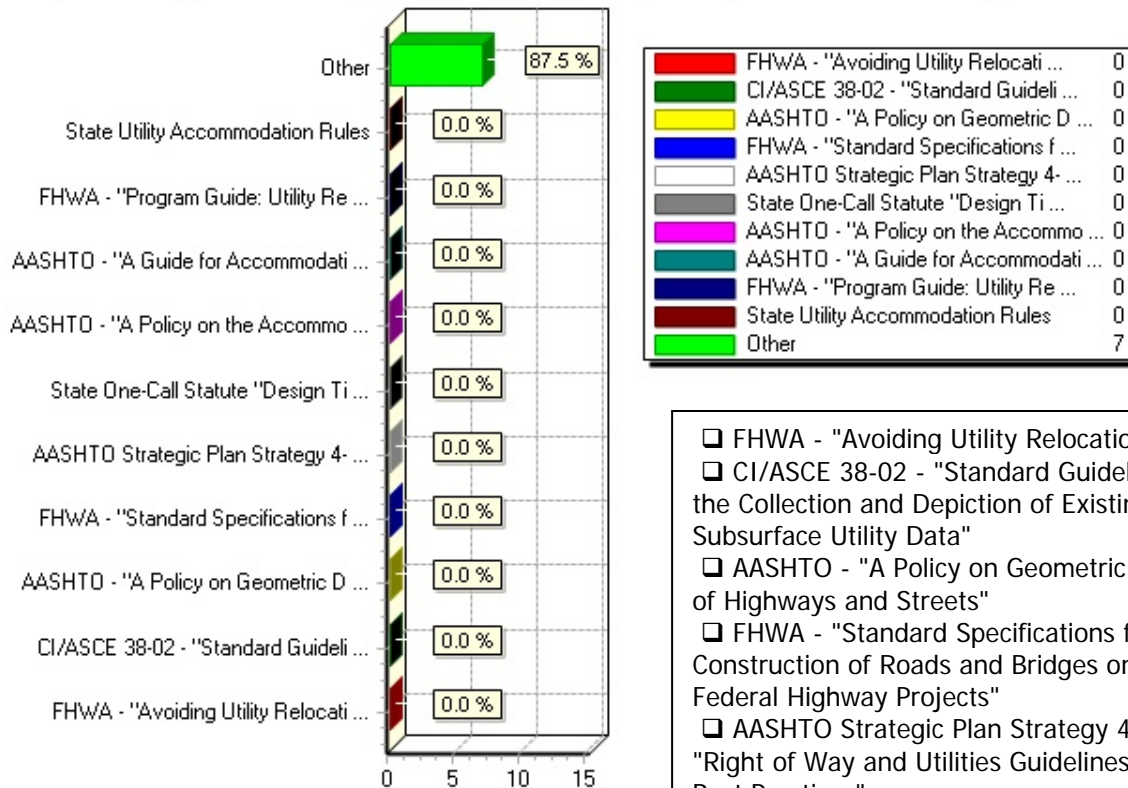
26.6) During Construction(When do you or the utility owner excavate test holes on existing utilities to determine vertical conflicts?)

26.6) During Construction(When do you or the utility owner excavate test holes on existing utilities to de



27) We routinely use the following guidance documents for design as it relates to utilities (Mark all answers that apply.)

27) We routinely use the following guidance documents for design as it relates to utilities (Mark all answers that apply.)

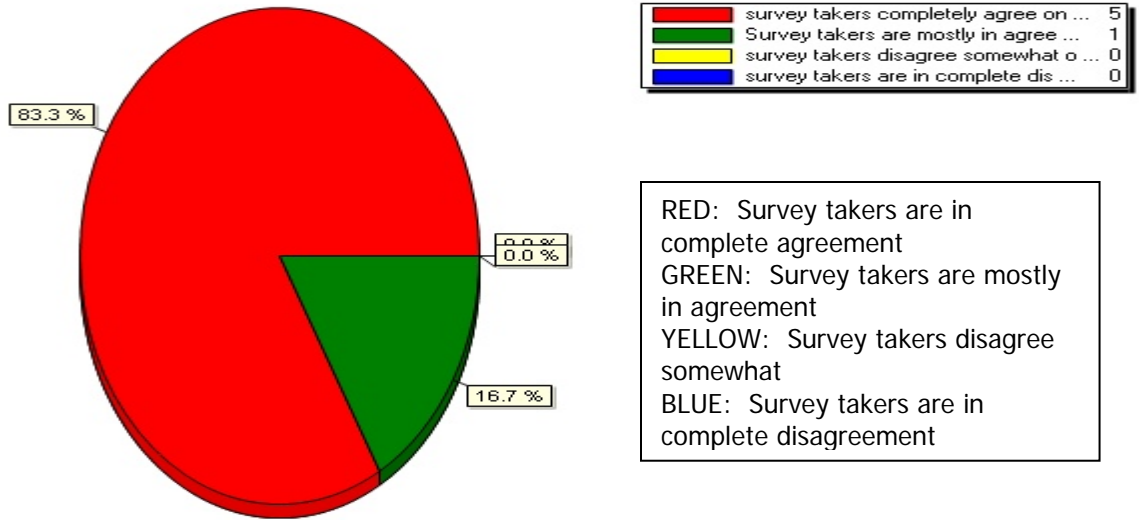


■	FHWA - "Avoiding Utility Relocati ...	0
■	CI/ASCE 38-02 - "Standard Guideli ...	0
■	AASHTO - "A Policy on Geometric D ...	0
■	FHWA - "Standard Specifications f ...	0
■	AASHTO Strategic Plan Strategy 4- ...	0
■	State One-Call Statute "Design Ti ...	0
■	AASHTO - "A Policy on the Accommo ...	0
■	AASHTO - "A Guide for Accommodati ...	0
■	FHWA - "Program Guide: Utility Re ...	0
■	State Utility Accommodation Rules	0
■	Other	7

- 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"
- AASHTO - "A Guide for Accommodating Utilities Within Highway Right-of-Way"
- FHWA - "Program Guide: Utility Relocation and Accommodation on Federal-Aid Highway Projects"
- State Utility Accommodation Rules
- Other (please specify)

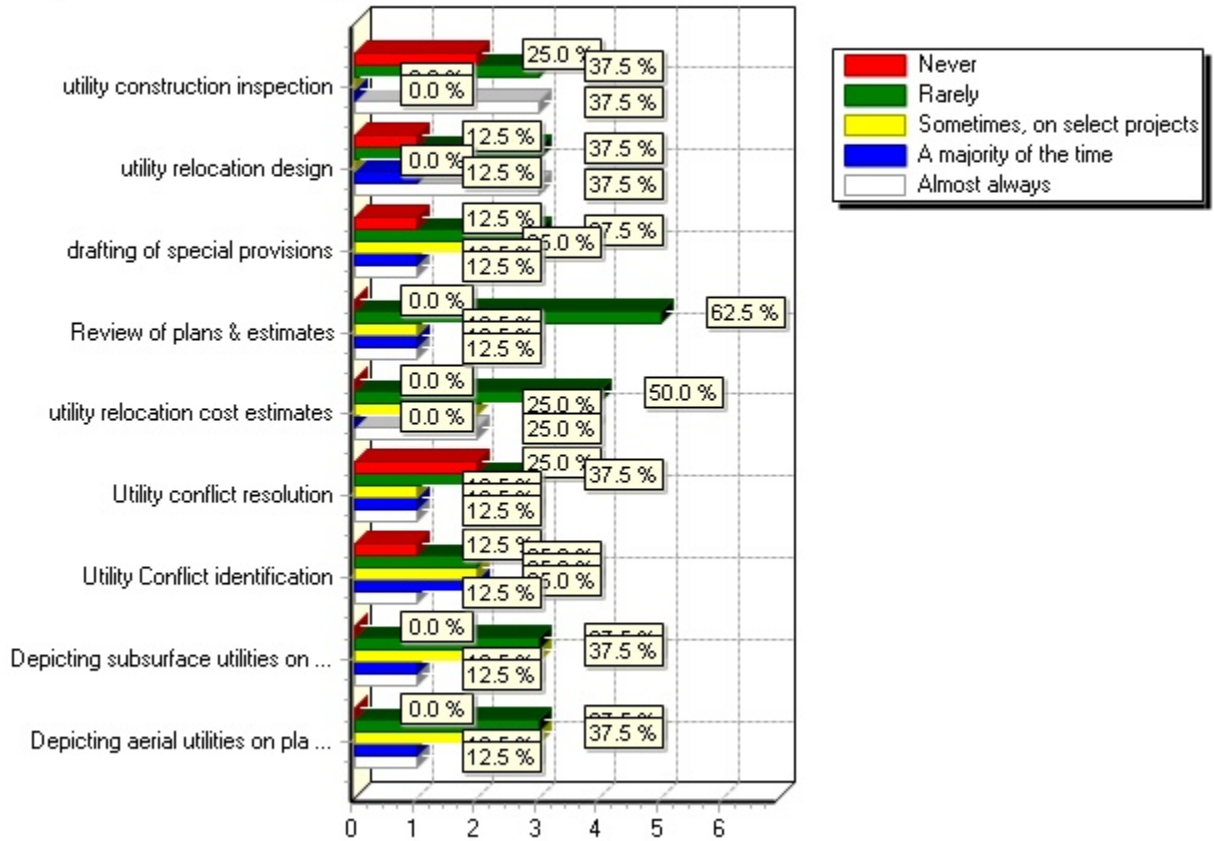
However, within the DOT there was the following diversity of opinion to the official response.

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



28) We outsource the following functions. The official DOT response was:

28) We outsource the following functions

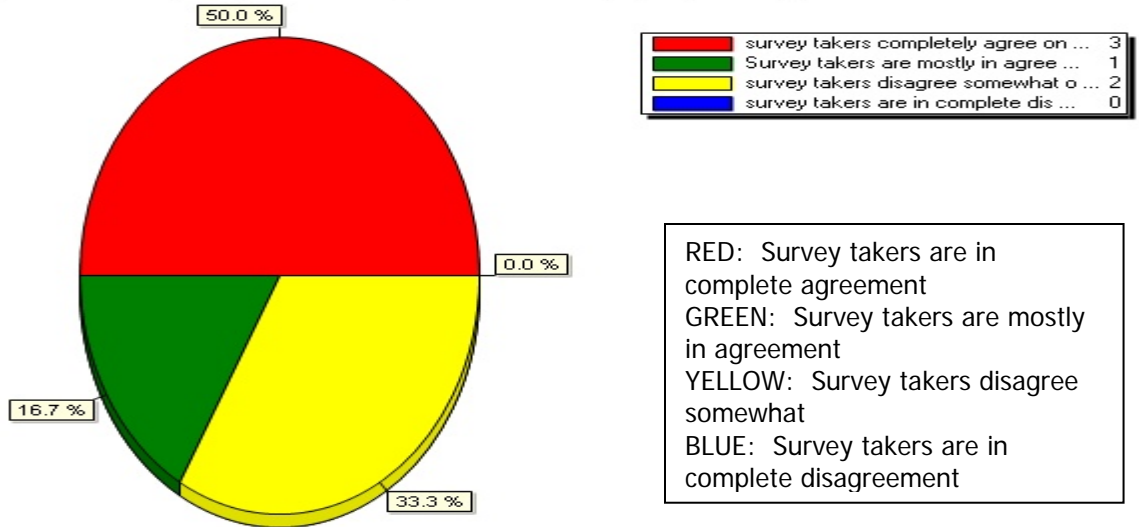


Comment Responses:

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.

