

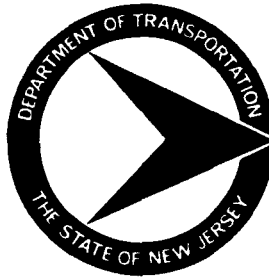
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PUBLIC RESPONSE TO NOISE BARRIERS

by

JACK H. SCIRE, MARK MARSELLA, and VINCENT F. NICHNADOWICZ

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In Cooperation With
U. S. Department of Transportation
Federal Highway Administration

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16. Abstract In order to assess the public attitude concerning traffic noise barriers, a questionnaire was distributed to householders living adjacent to four barriers. The locales studied were Rt. 17 in Ho-Ho-Kus, I-280 in Harrison, I-287 in Morristown, and the Garden State Parkway in Woodbridge. A total of 75 questionnaires were completed. Barrier construction, appearance, and placement were different from site to site, and the residential areas had disparate histories before the highways and/or barriers were constructed. Nevertheless, there was overall strong support for the barriers with regard to their effectiveness and appearance, and their positive effect on various activities engaged in by the people interviewed. However, only 48% of the respondents from Woodbridge and Morristown felt that the barriers at their locations provided at least a moderate reduction in noise. This was substantially lower than the overall average of 66%. Possible reasons for this reaction were 1) the barrier was in fact not effective; 2) intermittent truck noise at levels higher than those from the general traffic stream annoyed residents; 3) dissatisfaction with various barrier characteristics.					
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SUMMARY AND CONCLUSIONS

Summary

In order to supplement the large body of objective information about noise barriers, available from in situ studies in New Jersey and other states, field and laboratory experiments, and theoretical studies, subjective assessments of four barriers were obtained via questionnaires. These questionnaires were distributed by mail to 115 householders living in selected locations adjacent to the barriers on Rt. 17 in Ho-Ho-Kus, I-280 in Harrison, I-287 in Morristown, and the Garden State Parkway in Woodbridge. A cover letter, a free New Jersey road map, and a stamped, self-addressed envelope were included as incentives to complete and return the questionnaire. See Appendix I, page 21, for copies of the questionnaire and letter.

Despite these inducements, not all questionnaires were returned so that some follow-up effort was needed. This was accomplished mostly by telephone, but on some instances it was necessary to actually visit the premises in order to convince the householder to complete the questionnaire. Eventually a total of 75 were returned, which represented over 65% of all of the residents within 300 feet of the barrier at each location. Table I, page 13, shows the number of questionnaires returned from each site.

The questionnaire contained 55 questions, some having several choices for answers. This resulted in a large number of answers which were best displayed in two forms. Appendix II, page 31, displays the question numbers and answers from each location and the totals for all locations in the form of bar graphs. Appendix III, page 92, shows the questions themselves, the total number of answers for each choice of each question, and a rank for each choice. The rank indication allows for a rapid comparison of the relative importance of the choices within each question, and between choices for other questions. This is most important since there were several groups of unrelated questions, with no logical connection between the groups.

No attempt has been made to determine if trends or relationships can be cited between the answers to different questions, because of the large number of possible combinations of these answers. Rather, the more general trend concerning whether or not there was a general positive reaction to the barriers was examined.

Conclusions

Overall, there was considerable support for the barriers. Over 65% of the householders felt that the barriers provided moderate or better noise reduction; almost 80% felt that barrier appearance was at least acceptable; nearly 71% indicated that they liked the barrier. However, only 48% of the respondents in Woodbridge felt that the barrier provided at least moderate noise reduction. This is considerably below the the responses

for Morristown, Harrison, and Ho-Ho-Kus which were 68%, 67% and 82% respectively.

The low estimate of barrier effectiveness in Woodbridge is not due to an unacceptable appearance (Q.15) since the percentage of positive responses was above the average for all sites. Instead it may well reflect the fact that the barriers there provide virtually no reduction in traffic noise because of their inadequate height and incorrect placement, as shown in an earlier (objective) study.(2) This response to barrier effectiveness may also be related to the dissatisfaction with a number of barrier characteristics as cited in the comments in Appendix IV, page 108.

Despite the high percentage (67%) of responses from Morristown residents indicating moderate or better noise reduction, almost 81% also responded that the highway noise outside of their homes was either loud or very loud. Furthermore, 57% felt that the noise inside their homes was either loud or very loud. These negative responses may be in part due to the intermittent loud noise from individual trucks which occurs randomly at all hours, and can be especially annoying at night. There was also general dissatisfaction with the barrier, as cited in Appendix IV, page 108.

RECOMMENDATIONS

There is considerable information to be had from this study in the form of comparisons between questions, sites, Highway Groups and Ambient Groups, etc. Since these elements can be combined in numerous ways, it is recommended that they be combined and investigated as needed, to provide additional insight into public reaction and response to traffic noise barriers.

One general aspect which should be examined is the rather large percentage of negative responses to certain questions, and the large number of negative comments; e.g., the responses and comments from Morristown residents cited in the Conclusions. Even in cases where there is general support for the barrier, there are still strong negative responses from many of the residents. This is apparent from the Ho-Ho-Kus questionnaires which showed that nearly 88% of the residents liked the barrier. Nevertheless 59% offered negative comments about barrier effectiveness and construction.

It is also recommended that further information be obtained via questionnaires and/or interviews at public meetings prior to barrier construction. This activity could be followed up by after construction interviews and/or questionnaires, a year after the barrier is in place. This information would provide continuous and current insight into the public view of noise barriers.

IMPLEMENTATION

Copies of this report will be sent to the Bureau of Environmental Analysis, the Office of Community Involvement, and the appropriate Design and Construction units. These units should study the rather strong negative responses and comments in Appendix IV. One of the most common complaints was that the barrier itself was unattractive, or that (relatively) attractive vegetation had been removed during construction and not replaced, leaving residents with a blank concrete wall instead. Appearance is clearly one aspect of noise barriers that can be modified without any loss of barrier effectiveness, but it should be emphasized at public meetings that a visual screen of vegetation will not result in additional noise reduction.

A thorough study of both the comments and the ranking system for questionnaire responses in Appendix III should provide a basis for future barrier design.

INTRODUCTION

There is a great deal of objective information available concerning noise barriers from in situ assessments done in New Jersey and other states, from experimental studies done in both the field and laboratory, and from theoretical studies. In contrast, there is relatively little subjective information available, especially from the people living adjacent to the barriers which were constructed to protect them. This project was undertaken to supplement the wealth of objective information with further subjective assessments of selected barriers in New Jersey.

Several meetings were held during the early stages of the project in order to clarify the needs of the office of Community Involvement and the Bureau of Environmental Analysis, the client units. Concurrently, a literature search was conducted. Based on the findings of the meetings and the literature search, it was decided that the best way to collect subjective data was by a mail questionnaire. Telephone and in-person follow-up interviews would be conducted as needed to maximize the number of responses.

A draft questionnaire covering several aspects of noise barriers was prepared using information obtained from the literature search. It was designed not only to obtain information about the barrier itself, but also about how the various activities of the residents were affected by traffic noise, and about what aspects of their lives were affected by

the barrier. There was also a section for comments, so that areas omitted from the questionnaire could be addressed by the residents.

The draft was distributed to the client units and to several Research personnel for comment. We requested that each individual complete the questionnaire and record the time necessary for this task. The draft questionnaire was then edited to its final form and copies made for distribution to the public.

Four barrier sites were selected for data collection: the Garden State Parkway (GSP) in Woodbridge Township; I-280 in Harrison; I-287 in Morristown; Rt. 17 in Ho-Ho-Kus. Objective studies of the barriers on the GSP, I-280, and I-287 had already been completed, so that the objective findings were available for comparison to the subjective findings of this this study.

STUDY PROCEDURES

Data Collection

Householders to whom the questionnaires were mailed were divided into two groups at each of the four sites. Those in the Highway Group were located at 150 feet or less from the barrier; those in the Ambient Group were located between 150 and 300 feet from the barrier. This grouping was based on previous objective noise studies which indicated that the former group would be affected primarily by highway noise, while ambient noise would be the major noise source for the latter group. Figures 1 - 4, pages 9-12, show the data collection sites.

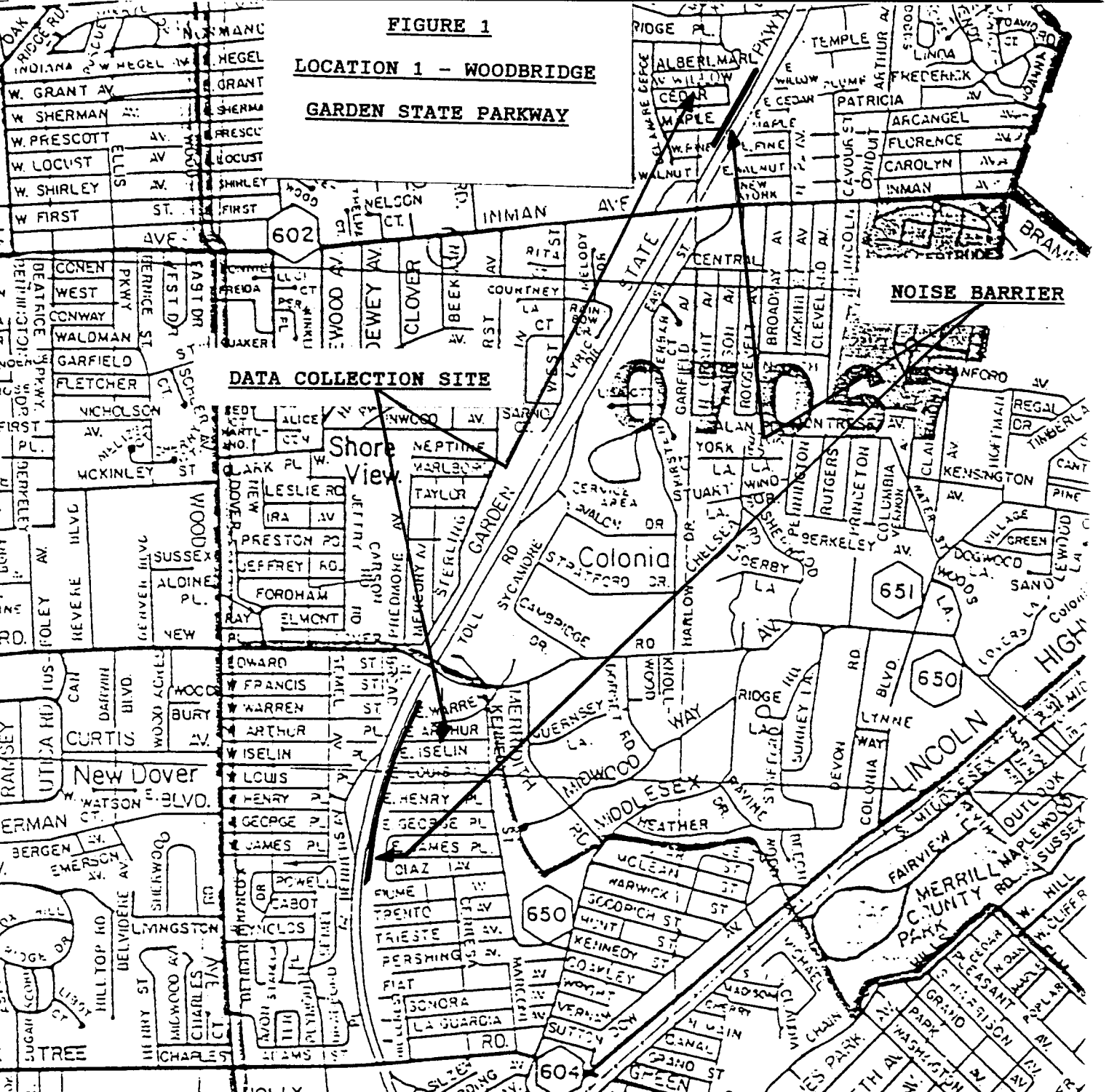
Both street and mailing addresses were obtained from municipal tax maps. House location relative to the barrier for the two groups was verified where necessary by using a survey wheel. A total of 115 residences received one questionnaire each, along with a brief cover letter and an official New Jersey road map as an incentive to complete the questionnaire. Copies of the cover letter and the questionnaire are in Appendix I, page 21.

After a period of about a month, residents who did not return the questionnaire were contacted by mail and/or by telephone and again requested to complete the questionnaire. In some instances this was followed by in-person interviews in order to impart to individuals the value we placed on their response to our request. A total of 75 completed questionnaires were eventually obtained, as shown in Table I, page 13.

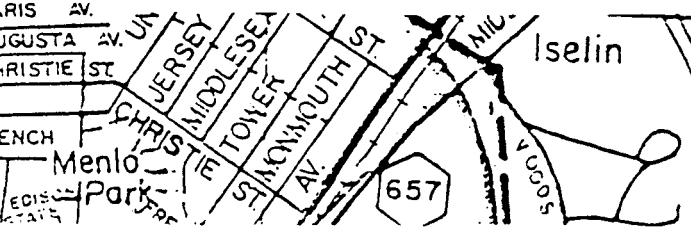
FIGURE 1

LOCATION 1 - WOODBRIDGE

GARDEN STATE PARKWAY



LOCATION 1 - Garden State Parkway, Woodbridge Township: East Iselin Pkwy., East Louis Pl., Willow St.; single family houses on dead end streets which abut barriers. Some houses have two stories. Barriers are concrete post-and-panel, placed on the right-of-way line, approximately 90 feet from the edge of the near lane. Heights of barrier tops above pavement are 5 feet, 6 feet, and 8.7 feet in the order given.

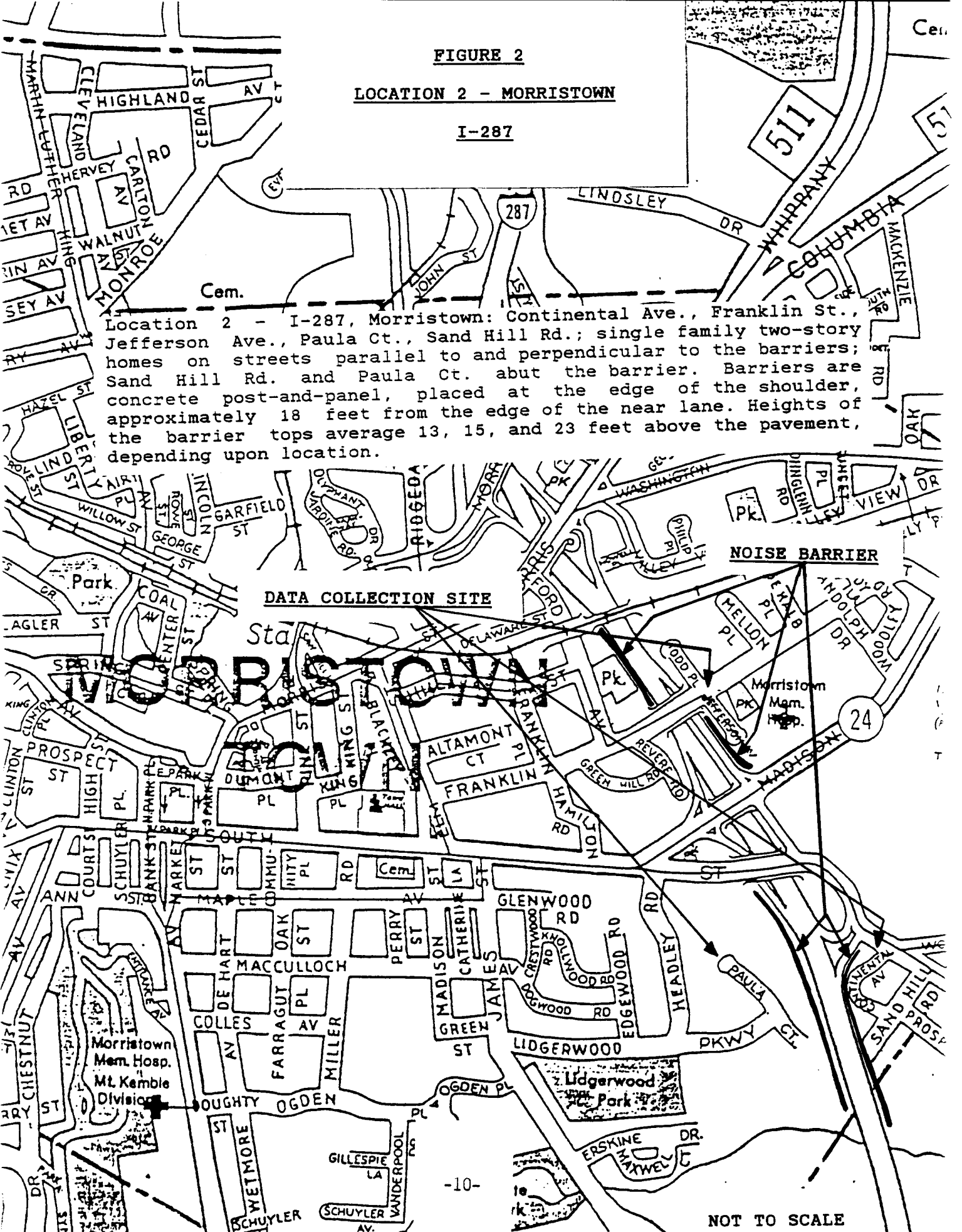


NOT TO SCALE

FIGURE 2

LOCATION 2 - MORRISTOWN

I-287



Location 2 - I-287, Morristown: Continental Ave., Franklin St., Jefferson Ave., Paula Ct., Sand Hill Rd.; single family two-story homes on streets parallel to and perpendicular to the barriers; Sand Hill Rd. and Paula Ct. abut the barrier. Barriers are concrete post-and-panel, placed at the edge of the shoulder, approximately 18 feet from the edge of the near lane. Heights of the barrier tops average 13, 15, and 23 feet above the pavement, depending upon location.

DATA COLLECTION SITE

NOISE BARRIER

24

NOT TO SCALE

FIGURE 3

LOCATION 3 - HARRISON

I-280



Location 3 - I-280, Harrison: single and multiple-family houses, having two or more stories, on a dead end street (Jersey St.) abutting the highway retaining wall at 45 degrees, and on Third St., at about 45 degrees to the highway and passing under it. The roadway is on an 18-foot high embankment, held by retaining walls, with a concrete parapet at the edge of the shoulder, 13 feet from the edge of the near lane. The barrier is constructed of steel posts which support panels of phenol-impregnated paper honeycomb sandwiched between sheet aluminum, placed on top of the parapet. The barrier top is 10 feet above the roadway and 28 feet above the pavement on Jersey St.

NOT TO SCALE

FIGURE 4

LOCATION 4 - HO-HO-KUS

ROUTE 17



Location 4 - Rt. 17, Ho-Ho-Kus: Addison Pl., Arbor Dr., Chestnut Pl., Gordon Rd.; single family two-story houses on streets parallel to and abutting the barrier. The barrier is 15 feet high, constructed of 8-inch high panels, stacked and placed between posts. It is tilted 6 degrees away from the roadway and is placed 20 feet from the edge of the near lane.

NOT TO SCALE

TABLE I

DISTRIBUTION OF COMPLETED QUESTIONNAIRES BY LOCATION

Location: #1 - GSP #2 - I-287 #3 - I-280 #4 - Rt. 17

Group:

Highway	10	11	12	8
<u>Ambient</u>	<u>10</u>	<u>12</u>	<u>3</u>	<u>9</u>
Total:	20	23	15	17

Data Reduction

Data reduction consisted primarily of tabulating the answers to the various questions. However, because there were answers to 55 questions from four sites, each site being divided into two sections (Ambient Group and Highway Group), a simple table containing totals was not suitable. Three formats for displaying Questions 5 - 55 were selected. Bar graphs were used to display the data from Questions 5 - 54 by site and subdivision for each question, along with the overall totals for those questions. These are in Appendix II, page 31. A second display of the overall totals for these questions is in Appendix III, page 92. These show the total number answering each question, the percentage who chose each of the multiple choice

answers, and a ranking of the percentages which can be used in analyzing the data.

The written comments submitted by residents, which are the "answers" to Question 55, are in Appendix IV, page 108. Some of these are reproduced verbatim, while others have been paraphrased to make them more concise.

Data Analysis

The tabulated answers were examined for patterns and trends. In some cases, site results were compared with overall results. For Woodbridge (GSP) and Harrison (I-280), some of the subjective results were compared with those obtained from earlier objective studies at these locations.

There are a large number of comparisons which could be made between sites, site subdivisions, overall results, and between questions. Only a few of these were examined, the remainder being left for readers to work out according to their own areas of interest.

RESULTS AND DISCUSSION

Several types of questions were included in the questionnaire. The first four pertained to personal information such as names, addresses, family size. etc. This information is not included in this report. Other types dealt with perceptions of the barrier and its effect on various aspects of home life; outdoor activities; indoor activities; the effect of the barrier on both types of activities; perceptions of traffic and other noise.

While all of these questions are useful in assessing public reaction to noise barriers, the various groups of questions are not necessarily related in ways which allow for a logical deduction of the answers in one group, based on the answers from another group. This is also true for questions within each group. For instance, if most householders answer that the appearance of the barrier is acceptable (perception of the barrier), there is no way to ascertain from this what their (collective) opinion is on whether or not the barrier has any effect on their use of the telephone (indoor activity). Furthermore, there is no way to determine their opinion concerning other perceptions about the barrier. Last, those householders who found the barrier appearance acceptable may not be the same ones who held the majority opinion on other questions.

Questions 5 through 54 each have several choices for answers. To facilitate comparisons between the answers to the different groups of questions, each choice for each question is ranked in relation to the other choices for that question, Rank 1 being the choice of the highest number of householders. Thus, even though the same individuals may not have always had their answers in the highest rank, it is possible to obtain a profile of the opinions of a fictitious householder whose answers were always included in Rank 1.

Three important questions were numbers 11, 15, and 54. For Question 11, almost 66% of the people felt that the noise barrier resulted in at least a moderate reduction of noise; for Question 15, 80% felt that the appearance of the barrier was acceptable; for Question 54, nearly 71% indicated that they liked the noise barrier.

More generally, a review of the totals and ranks shown in Appendix III, page 92, shows that fifty percent or more of the householders responding felt that the barrier:

Improved privacy, sleeping, family and pet safety;

Improved outdoor conversation and relaxation;

Lessened the problem of litter from vehicles;

Did not give a closed-in feeling, or limit or restrict view;

Had no effect on indoor conversation or telephone use; use of television, radio, or stereo; reading;

Had no effect on yard or building maintenance, plant growth, drainage, or flooding;

Had no effect on emergency vehicle access to the highway or to residences;

Had no effect on family or pet health.

Considering that these results are from four disparate groups of people who were expressing opinions about four barriers which differ in appearance, configuration, and placement, it would appear that there is strong support for noise barriers, irrespective of their characteristics.

Despite the indication of overall support for noise barriers, there are few notable deviations from this trend. Two of these are from the GSP (Woodbridge). At this location only 48% of the responding householders felt that the barrier provided at least a moderate reduction in noise (Q.11), as compared to the 66% average for all four sites. This is not surprising, since the NJDOT evaluation of these barriers showed that they were not effective in reducing noise levels, because of their incorrect placement and low height.(2) Also at this location, only 53% answered that they liked the barrier, compared to 71% overall (Q.54). Since 80% felt the appearance was at least acceptable (Q.15), it must be surmised that relatively low positive response to Q.54 was related to something other than this characteristic. The comments of the residents listed in Appendix IV, page 108, cite dissatisfaction with a variety of barrier characteristics, which would indicate that the response to Q.54 is not due to a single factor. This dissatisfaction may also have manifested itself in Q.11, so that the low positive response may be due in part to characteristics

which have nothing to do with the actual effectiveness of the barrier.

Householders along I-287 in Morristown also responded with only 48% indicating that the barrier was providing at least moderate noise reduction (Q.11). Their responses to Q.15 and Q.54 agreed with the average, indicating that the reason for this below average response to Q.11 can be found elsewhere in the answers to other questions, or that it is a result of some factor not covered by the questionnaire.

A 1988 NJDOT (objective) noise study conducted at the same locales in Morristown showed that the reduction in noise levels (in Leq) due to the barriers ranged from 2 - 11 dB, with an average of 7.2 dB.(5) The outdoor Leq levels after barrier construction ranged from 56 - 64dBA, with an average of 59.4dBA. The reduction in L10 was from 2 - 12dB with an average of 7.8dB, and the average outdoor L10 was 61.9dBA. Certainly there is nothing in these results to support 52% of the respondents indicating that the barrier provided less than moderate noise reduction.

On-site subjective inspections were conducted subsequent to tabulating the questionnaire responses to subjectively verify the 1988 findings. There was no difficulty in hearing conversational speech and the noises of normal neighborhood activities at any of the sites. However, highway noise at a continuous low level was clearly audible at all locations, with occasional trucks creating distinctive higher level noise. The L1 levels, which range from 64 - 70dBA, are indicative of this truck noise. Thus the dissatisfaction with the barrier may in

part be a result of these intermittent and unusually loud noises occurring randomly at all hours. These truck noises may be especially irritating at night, when the residents are in their second story bedrooms. Some of the comments in Appendix IV, page 108, cite truck noise as a problem, and indicate some dissatisfaction with the noise barrier in general.

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APPENDIX I

COVER LETTER AND QUESTIONNAIRE



State of New Jersey
DEPARTMENT OF TRANSPORTATION

Robert A. Innocenzi
Acting Commissioner

1035 PARKWAY AVENUE
CN 600
TRENTON, NEW JERSEY 08625

October 31, 1989

Dear Resident:

The New Jersey Department of Transportation is conducting an ongoing project of evaluating existing highway noise barriers in order to improve the design of future noise barriers. You would greatly assist us in this project by completing the enclosed questionnaire. Please return the completed questionnaire in the enclosed envelope. If we do not receive your completed questionnaire within three weeks, you will be contacted by a representative of the Department who will arrange to pick up the questionnaire from you, and assist you in its completion.

All residents selected to participate in the survey will receive a complimentary official New Jersey Department of Transportation road map.

Very truly yours,

Jack H. Scire
Assistant Engineer Transportation
Division of Research

Enclosures
JHS:jf

NOISE BARRIER QUESTIONNAIRE
NEW JERSEY DEPARTMENT OF TRANSPORTATION
DIVISION OF RESEARCH AND DEMONSTRATION
BUREAU OF TRANSPORTATION TECHNOLOGY RESEARCH

1. Please print your address: _____
Number, Street, Town, Zip Code
2. How long have you lived at this address? _____ years
3. How many people live at this address? _____
4. Including yourself, of the people living at this address, how many are:
 - a) Female _____
 - b) Male _____
 - c) Under Age 5 _____
 - d) Age 5 - 18 _____
 - e) Age 19 - 65 _____
 - f) Over Age 65 _____
5. Are you aware of a highway noise barrier in the vicinity of your residence?
 - a) Yes _____
 - b) No _____ (Skip to 7)
6. Did you live at this residence prior to the installation of the highway noise barrier?
 - a) Yes _____
 - b) No _____
 - c) Not Sure _____

7. How often do you use outdoor areas around your residence for work or recreation, assuming fair weather?
- a) Nearly every day _____
 - b) Once or twice a week _____
 - c) Once or twice a month _____
 - d) A few times a year _____
 - e) Almost never _____
8. When are your outdoor activities? Check all that apply.
- a) Primarily weekdays _____
 - b) Primarily weekday evenings _____
 - c) Primarily weekends - days _____
 - d) _____ evenings _____
 - e) No Particular time _____
9. How would you describe aircraft traffic flying over your residence?
- a) Heavy _____
 - b) Moderate _____
 - c) Light _____
10. How would you describe, overall, the noise from the aircraft flying over your residence?
- a) Very annoying _____
 - b) Moderately annoying _____
 - c) Not annoying _____
- (If answer to #5 is no, skip to #12)

11. To what extent do you feel the noise barrier reduces highway traffic noise?
- a) Very much _____
 - b) Moderately _____
 - c) Very little _____
 - d) No at all _____
 - e) No opinion _____
12. How would you describe the traffic noise from the highway outside your residence?
- a) Very loud _____
 - b) Loud _____
 - c) Moderate _____
 - d) Quiet _____
 - e) Very quiet _____
13. How would you describe the traffic noise from the highway inside your residence with all doors and all windows shut?
- a) Very loud _____
 - b) Loud _____
 - c) Moderate _____
 - d) Quiet _____
 - e) Very quiet _____
14. Rank the following as to the annoyance to you (1, the most annoying, to 10 being the least annoying.)
- a) _____ Neighborhood noises (children, radios, dogs barking, lawnmowers, etc.)
 - b) _____ Airplane noise
 - c) _____ Traffic noise from the highway
 - d) _____ Sirens
 - e) _____ Industrial/factory noise
 - f) _____ Local traffic noise (non-highway)

15. How do you feel about the appearance of the noise barrier?
- a) Attractive _____
 - b) Ok _____
 - c) Unsightly _____
16. What color do you prefer for the noise barrier?
- a) Black _____
 - b) White _____
 - c) Gray _____
 - d) Brown _____
 - e) Green _____
 - f) Yellow _____
 - g) Blue _____
 - h) Red _____
 - i) Orange _____
 - j) Other _____
17. Does the noise barrier give you a closed-in feeling?
- a) Very much so _____
 - b) Somewhat _____
 - c) Not at all _____
18. Do you feel that the noise barrier limits or restricts you view?
- a) Very much so _____
 - b) Somewhat _____
 - c) Not at all _____

19. How do you feel the noise barrier has affected the value of your property?

- a) Decreased it substantially _____
- b) Decreased it slightly _____
- c) No affect on it _____
- d) Increased it slightly _____
- e) Increased it substantially _____

20. Had the noise barrier never been built, to what extent do you think you would use your yard for outdoor activities compared to your present use?