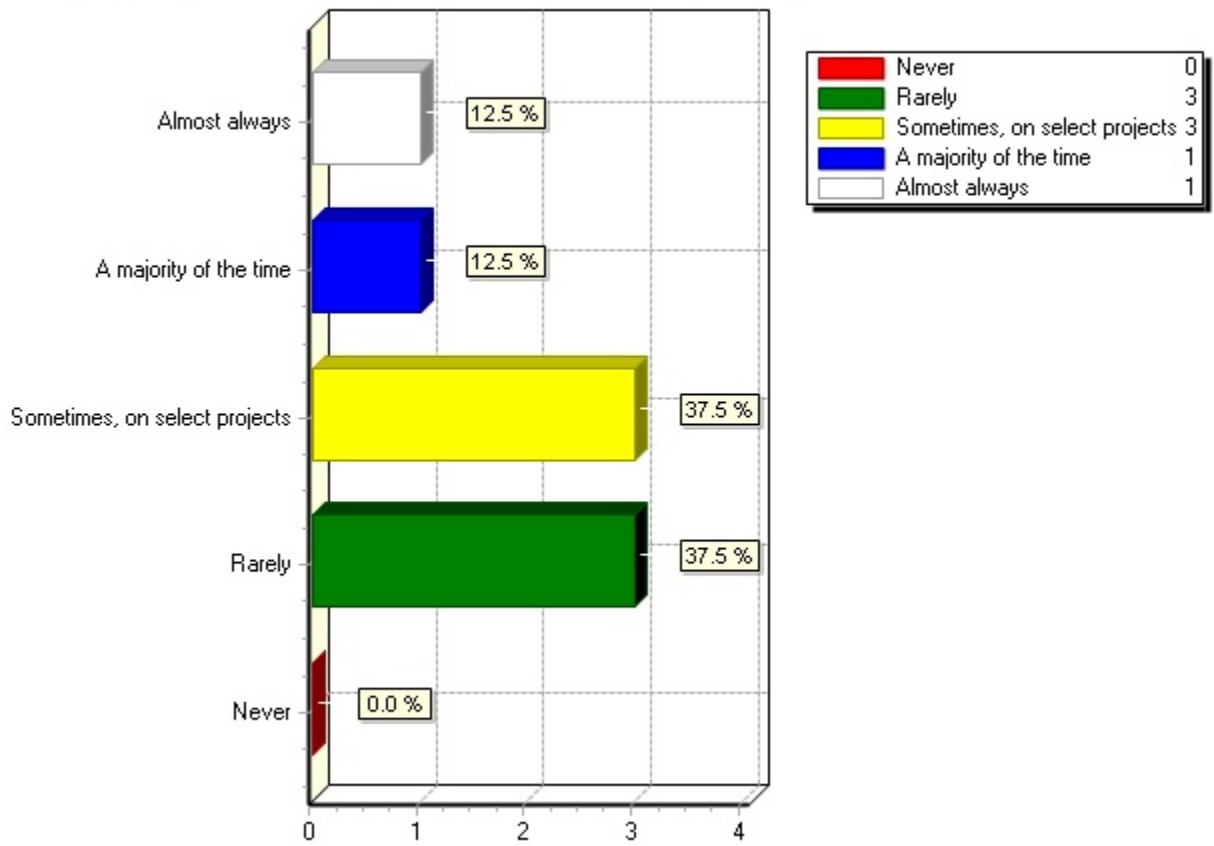
5.23) Question # 28(This question is to be filled out only by the person responsible to collate answ



Here is the detailed response for each question asked in # 28.

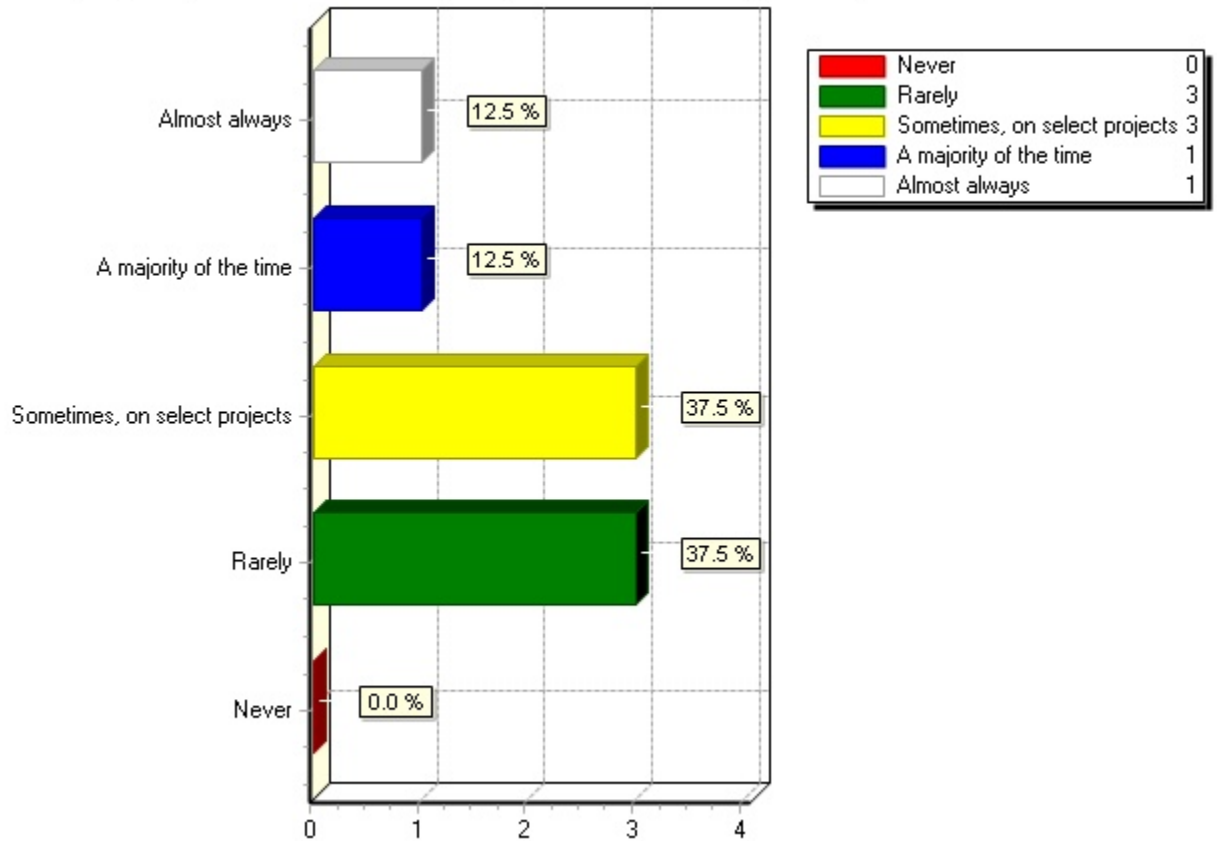
28.1) Depicting aerial utilities on plans(We outsource the following functions)

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

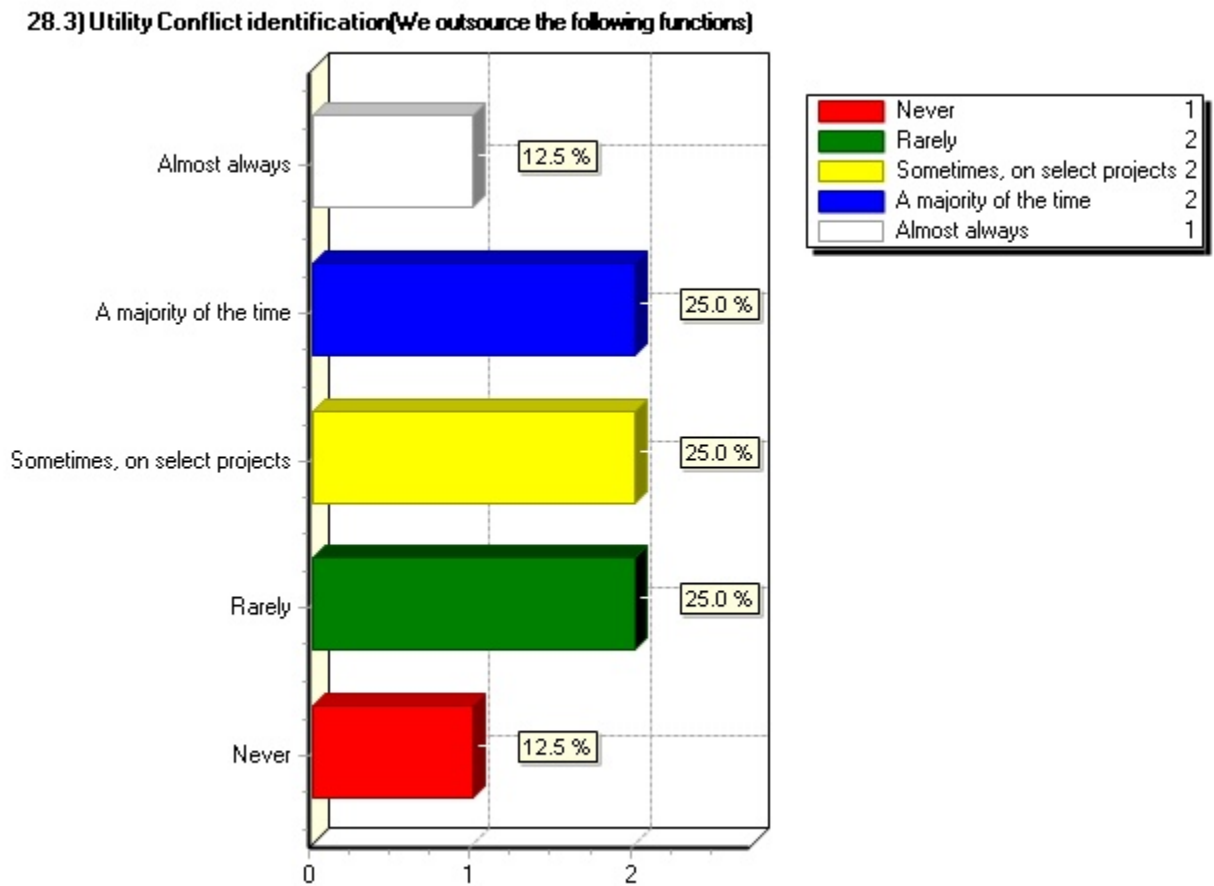


28.2) Depicting subsurface utilities on plans(We outsource the following functions)

28.2) Depicting subsurface utilities on plans(We outsource the following functions)

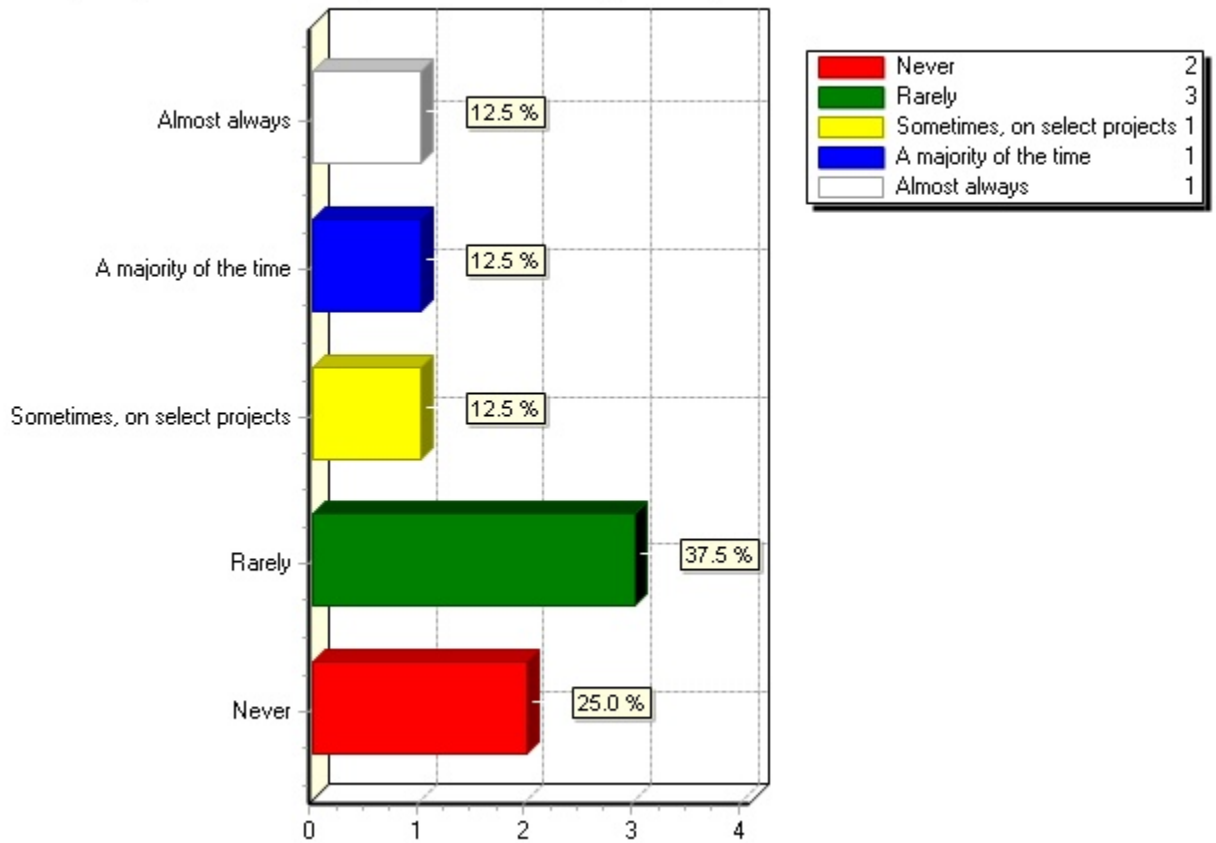


28.3) Utility Conflict identification(We outsource the following functions)

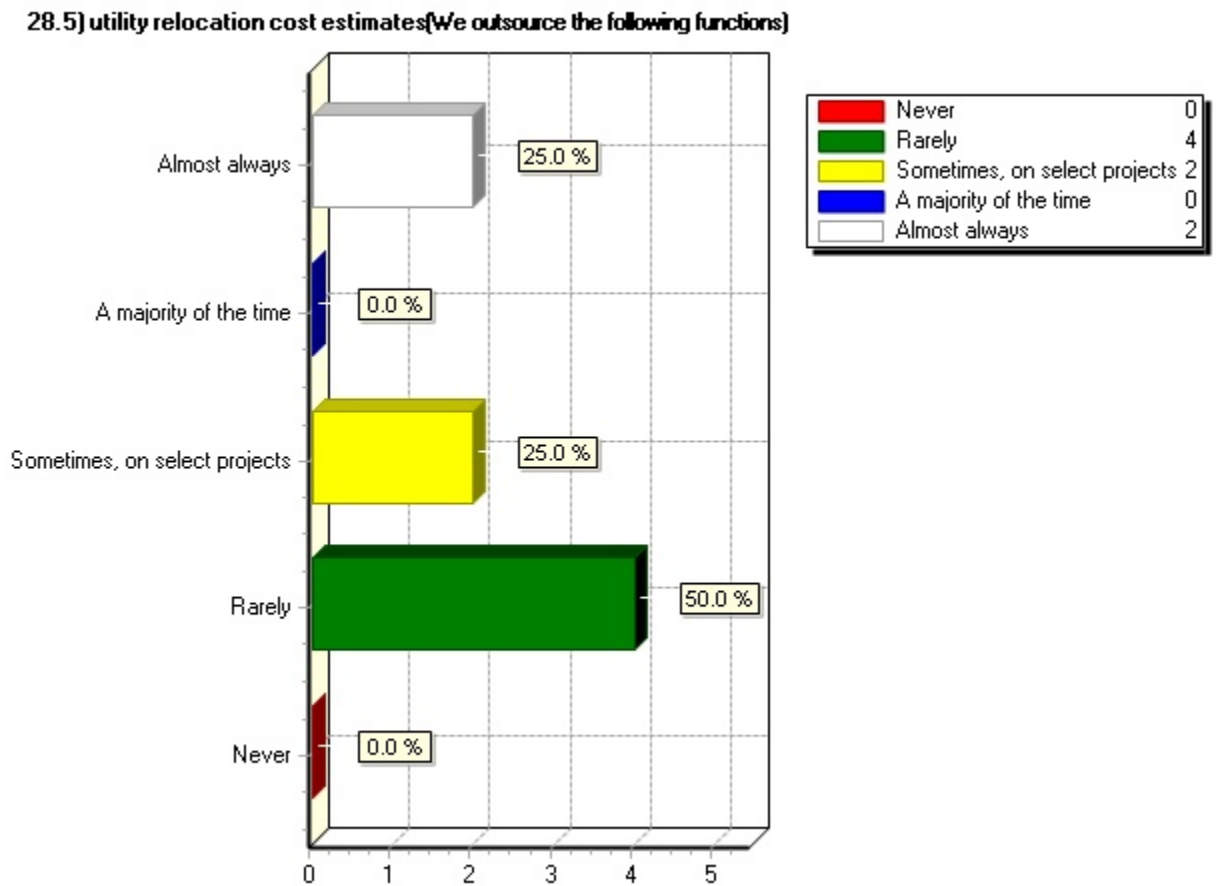


28.4) Utility conflict resolution(We outsource the following functions)

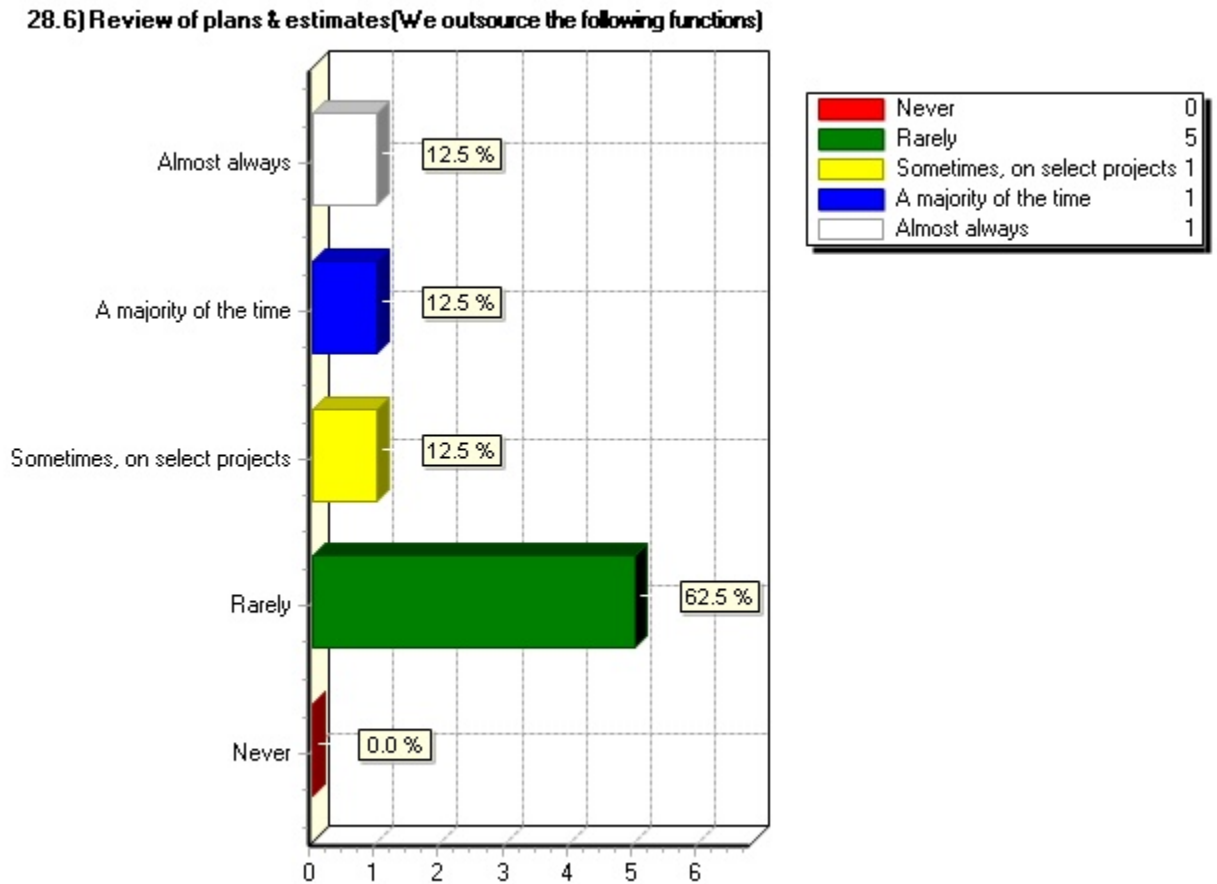
28.4) Utility conflict resolution(We outsource the following functions)