- a) Much more _____
- b) Slightly more _____
- c) The same _____
- d) Slightly less _____
- e) Much less _____
- f) No opinion _____

21. When does the highway noise seem loudest?

- a) Sunny days _____
- b) Rainy days _____
- c) No opinion _____

22. What are the times of the day that the noise from the highway is particularly noticeable?

- a) Before 8 a.m. _____
- b) 8 a.m. - Noon _____
- c) Noon - 5 p.m. _____
- d) 5 p.m. - 11 p.m. _____
- e) After 11 p.m. _____

(If answer to #5 or #6 is no or not sure, skip to 39)

23. How do you feel that the noise barrier has affected these highway-related conditions compared to the situation where no noise barrier was present?

	A Worse	B No Effect	C Improved
24. Highway dust and dirt	_____	_____	_____
25. Headlight glare	_____	_____	_____
26. Drainage/Flooding	_____	_____	_____
27. Litter from vehicles	_____	_____	_____
28. Highway noise	_____	_____	_____
29. Exhaust fumes	_____	_____	_____
30. Privacy	_____	_____	_____
31. Plant growth	_____	_____	_____
32. Emergency vehicle access to highway	_____	_____	_____
33. Emergency vehicle access to your residence	_____	_____	_____
34. Out of control vehicles entering your property	_____	_____	_____
35. Family safety	_____	_____	_____
36. Family health	_____	_____	_____
37. Pet safety	_____	_____	_____
38. Pet health	_____	_____	_____

39. Have you taken steps to reduce the amount of noise you hear from the highway?

a) Yes _____

b) No _____ (If no, skip to 41)

If yes, what specific things did you do? Please check all that apply.

c) Plantings _____

d) Erecting fence or wall _____

- e) Installing air conditioning-Central _____
- f) Window Unit _____
- g) Keeping windows closed _____
- h) Installing insulating drapes _____
- i) Adding insulation to exterior walls _____
- j) Adding insulation to interior walls _____
- k) Installing aluminum or vinyl siding _____
- l) Replacing standard windows with insulated/thermopane windows _____

40. (Refer to preceding question #39) To what degree were the preceding steps effective?

- a) Very effective _____
- b) Moderately effective _____
- c) Not effective _____

(If answer to #5 is no, skip to #54.) (If answer to #6 is no or not sure, skip to #54)

41. How do you feel that the noise barrier affects these highway related conditions, compared to the situation where no noise barrier was present?

	<u>A</u> <u>More difficult</u>	<u>B</u> <u>No effect</u>	<u>C</u> <u>Improved</u>
42. Conversation indoors	_____	_____	_____
43. Conversation outdoors	_____	_____	_____
44. Use of television/radio/ stereo	_____	_____	_____
45. Use of telephone	_____	_____	_____
46. Reading	_____	_____	_____
47. Outdoor activities	_____	_____	_____
48. Relaxing indoors	_____	_____	_____
49. Relaxing outdoors	_____	_____	_____

50. Sleeping _____
51. Leaving windows open _____
52. Yard maintenance _____
53. Building maintenance _____

54. In general, how do you feel about a noise barrier?

- a) Strongly like _____
- b) Like _____
- c) No opinion _____
- d) Dislike _____
- e) Strongly dislike _____

55. Please feel free to submit any additional comments about the noise barrier as to barrier improvements, suggestions, etc. Your comments will be greatly appreciated.

APPENDIX II

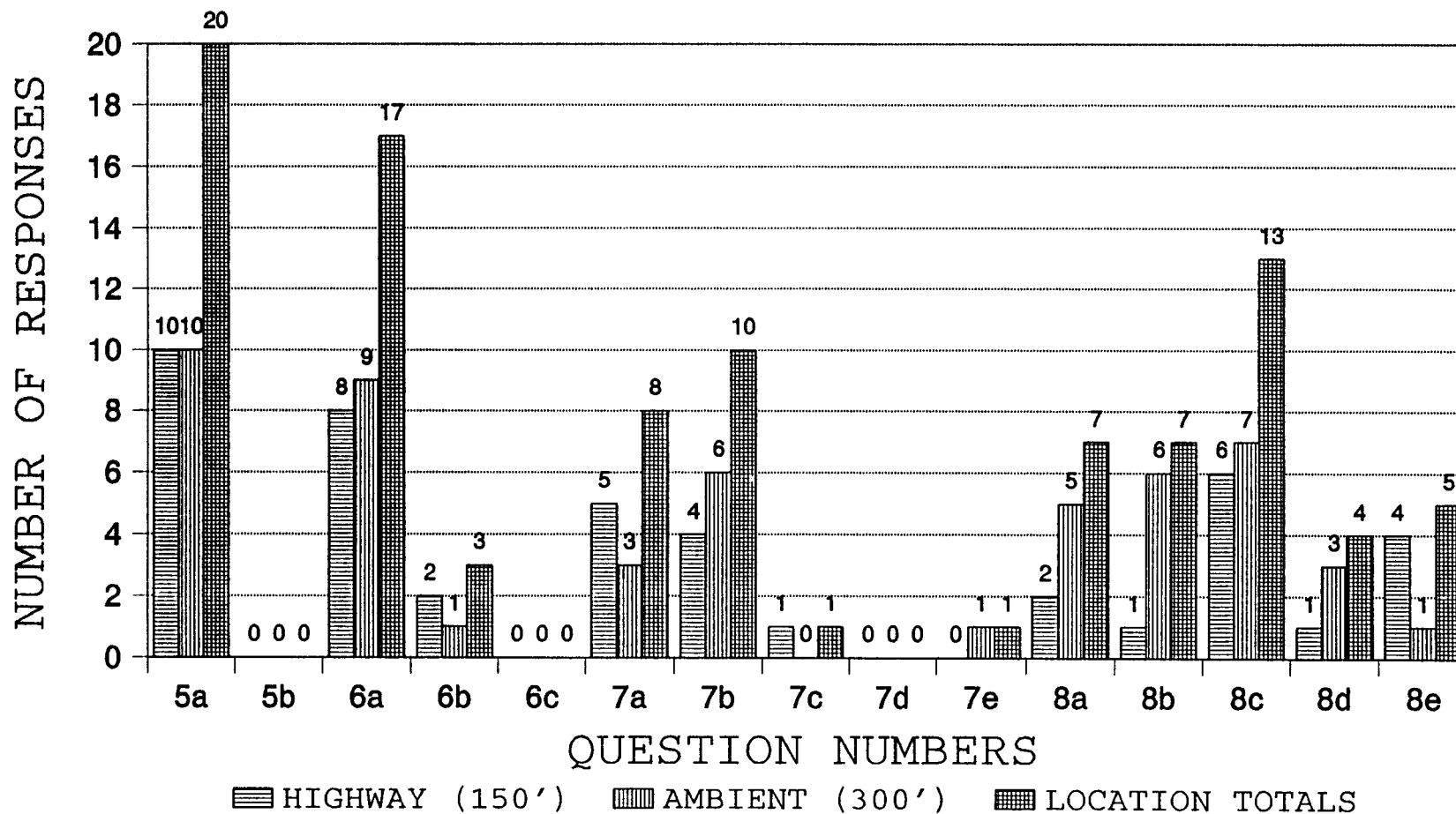
DATA TABULATION BY LOCATION AND BY OVERALL TOTALS

These bar graphs cover the responses to Question 5 through Question 54, by location. Total responses to each part of each of question are indicated for the Highway Group (150'), the Ambient Group (150' - 300'), and the combined total of the two groups. In addition, the totals for all locations are shown using the same format.

TOTALS - LOCATION 1

WOODBRIIDGE - GSP

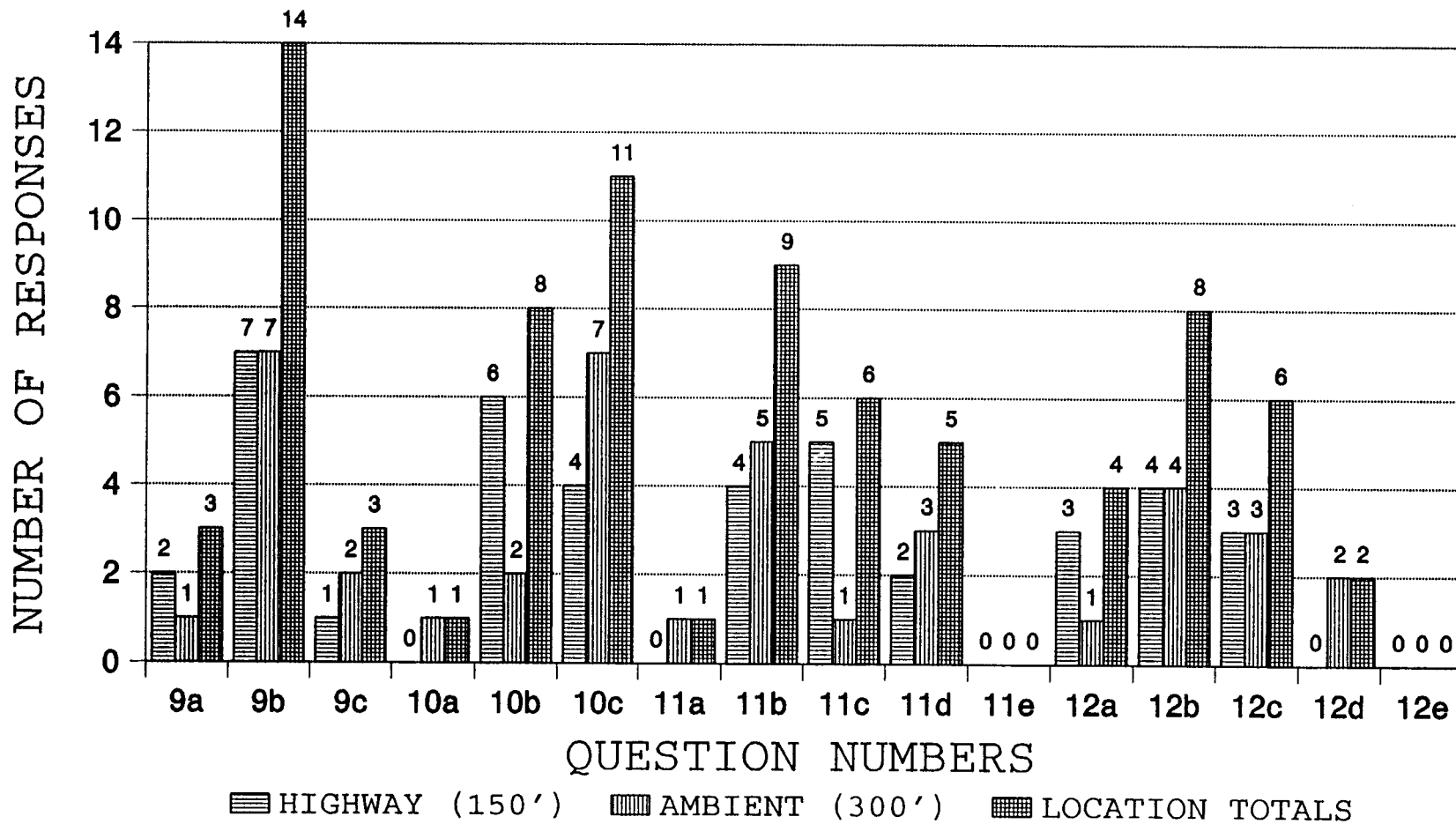
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBRIIDGE - GSP