28.5) utility relocation cost estimates(We outsource the following functions)

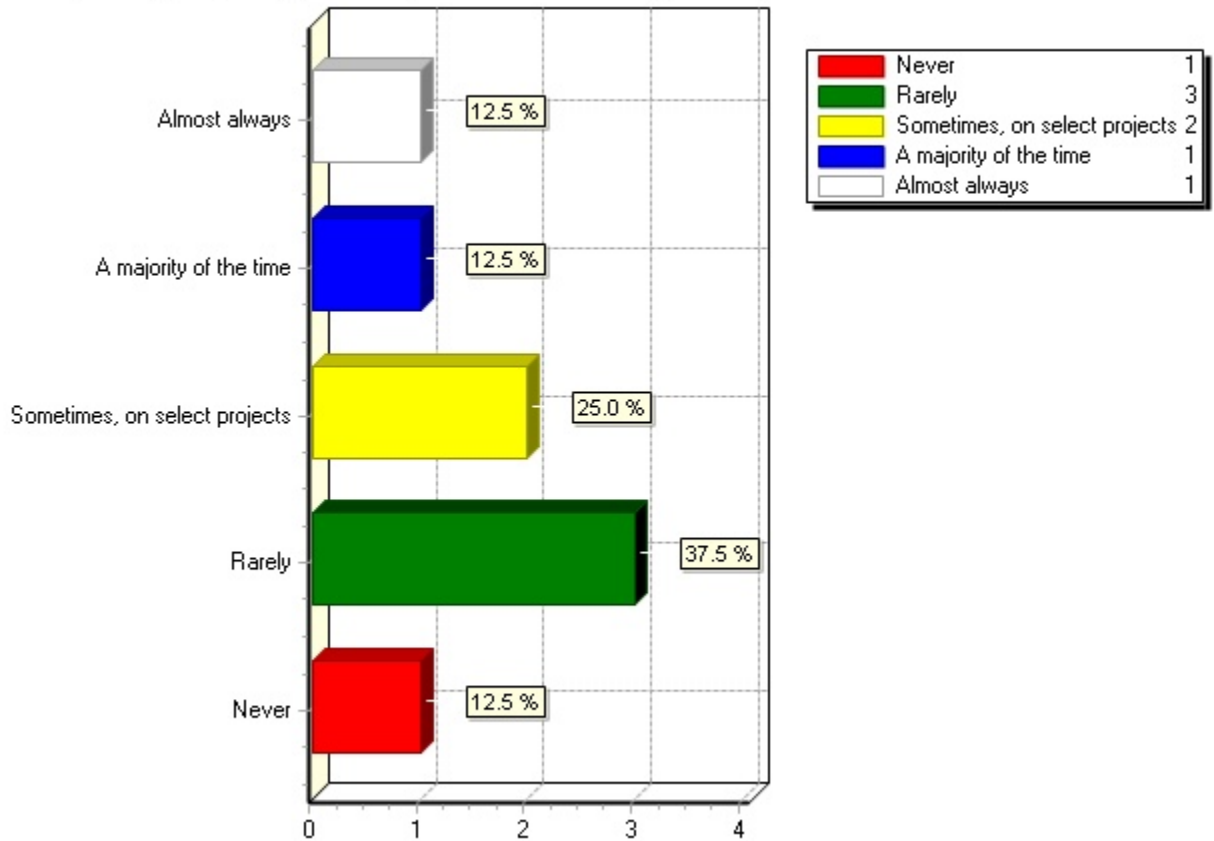


28.6) Review of plans & estimates(We outsource the following functions)



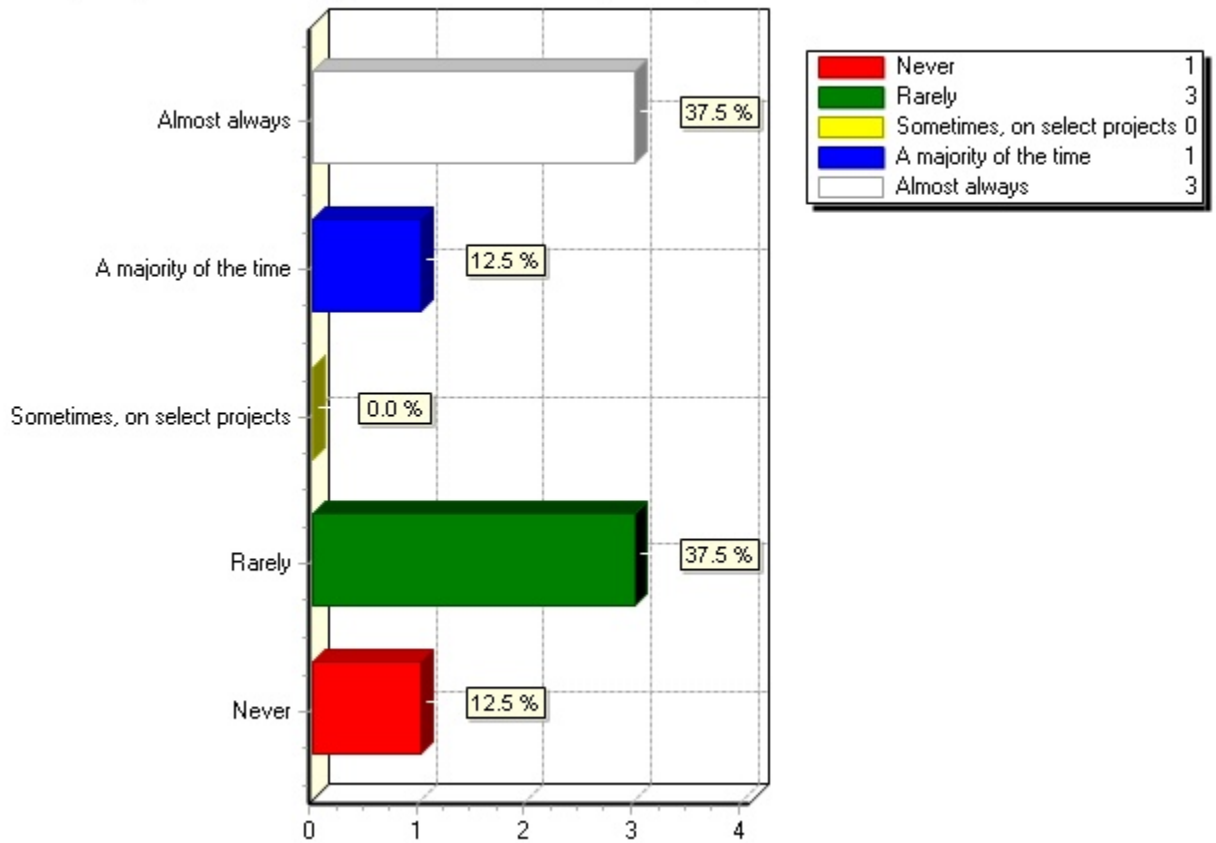
28.7) drafting of special provisions(We outsource the following functions)

28.7) drafting of special provisions(We outsource the following functions)



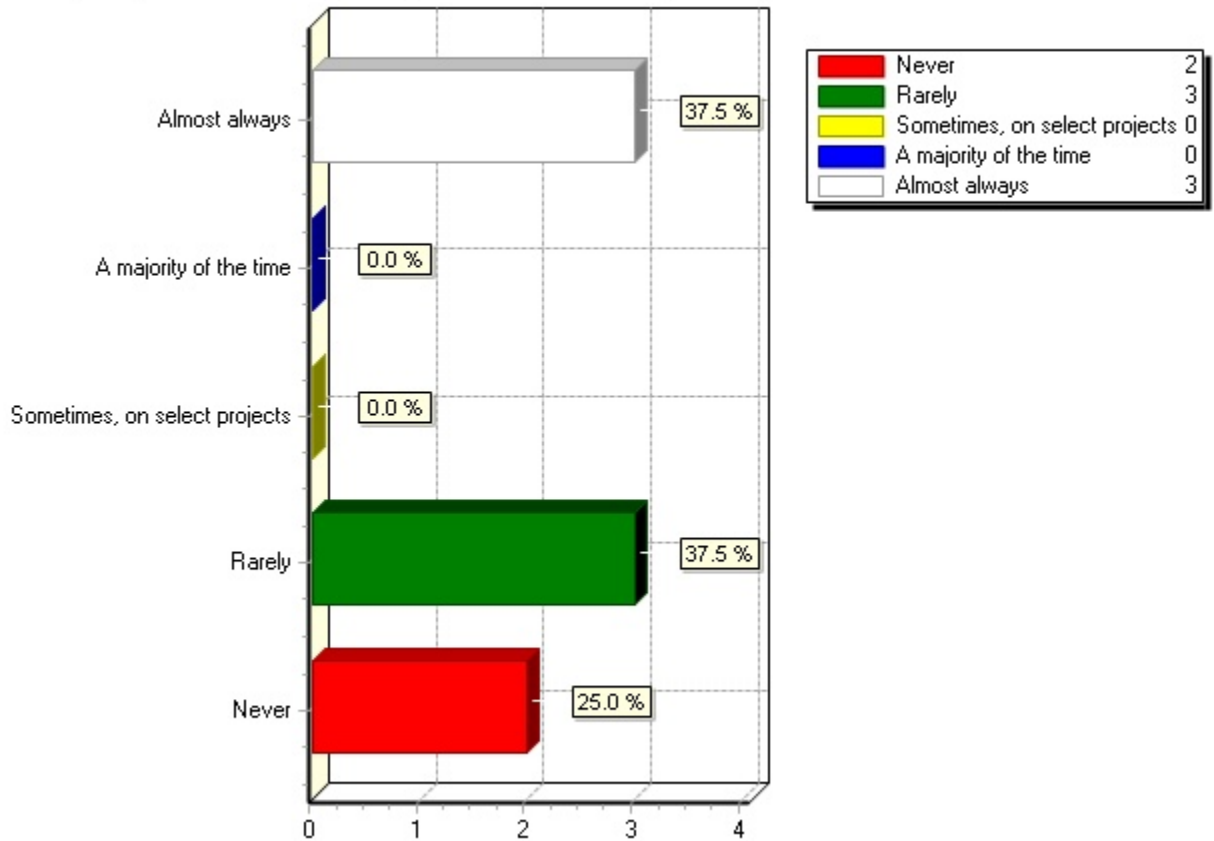
28.8) utility relocation design(We outsource the following functions)

28.8) utility relocation design(We outsource the following functions)