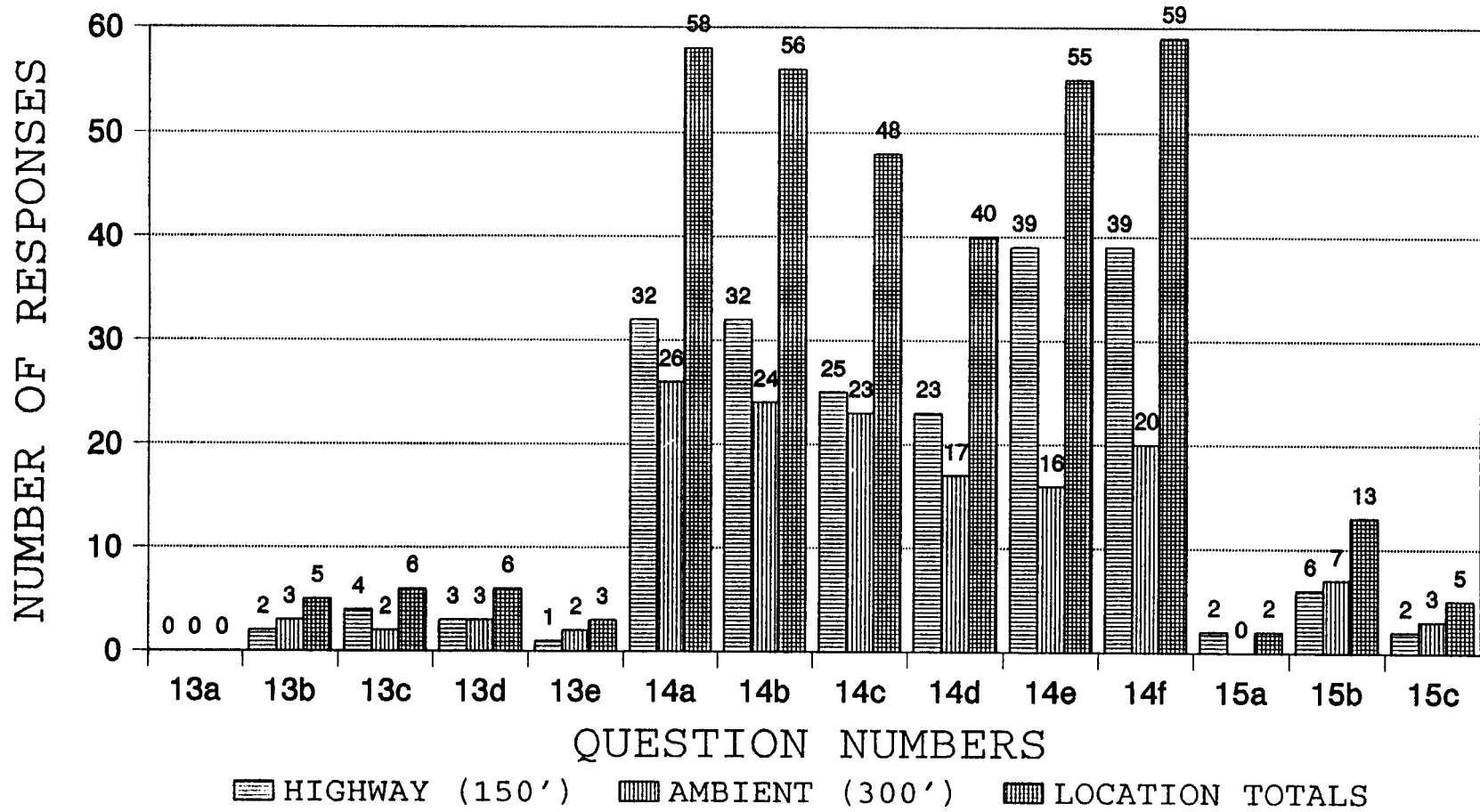
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBRIIDGE - GSP

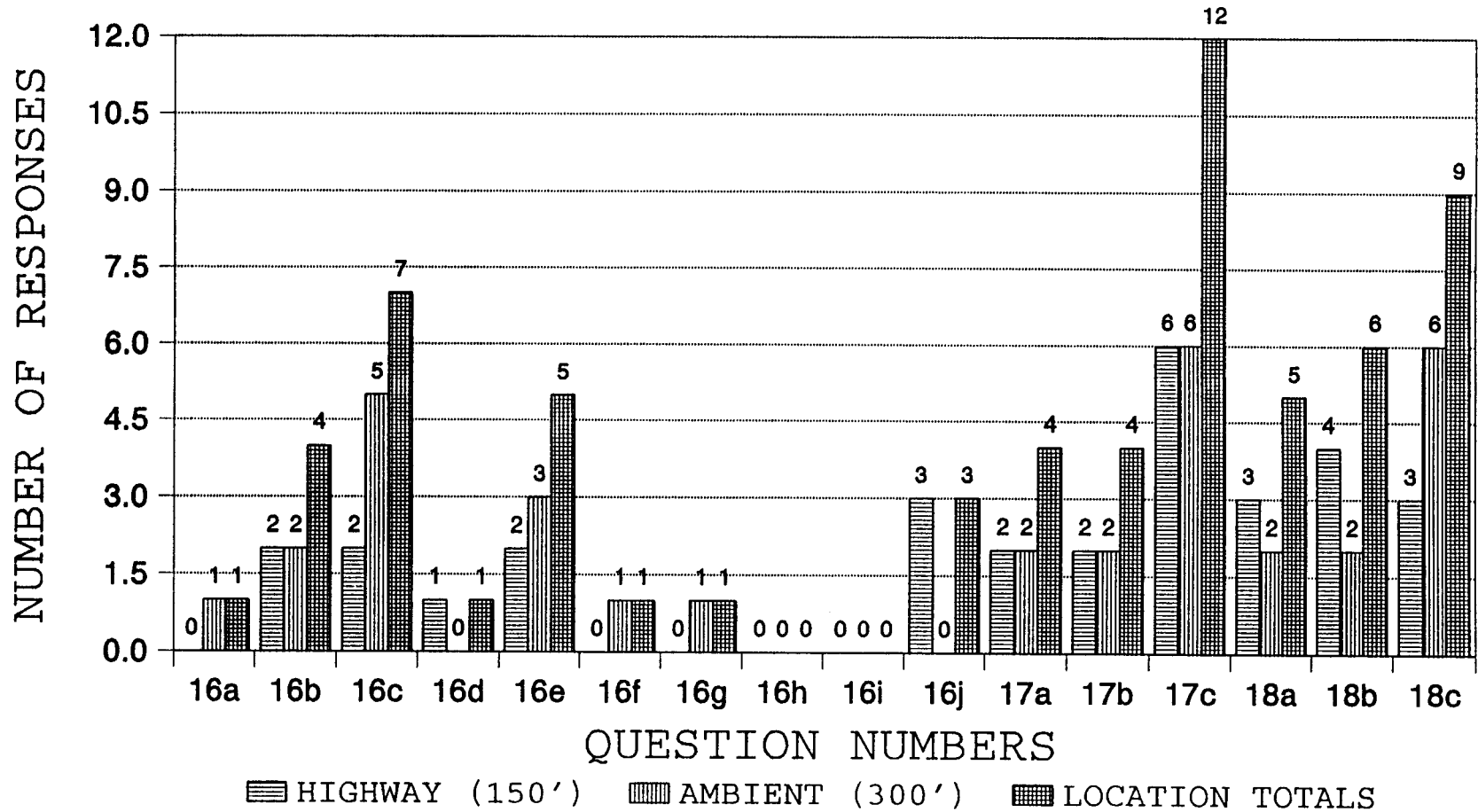
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBIDGE - GSP

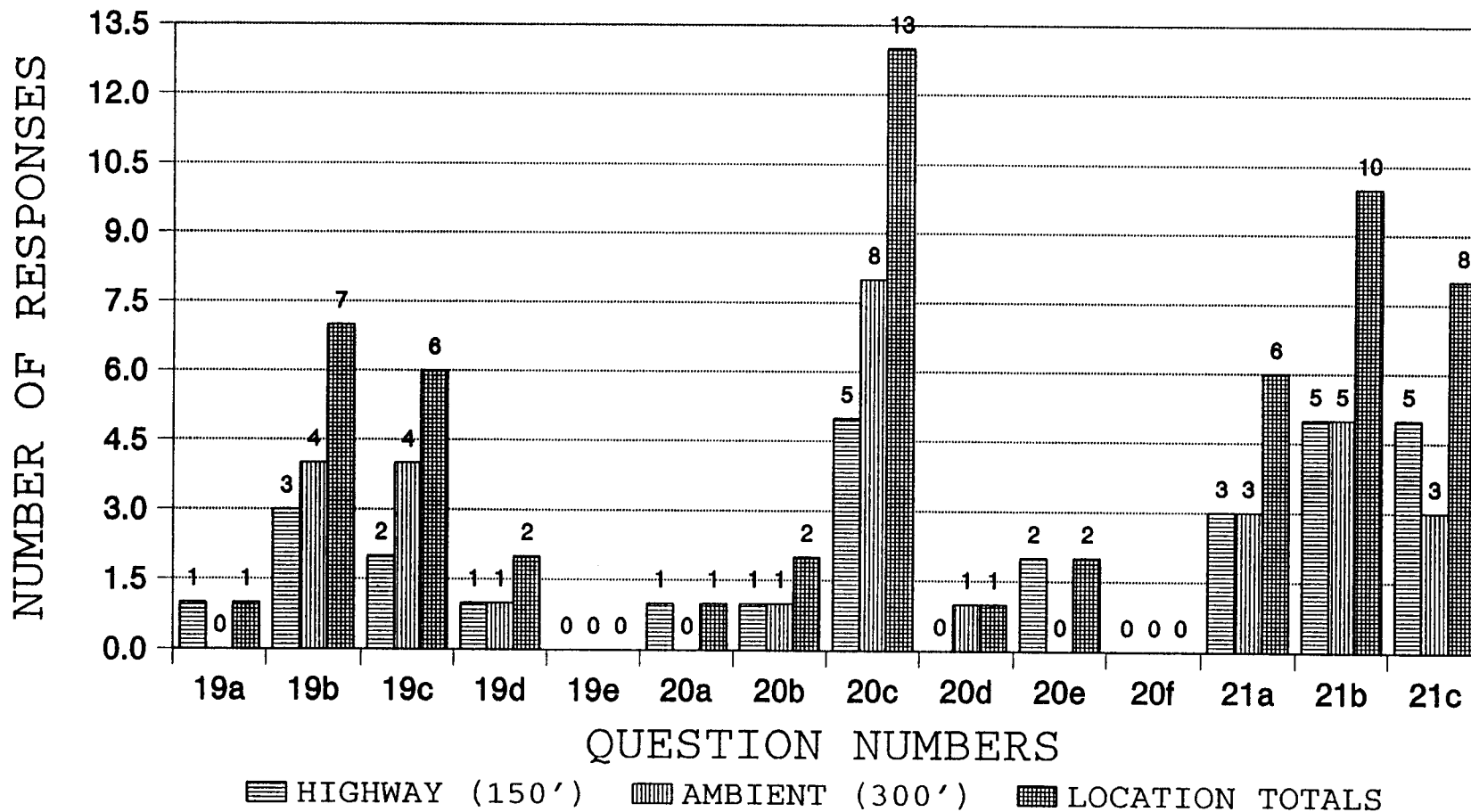
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBRIIDGE - GSP

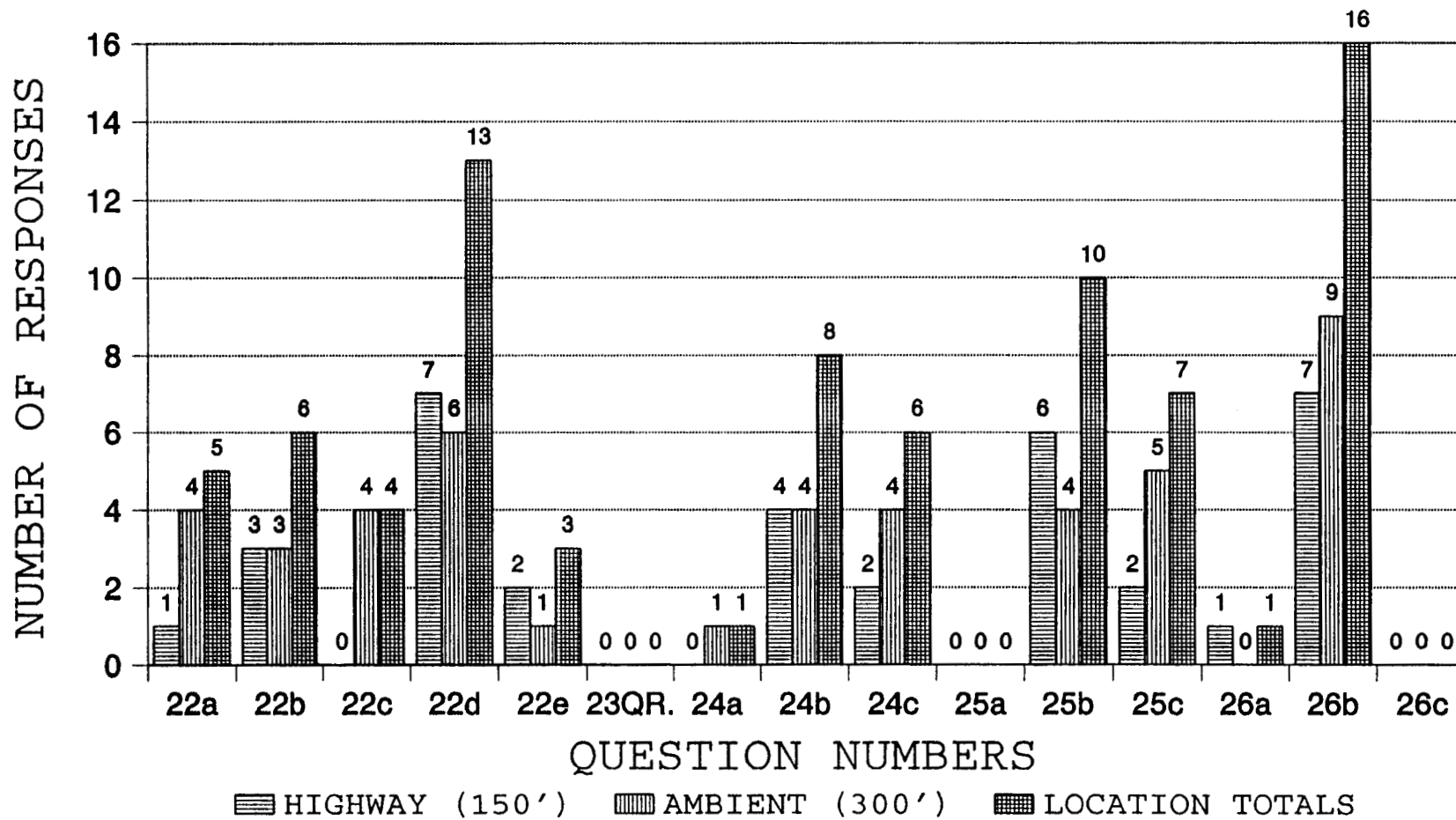
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBIDGE - GSP