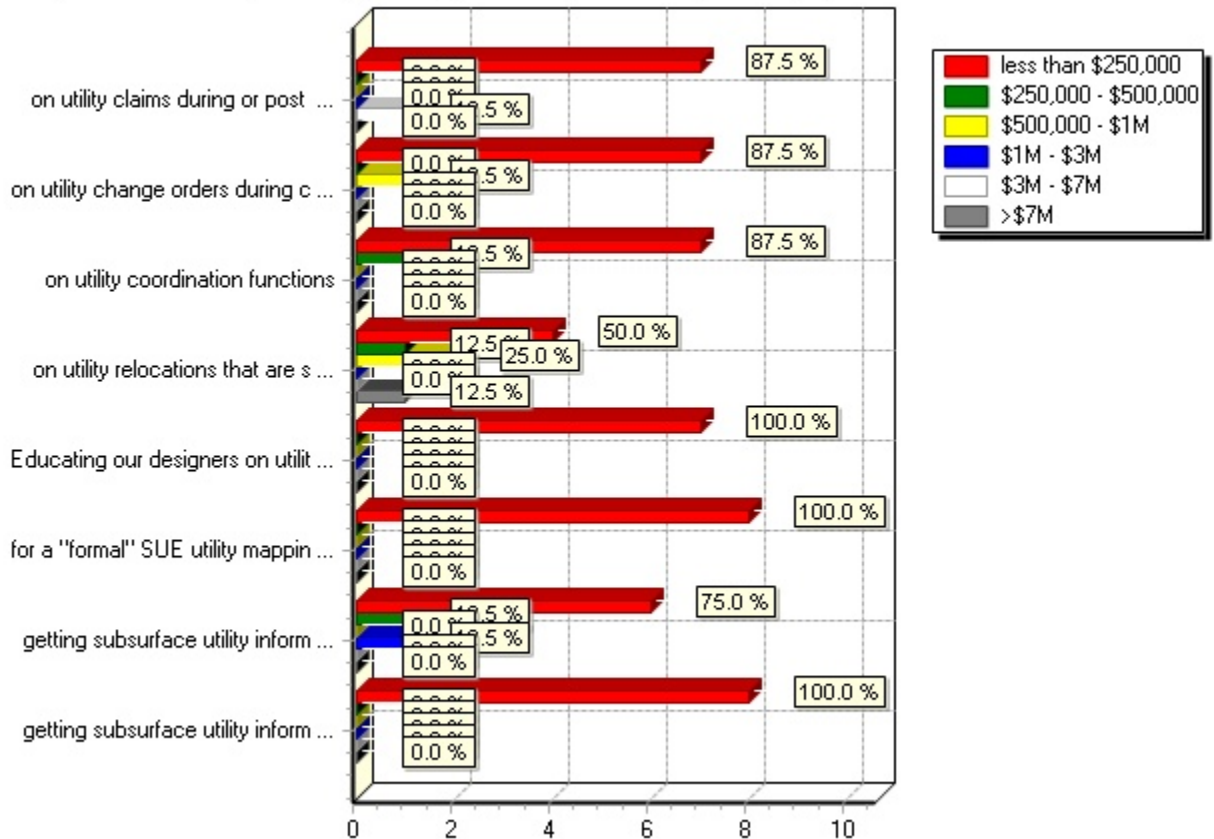
28.9) utility construction inspection(We outsource the following functions)

28.9) utility construction inspection(We outsource the following functions)



29) We estimate we (the DOT) spend approximately the following amounts per year. The official DOT response was:

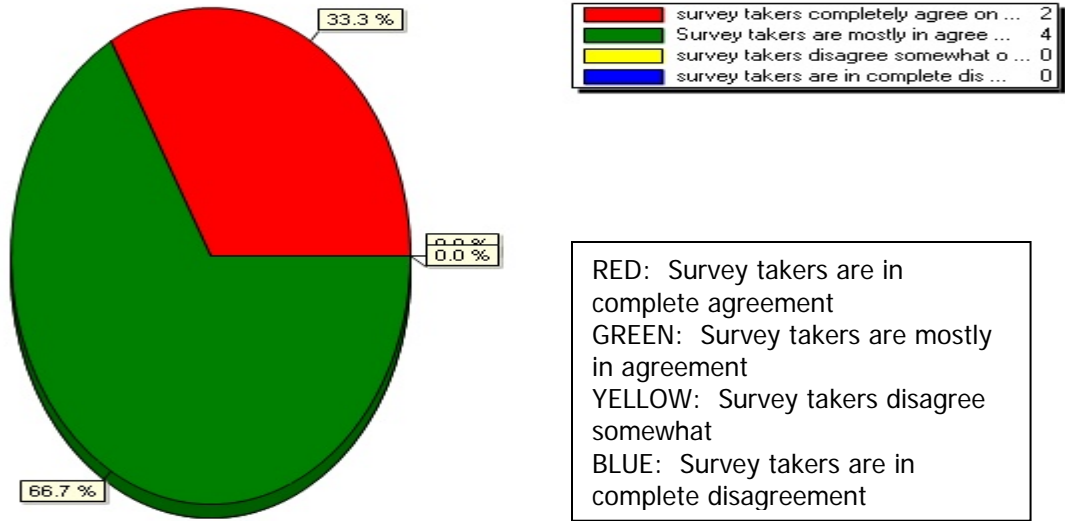
29) We estimate we (the DOT) spend approximately the following amounts per year



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.

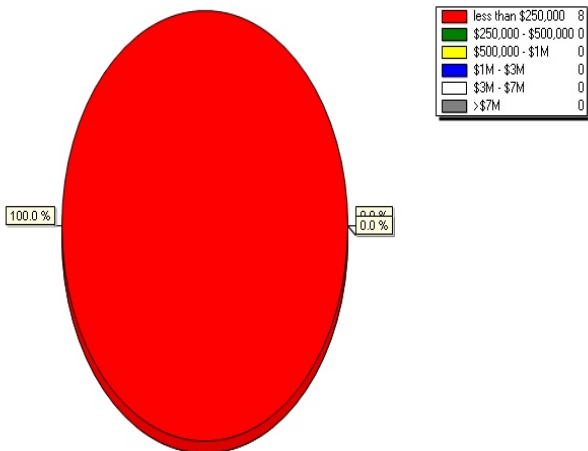
5.24) Question # 29(This question is to be filled out only by the person responsible to collate answ



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

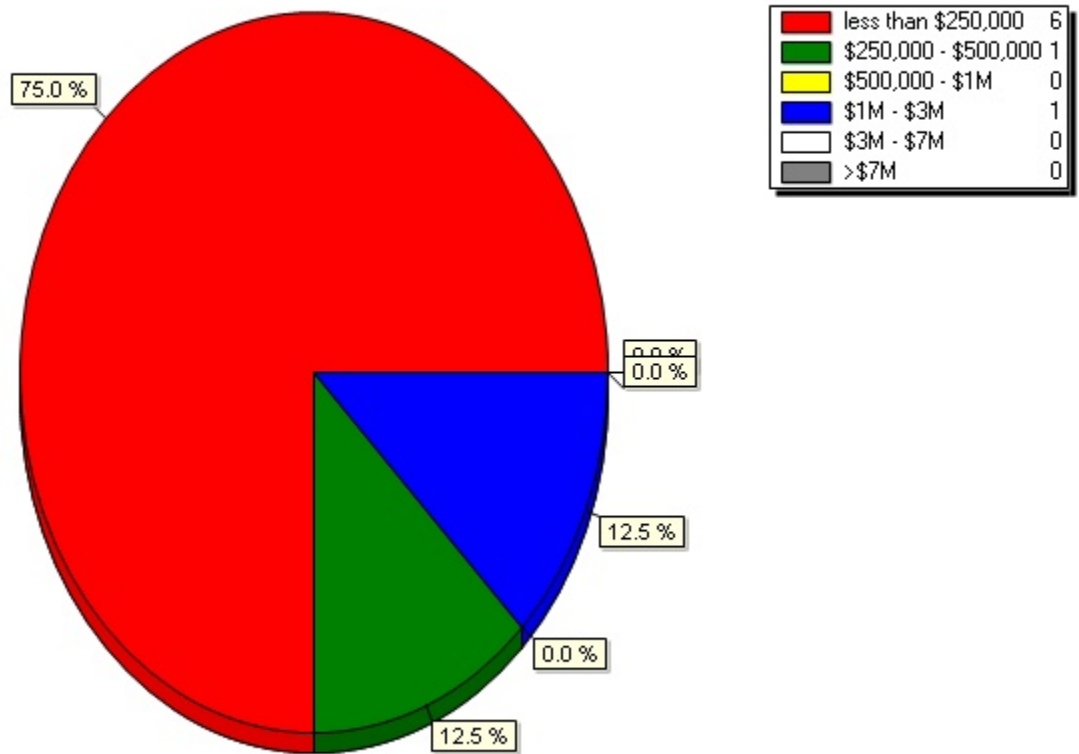
29.1) getting subsurface utility information depicted on design plans in-house(We estimate we (the DOT) spend approximately the following amounts per year)

29.1) getting subsurface utility information depicted on design plans in-house(We estimate we (the DOT) sp



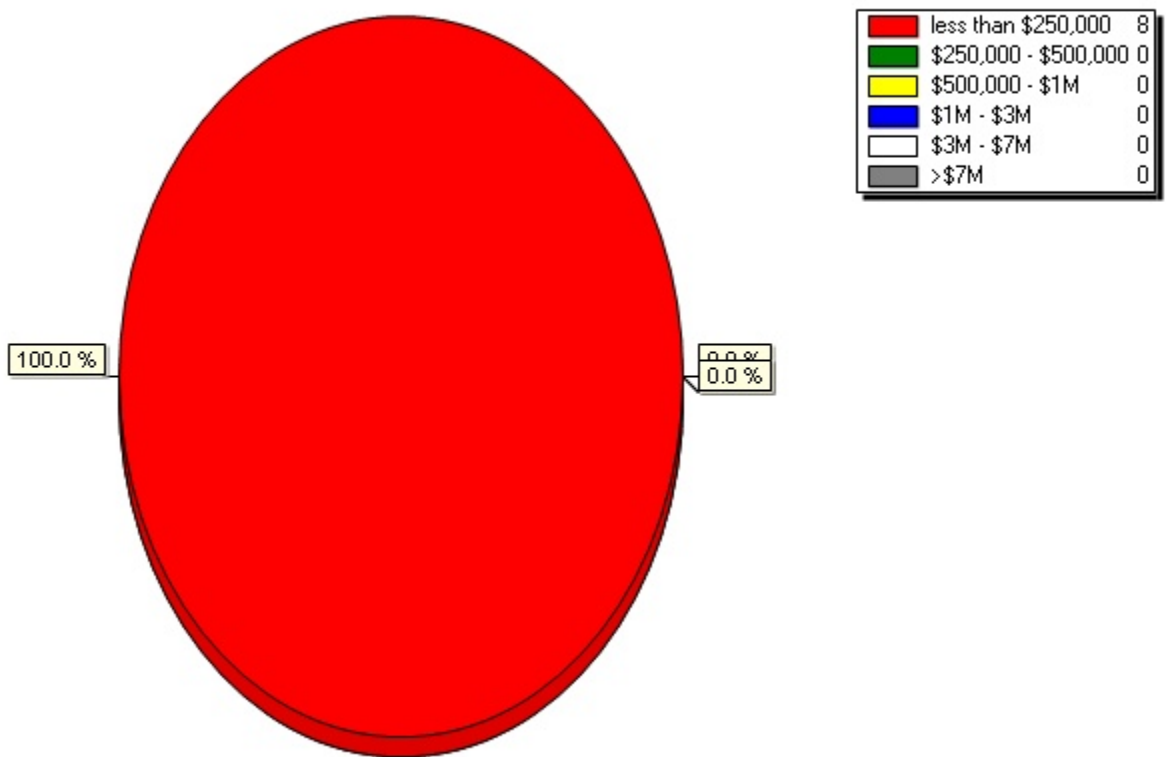
29.2) getting subsurface utility information depicted on design plans by consultant designers(We estimate we (the DOT) spend approximately the following amounts per year)