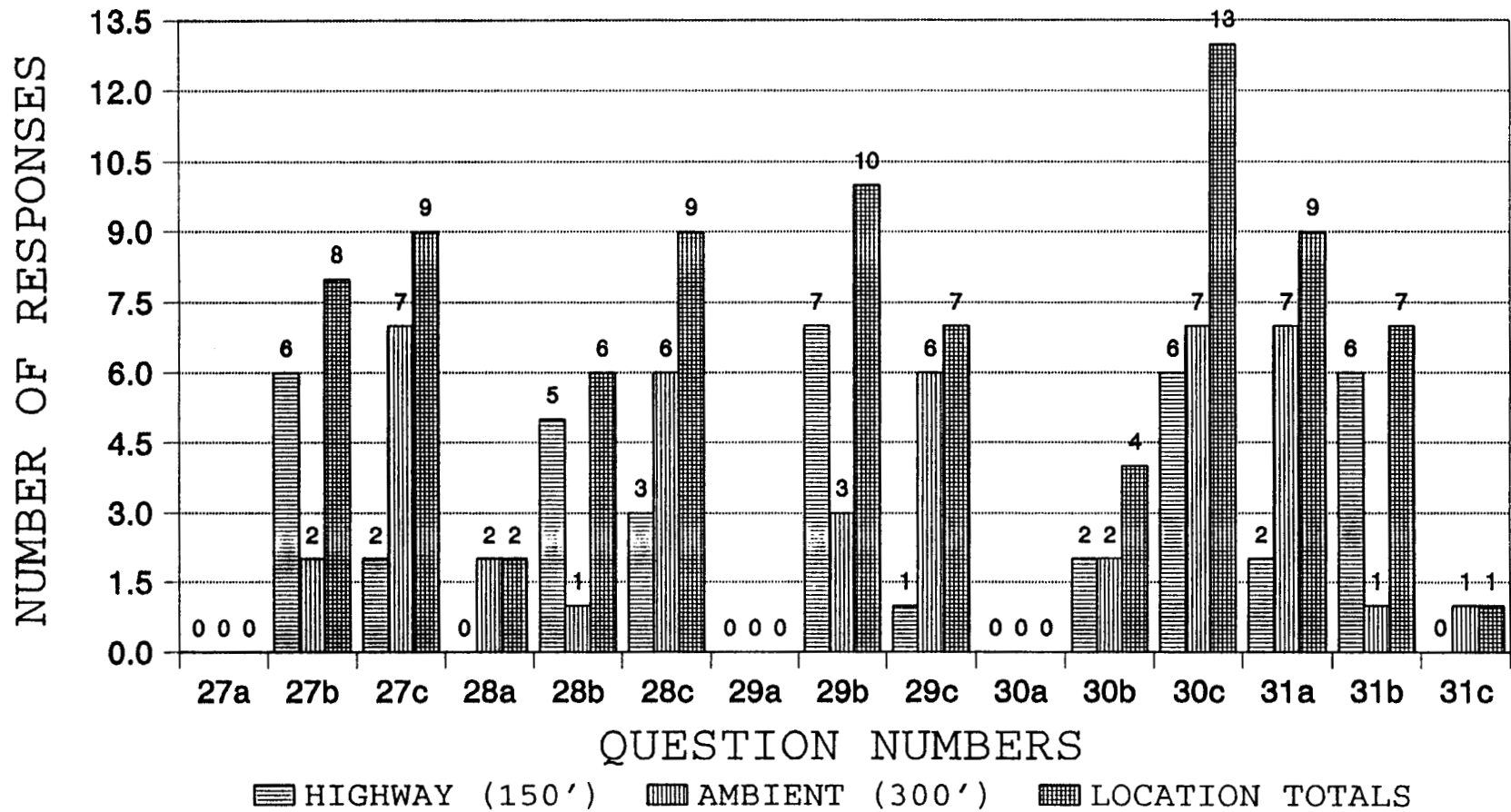
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBIDGE - GSP

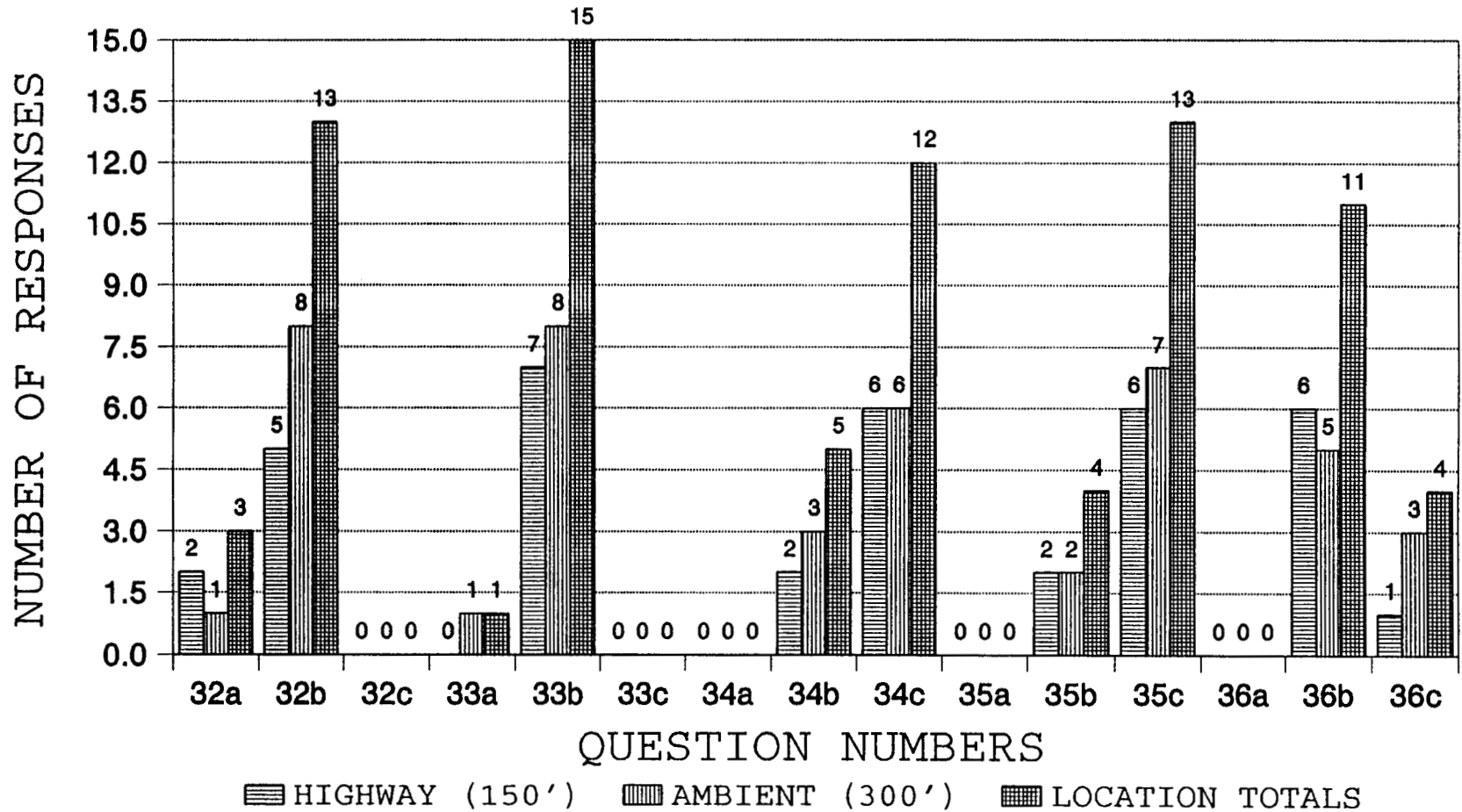
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBRIIDGE - GSP

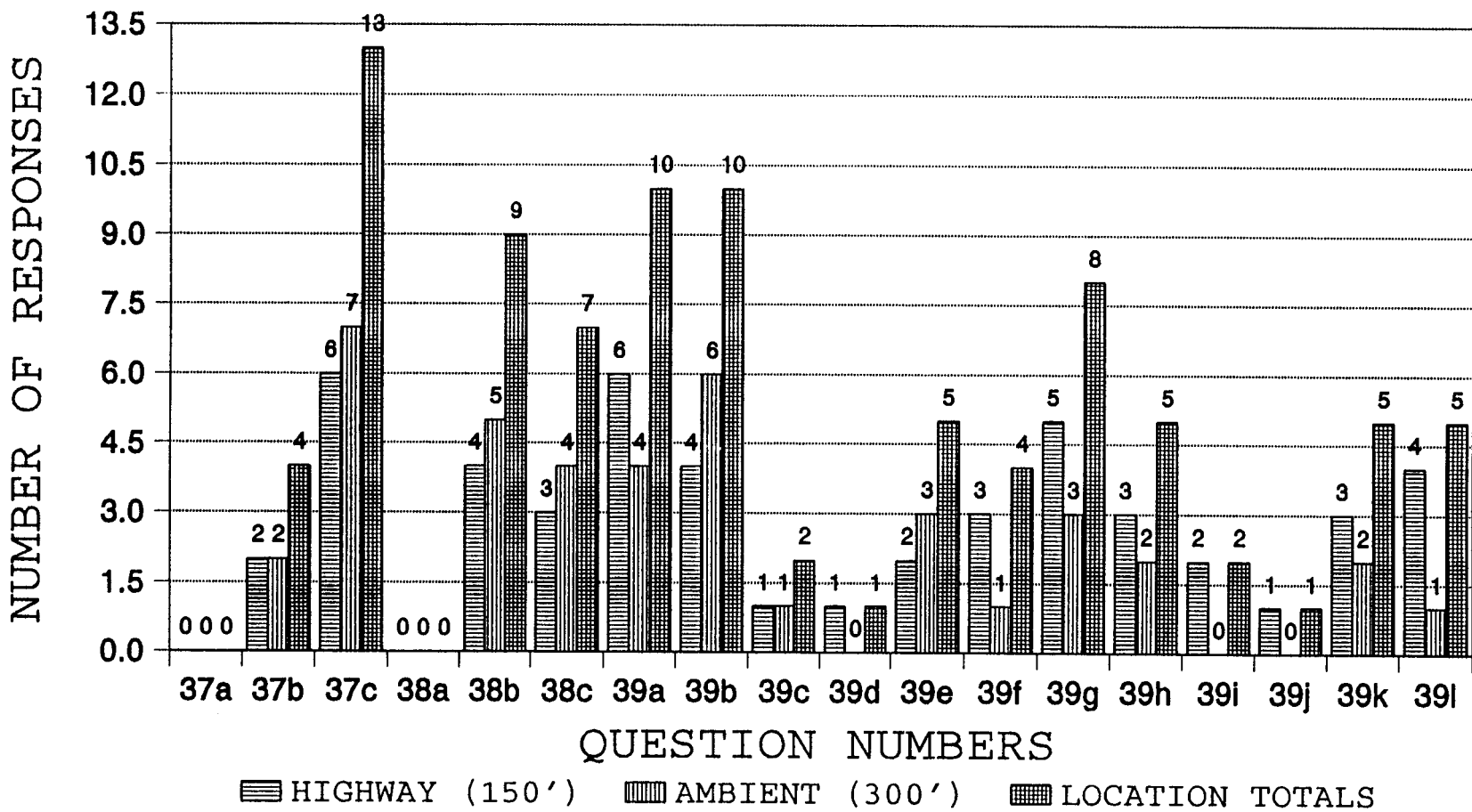
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBRIIDGE - GSP

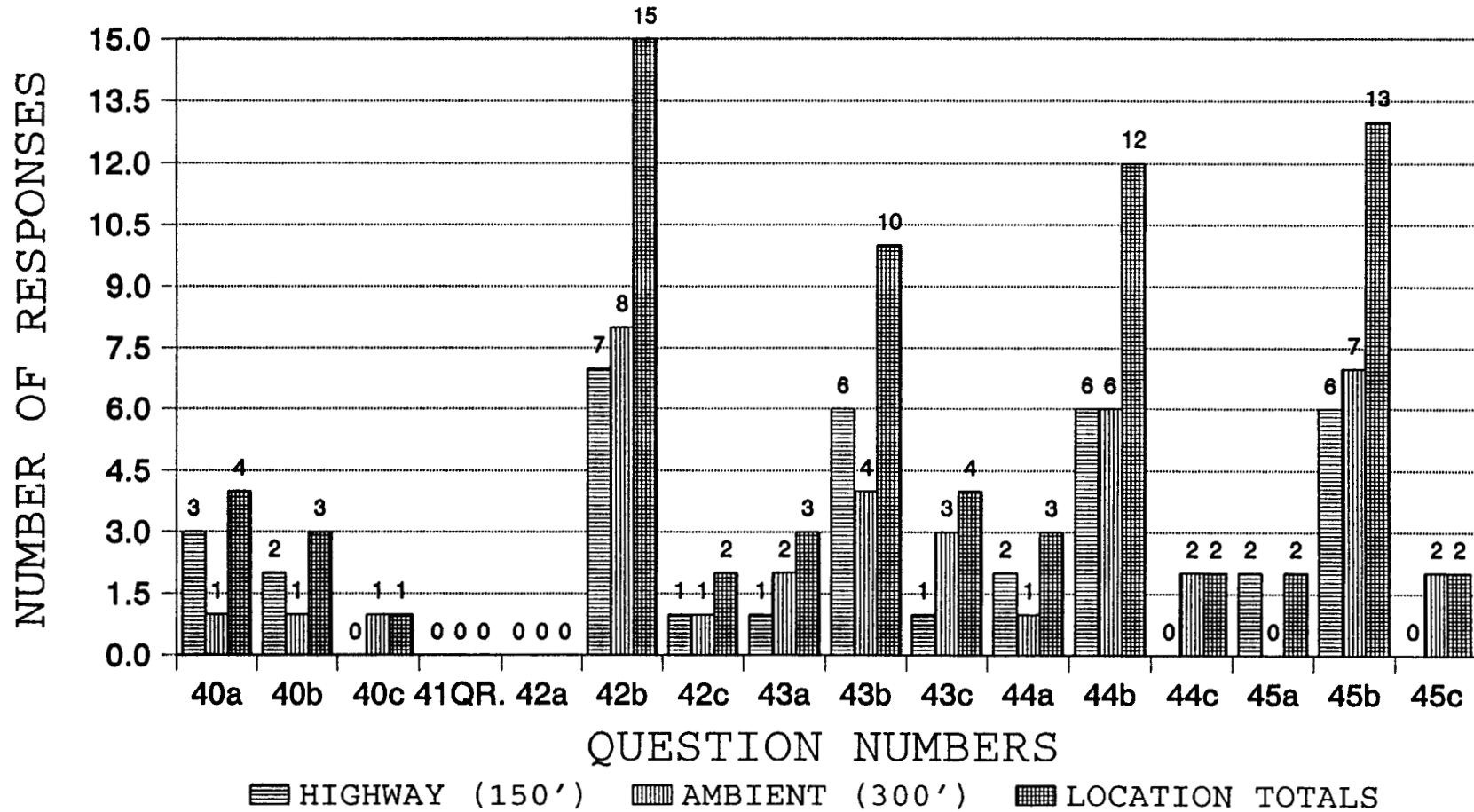
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBRIIDGE - GSP