29.2) getting subsurface utility information depicted on design plans by consultant designers(We estimate



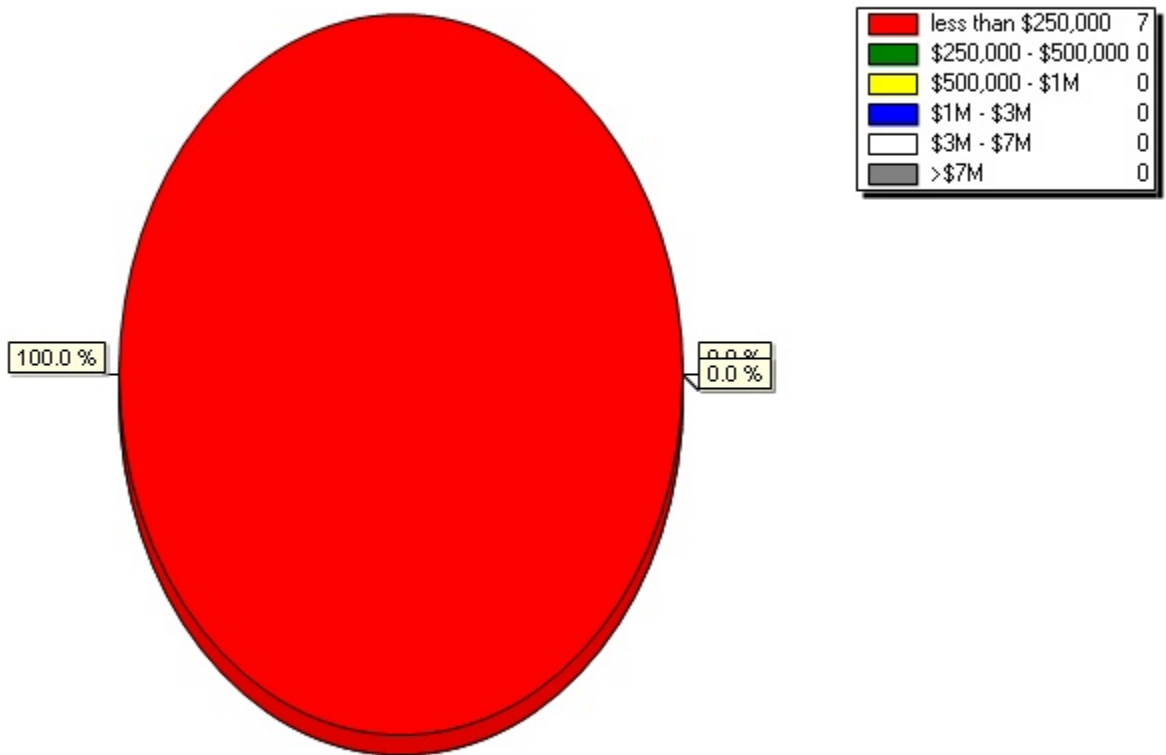
29.3) for a "formal" SUE utility mapping program(We estimate we (the DOT) spend approximately the following amounts per year)

29.3) for a "formal" SUE utility mapping program(We estimate we (the DOT) spend approximately the followin



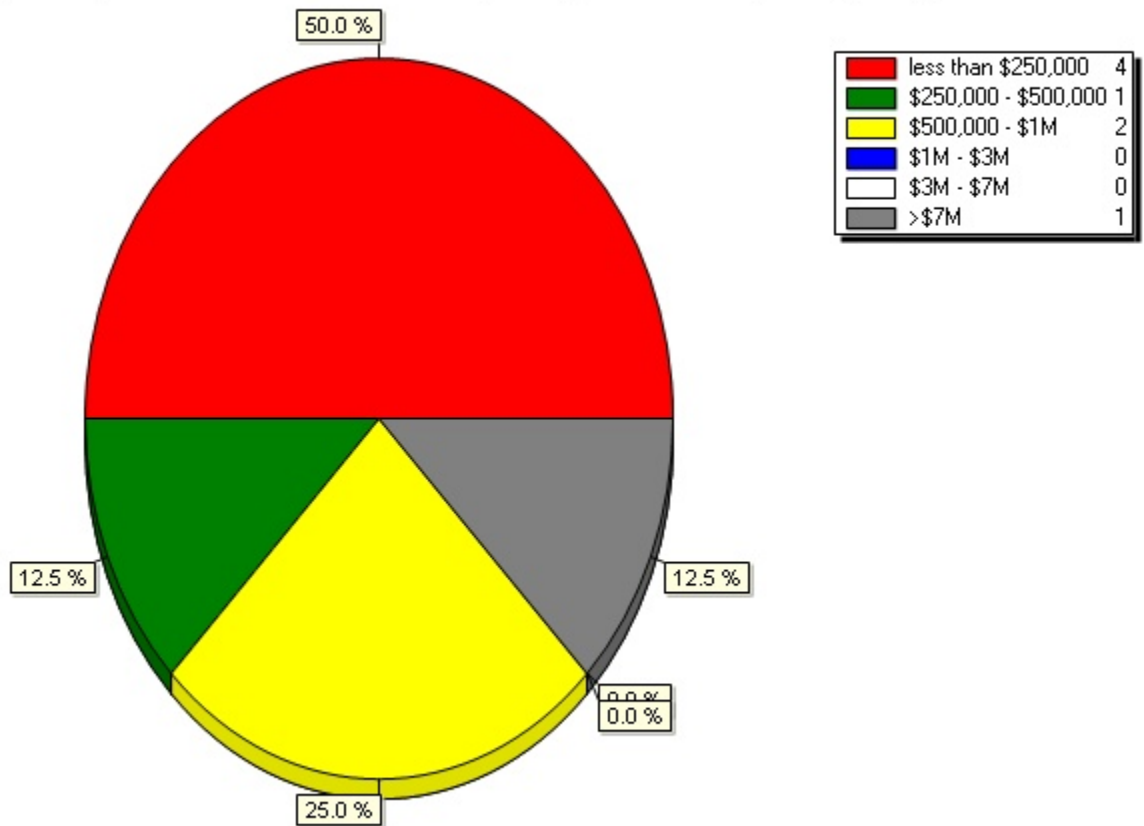
29.4) Educating our designers on utility issues(We estimate we (the DOT) spend approximately the following amounts per year)

29.4) Educating our designers on utility issues(We estimate we (the DOT) spend approximately the following



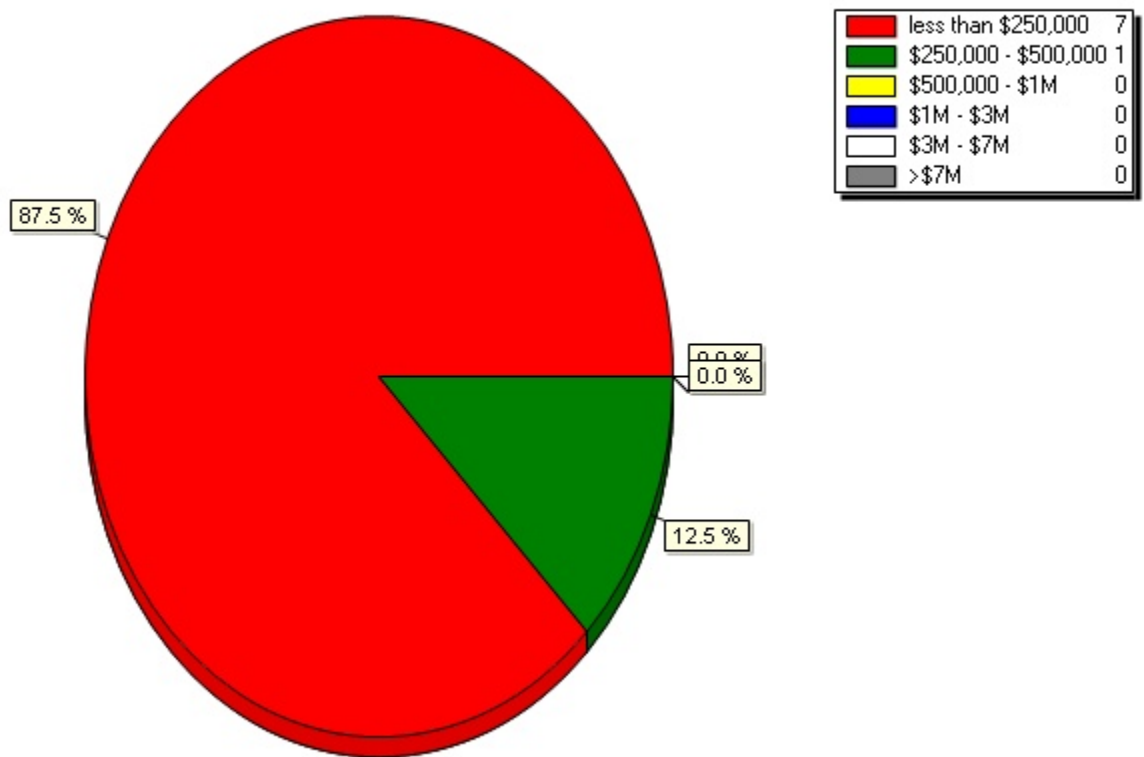
29.5) on utility relocations that are state cost responsibility(We estimate we (the DOT) spend approximately the following amounts per year)

29.5) on utility relocations that are state cost responsibility(We estimate we (the DOT) spend approximate