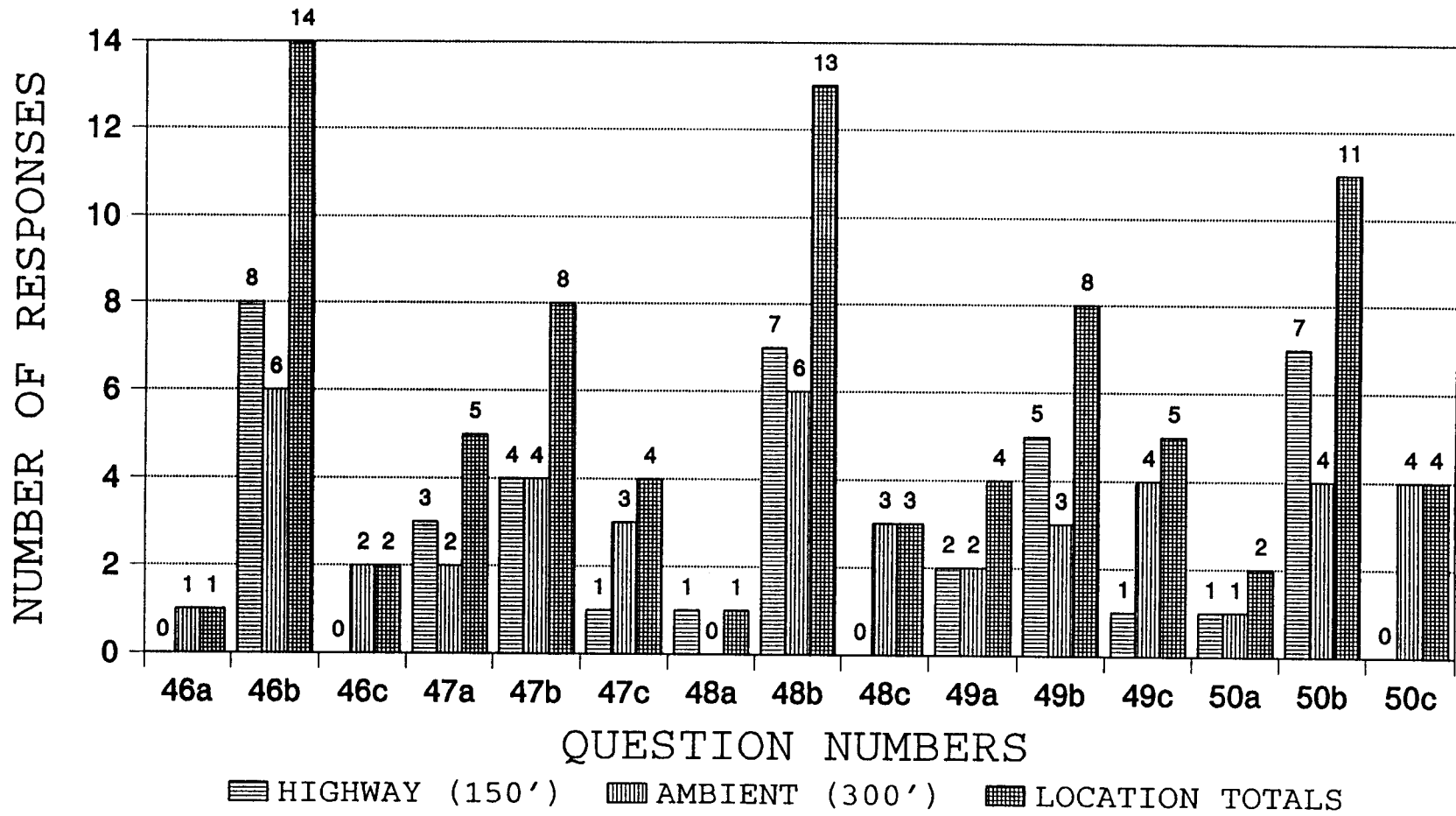
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBRIIDGE - GSP

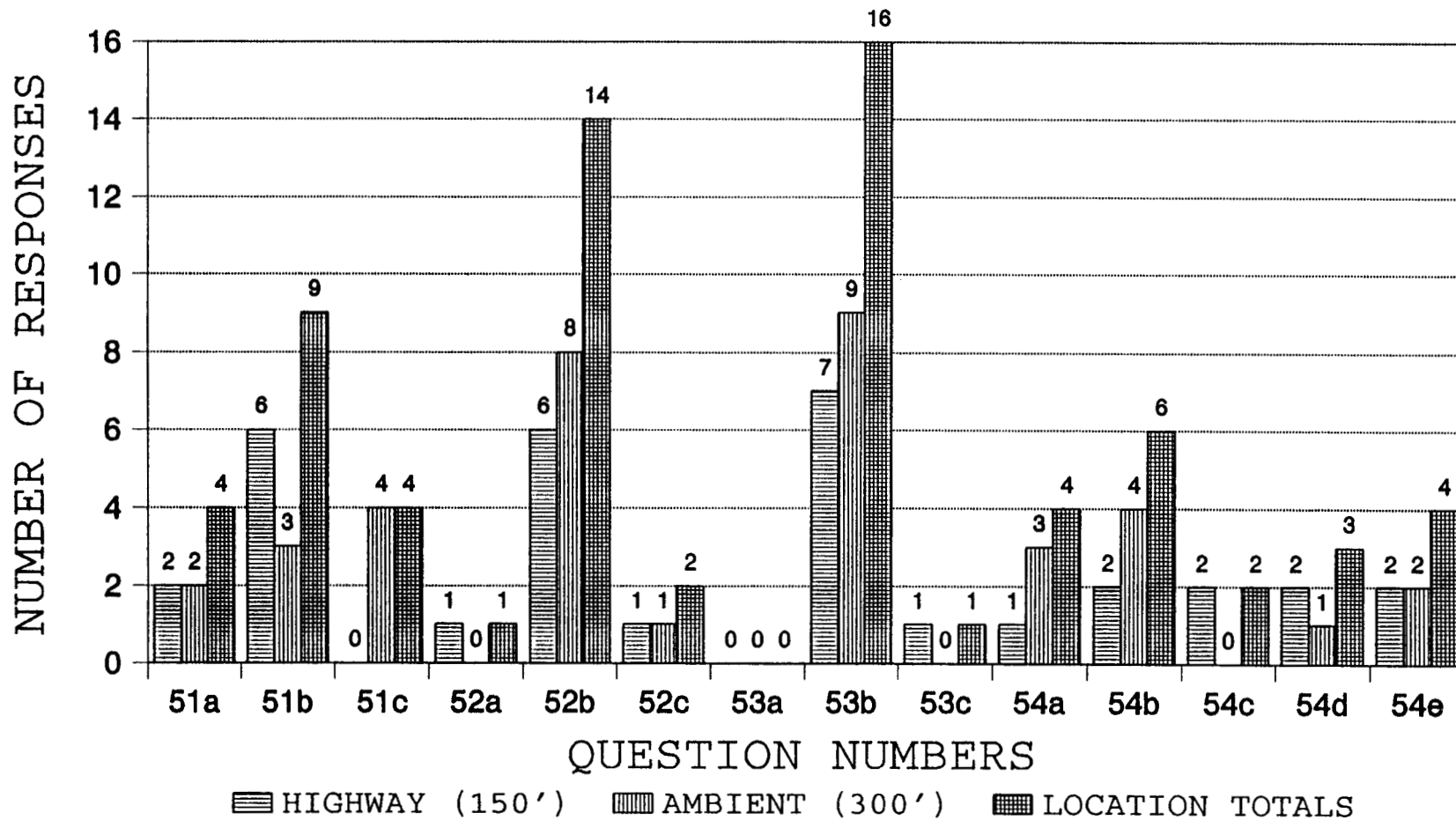
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 1

WOODBIDGE - GSP

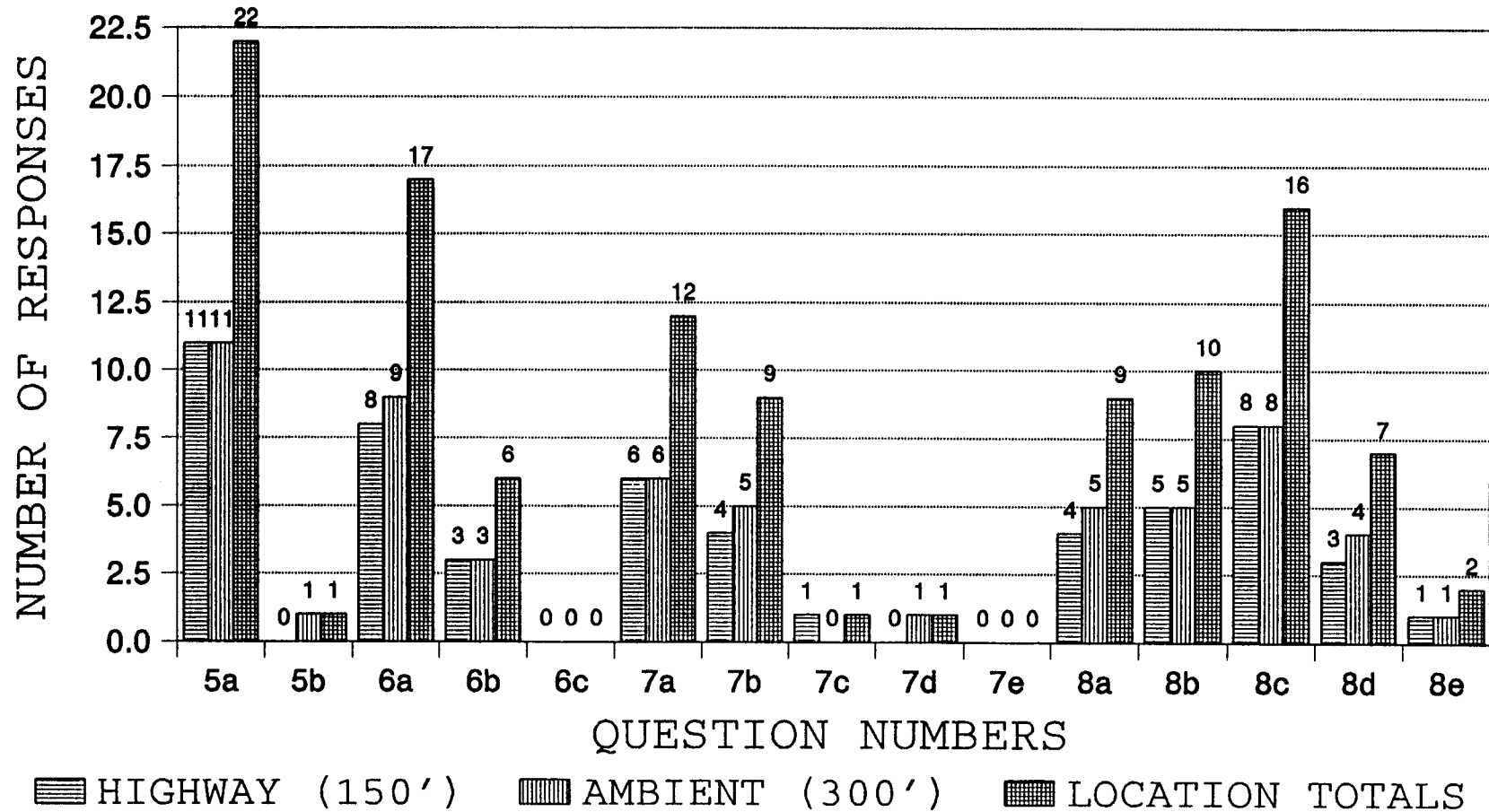
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

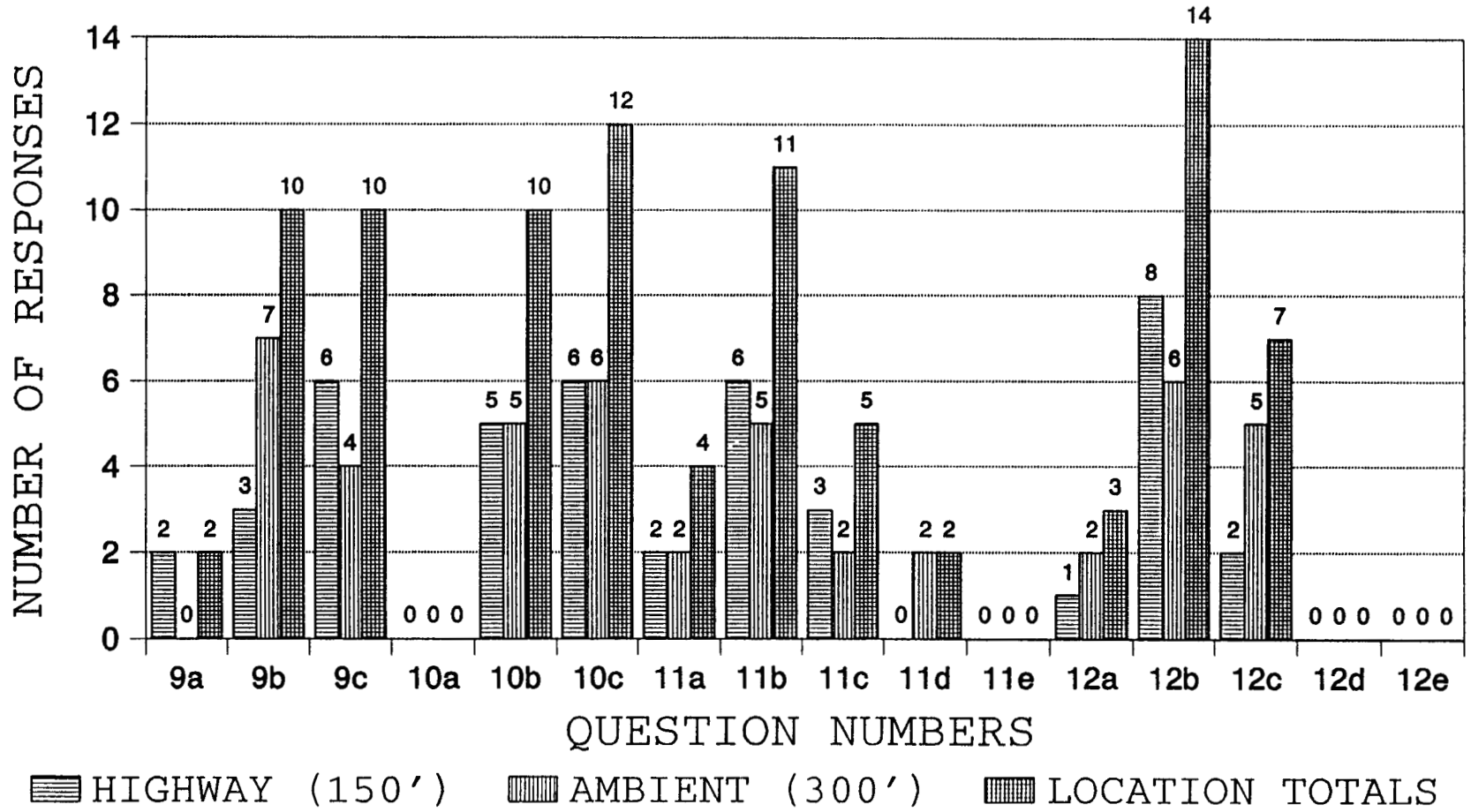
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