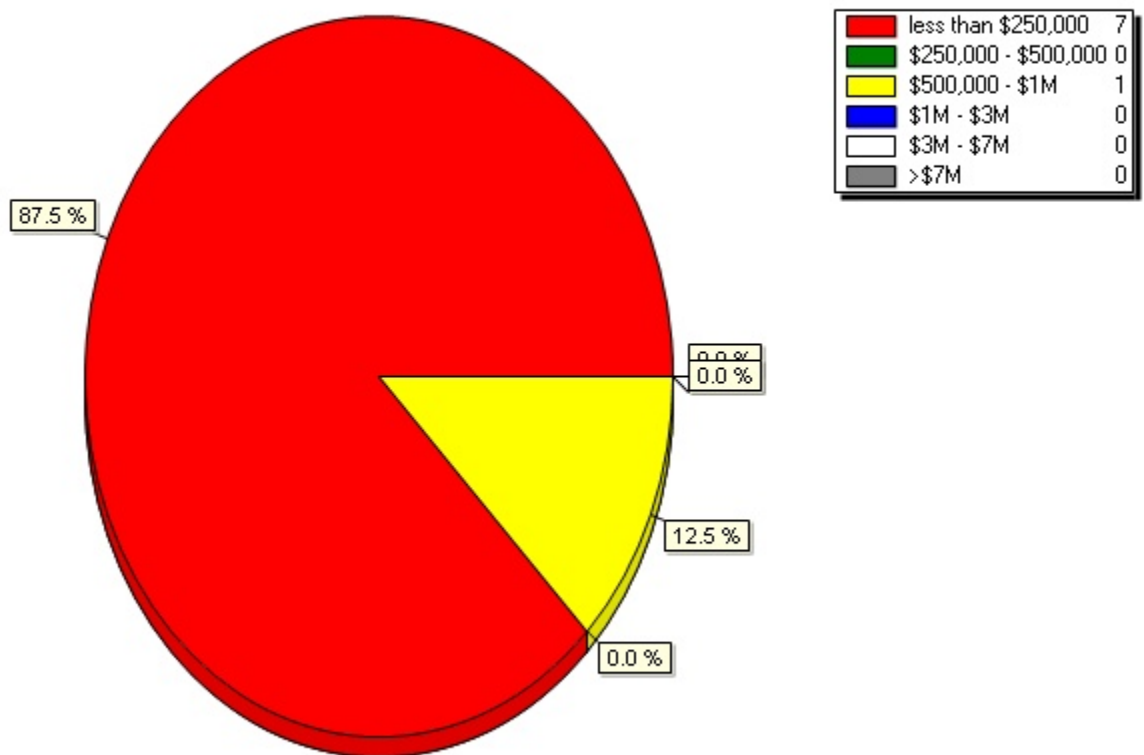
29.6) on utility coordination functions(We estimate we (the DOT) spend approximately the following amounts per year)

29.6) on utility coordination functions(We estimate we (the DOT) spend approximately the following amounts



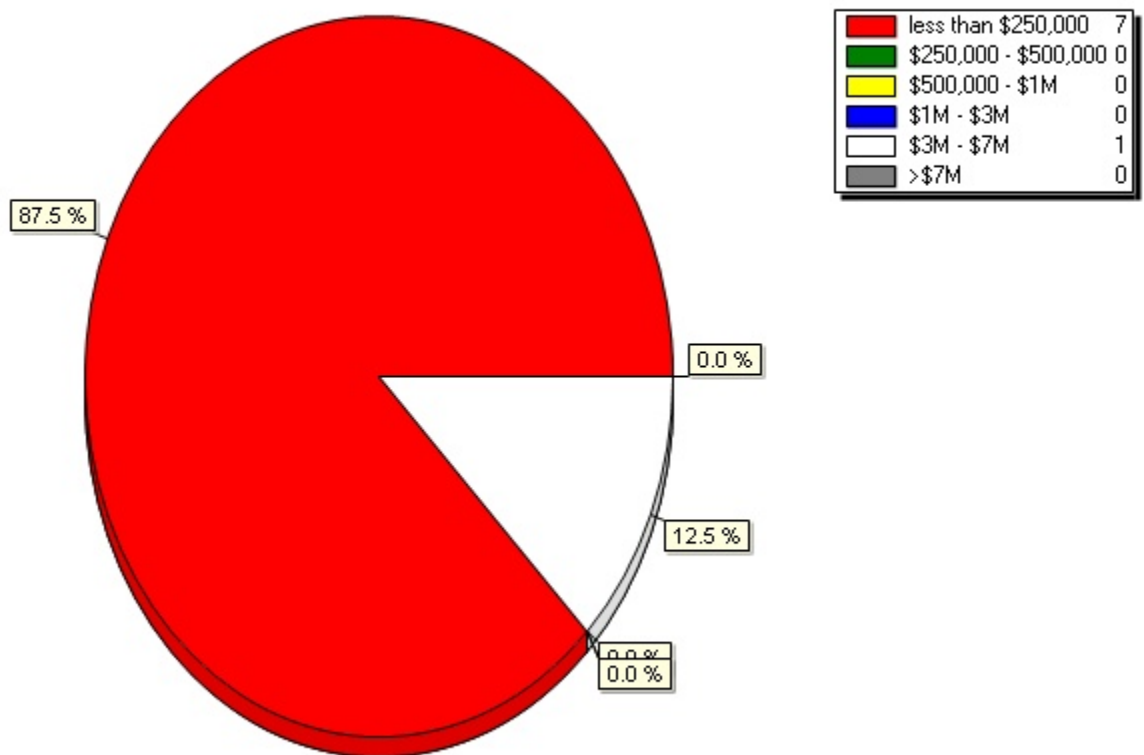
29.7) on utility change orders during construction(We estimate we (the DOT) spend approximately the following amounts per year)

29.7) on utility change orders during construction(We estimate we (the DOT) spend approximately the follow



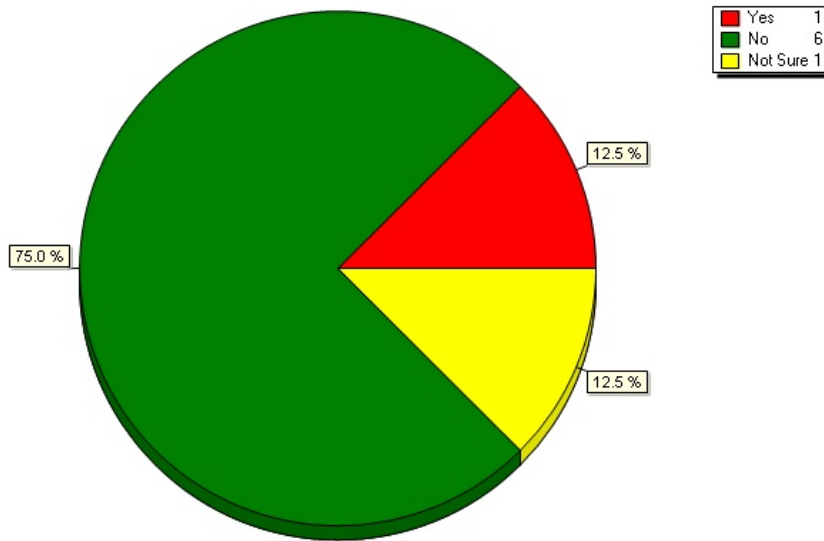
29.8) on utility claims during or post construction(We estimate we (the DOT) spend approximately the following amounts per year)

29.8) on utility claims during or post construction(We estimate we (the DOT) spend approximately the follo



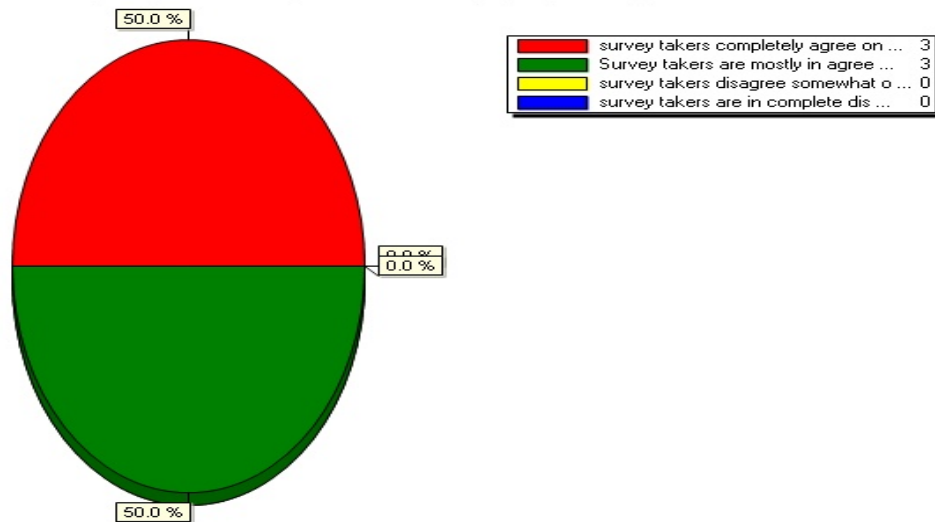
30) Do you have any case studies that evaluate the costs of designing a project around existing utilities versus relocating them? The official DOT response was:

30) Do you have any case studies that evaluate the costs of designing a project around existing utilities v



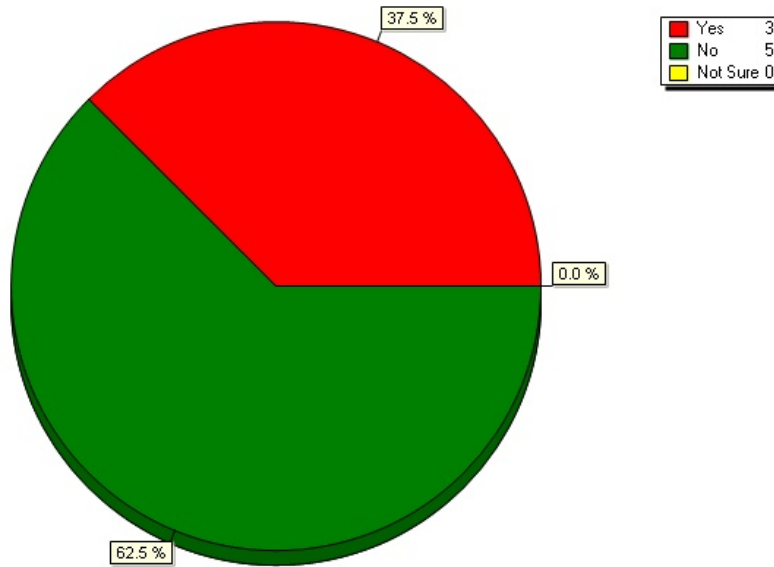
However, within the DOT there was the following diversity of opinion to the official response.