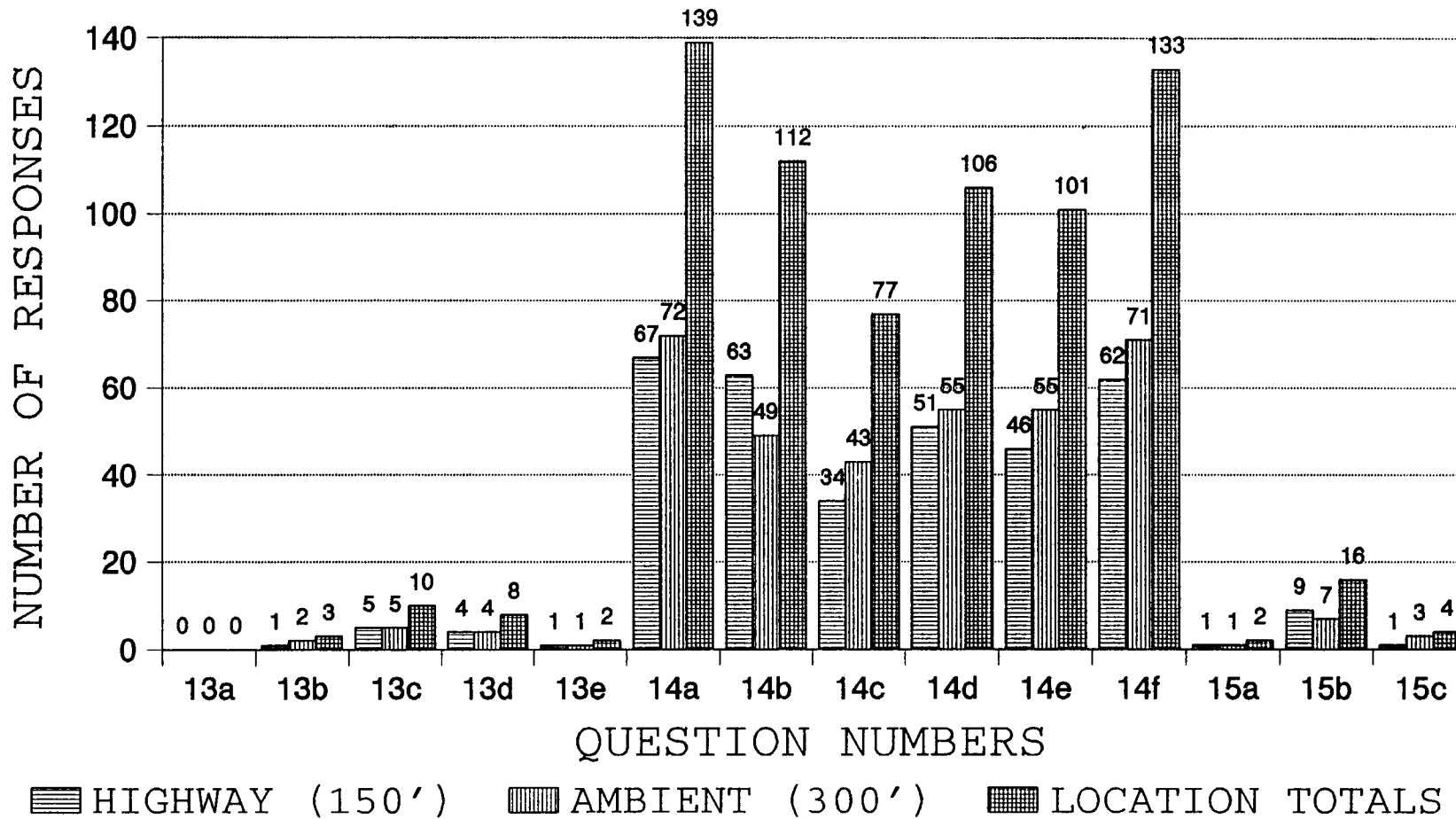
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

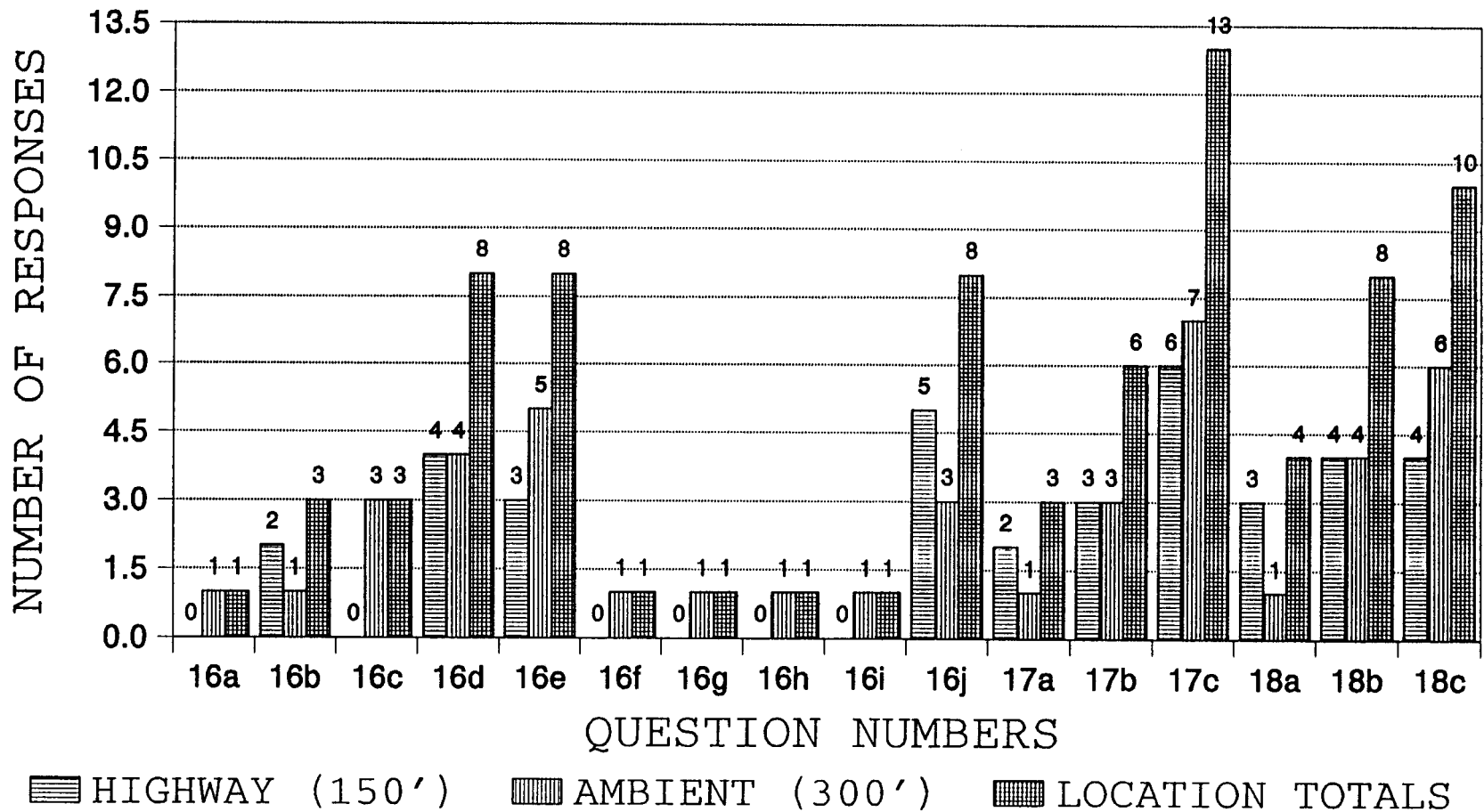
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

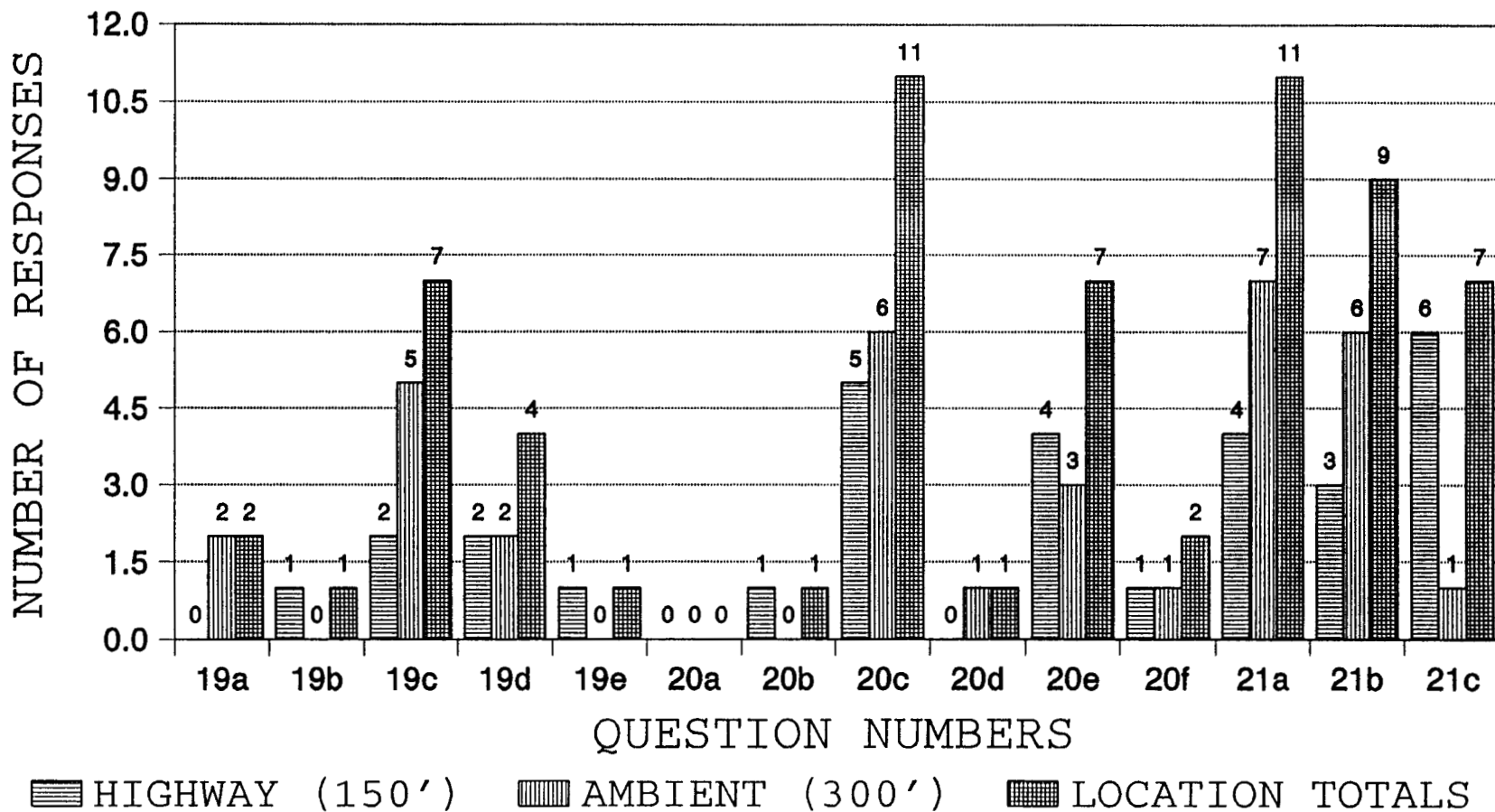
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

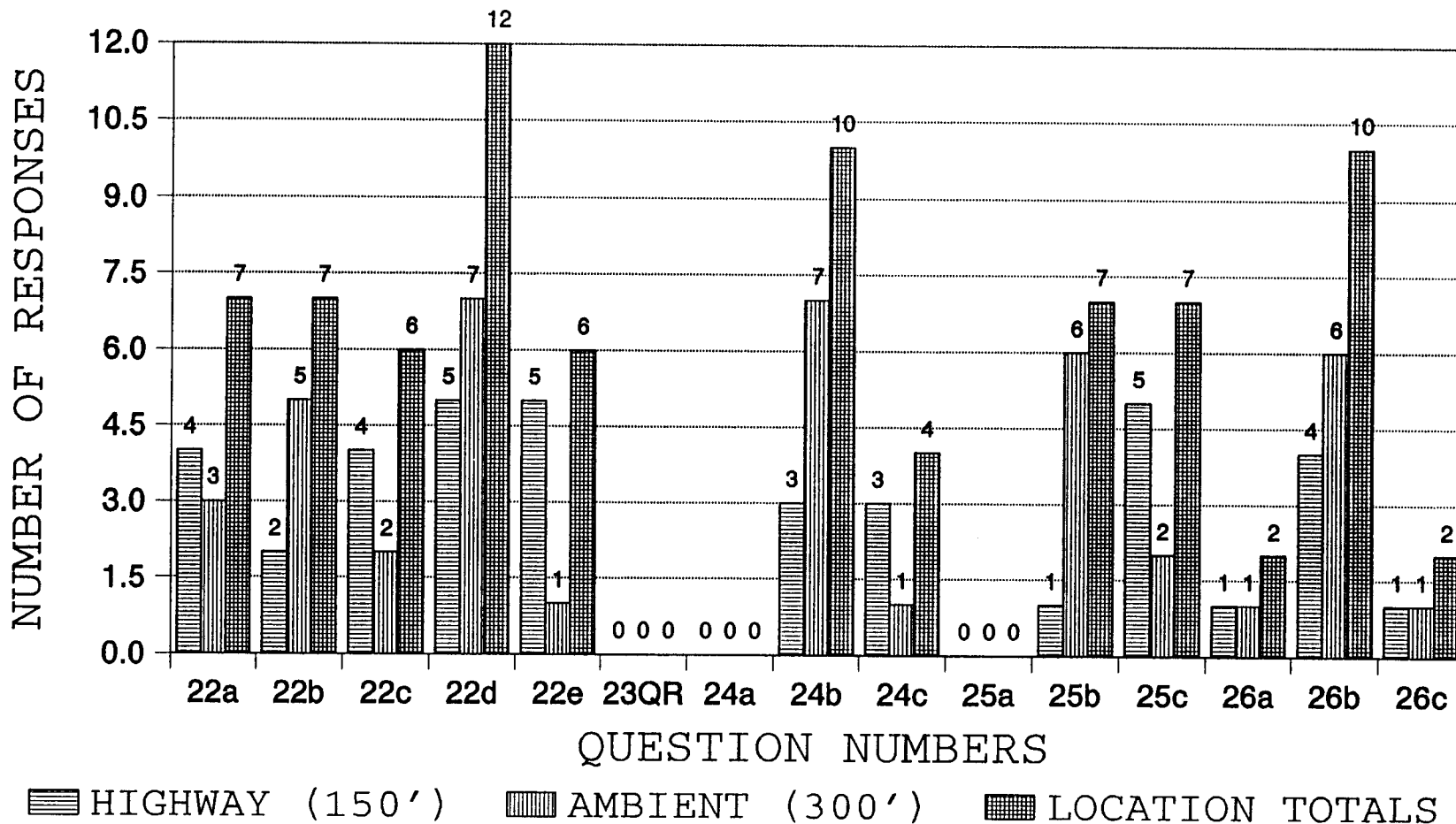
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

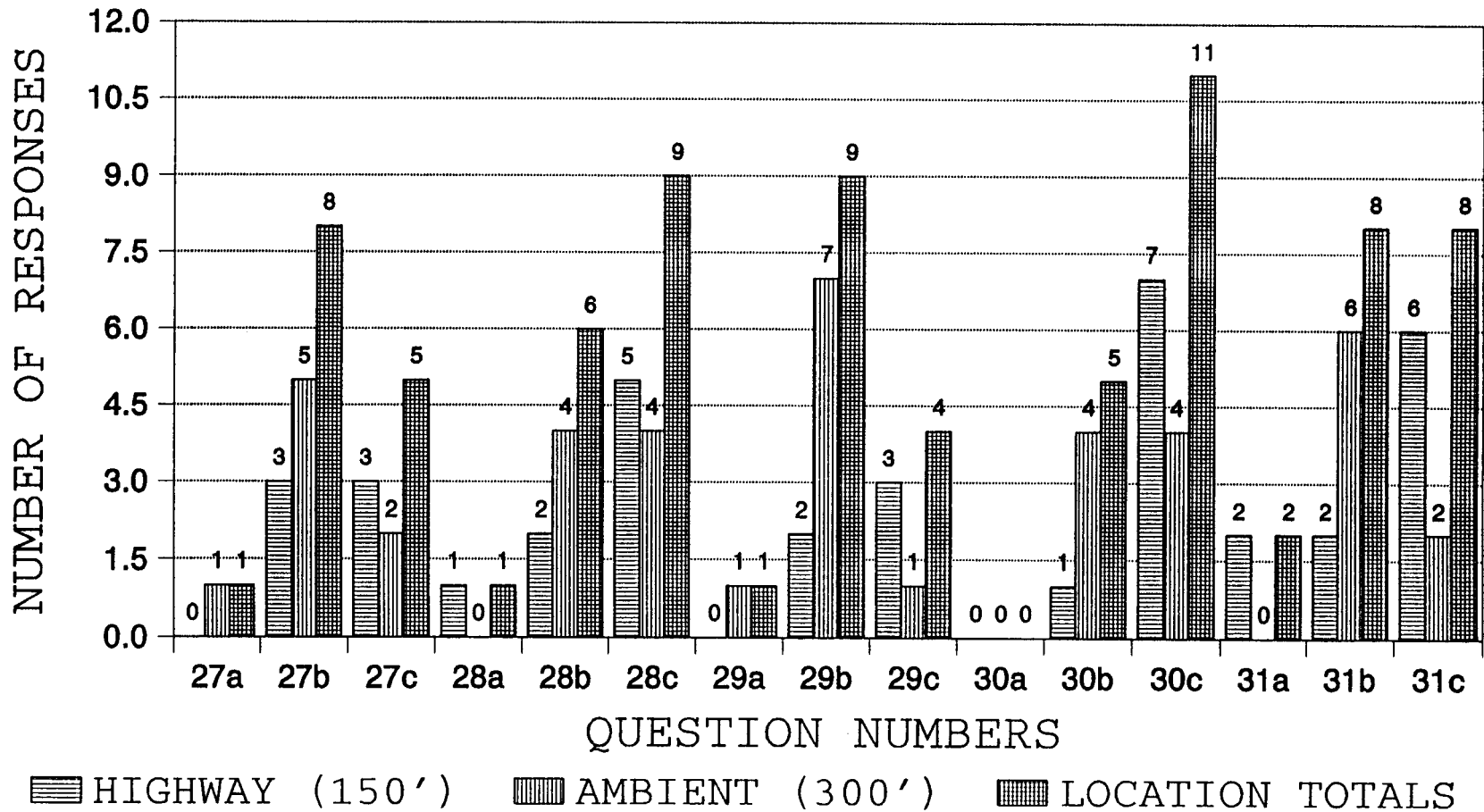
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

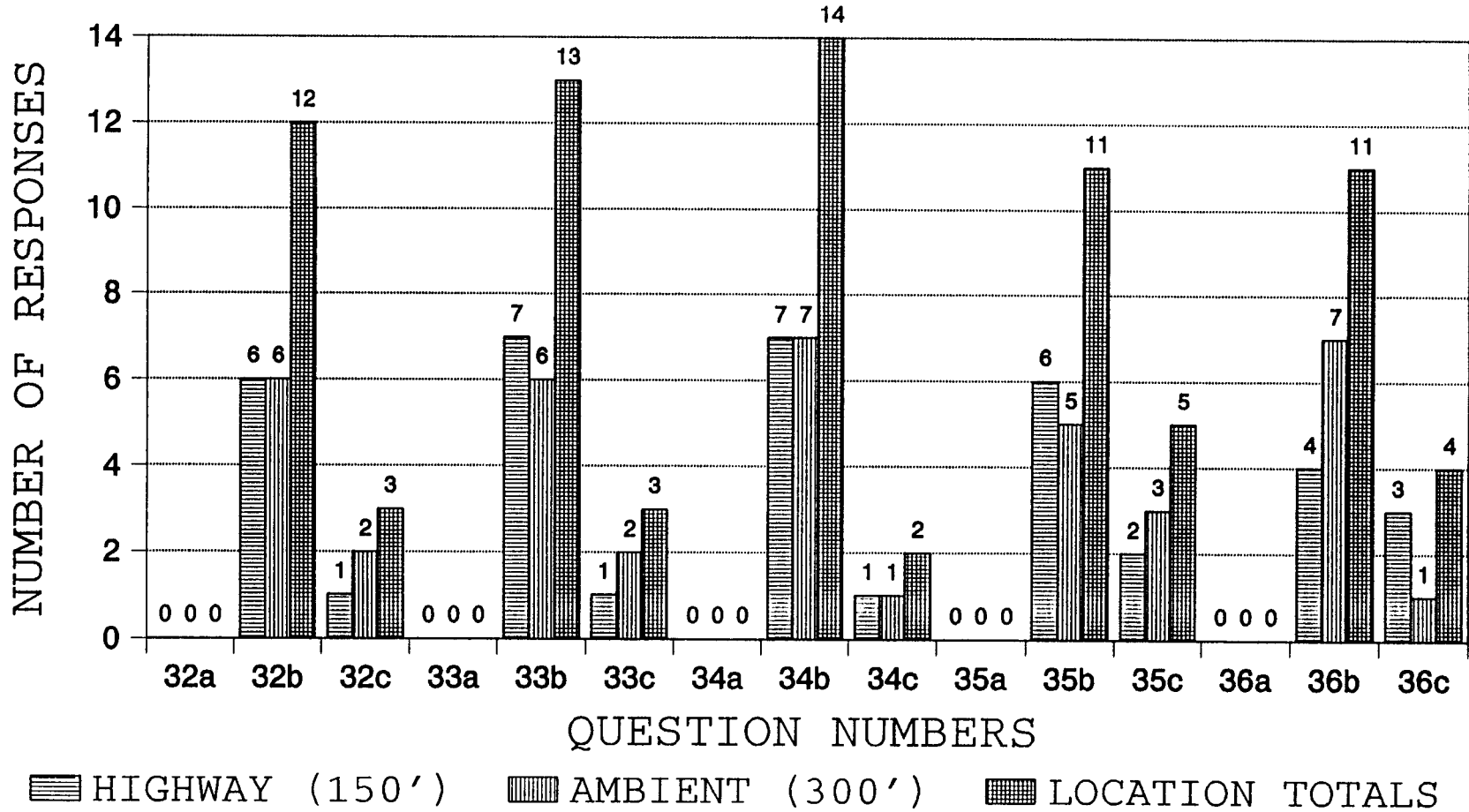
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

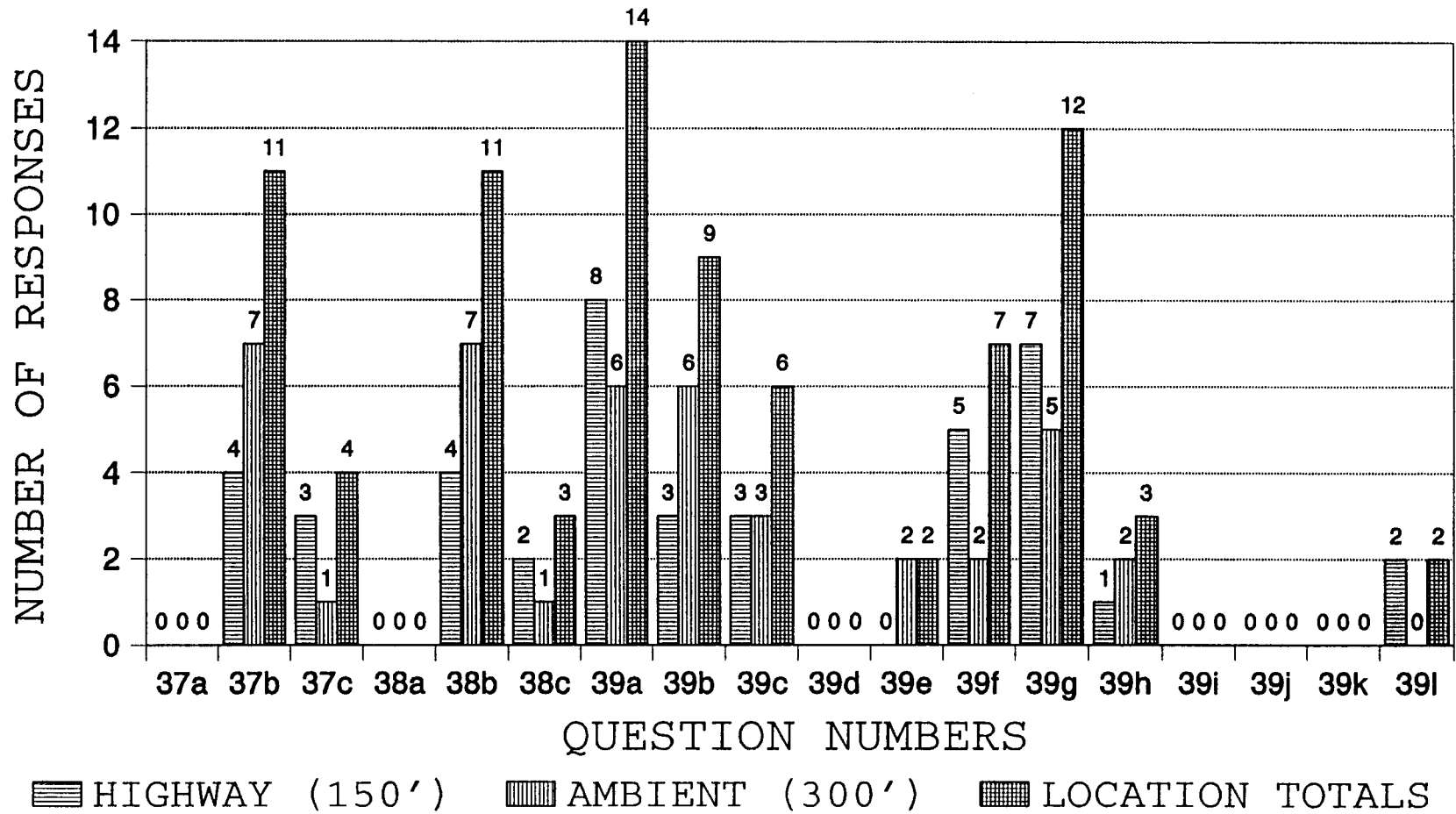
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