5.25) Question # 30(This question is to be filled out only by the person responsible to collate answ



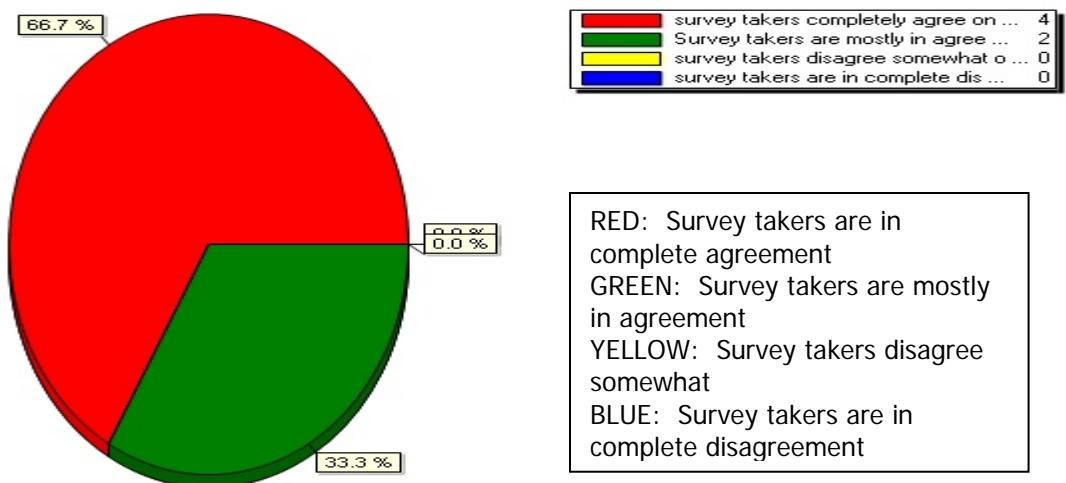
31) Do you have a database that includes project information on utility relocation costs? The official DOT response was:

31) Do you have a database that includes project information on utility relocation costs?



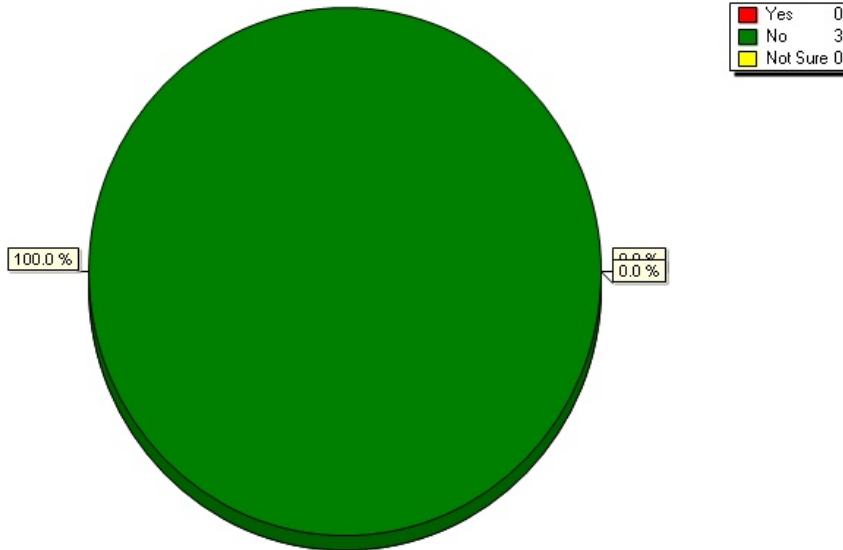
However, within the DOT there was the following diversity of opinion to the official response.

5.26) Question # 31 (This question is to be filled out only by the person responsible to collate answers)



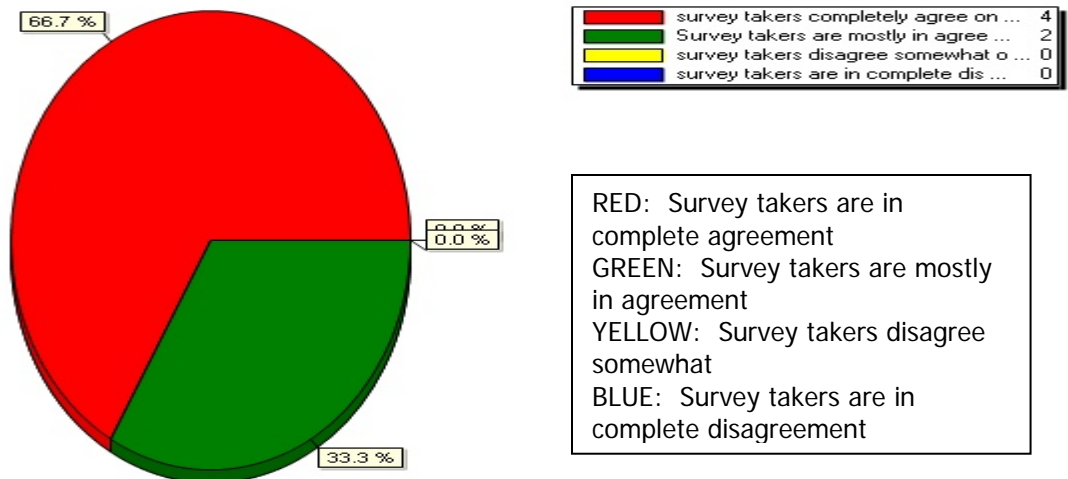
32) If Yes, does this database include both costs to the utility and costs to the state? The official DOT response was:

32) If Yes, does this database include both costs to the utility and costs to the state?



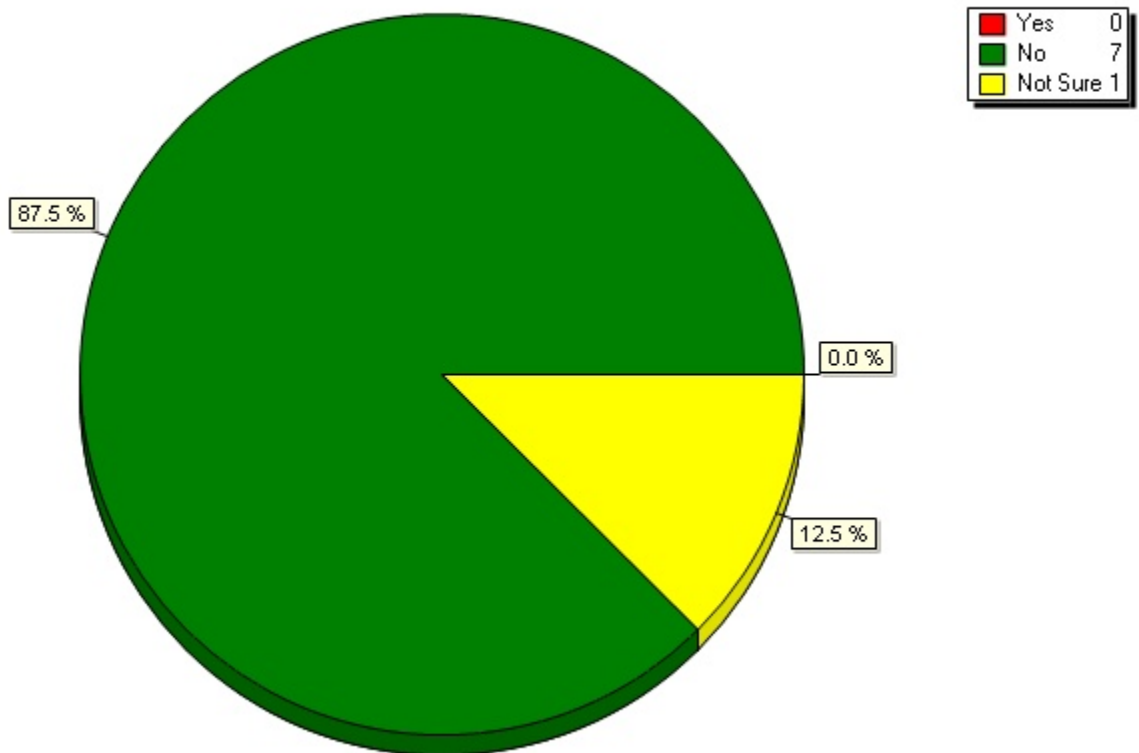
However, within the DOT there was the following diversity of opinion to the official response.

5.27) Question # 32 (This question is to be filled out only by the person responsible to collate answers)



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?

33) Do you have additional information not covered in this questionnaire that is pertinent to the issue of

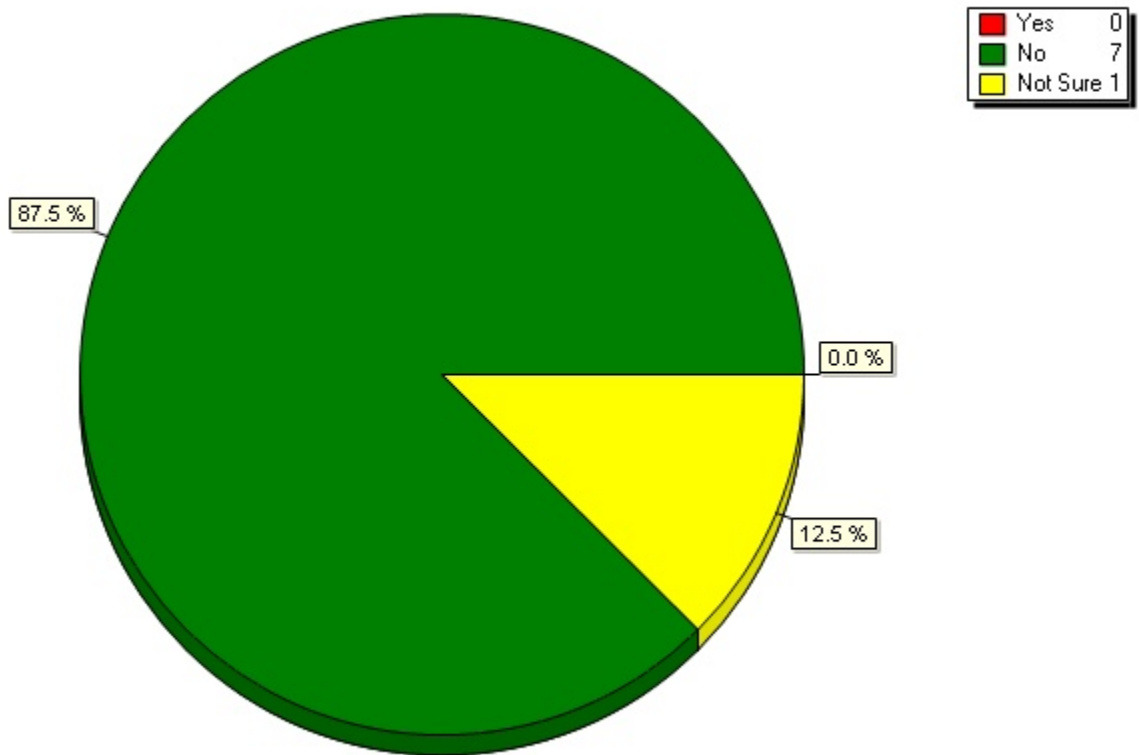


Other Responses:

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?

34) Do you have additional information that could benefit other DOTs on your DOT's process to decide wheth



Other Responses: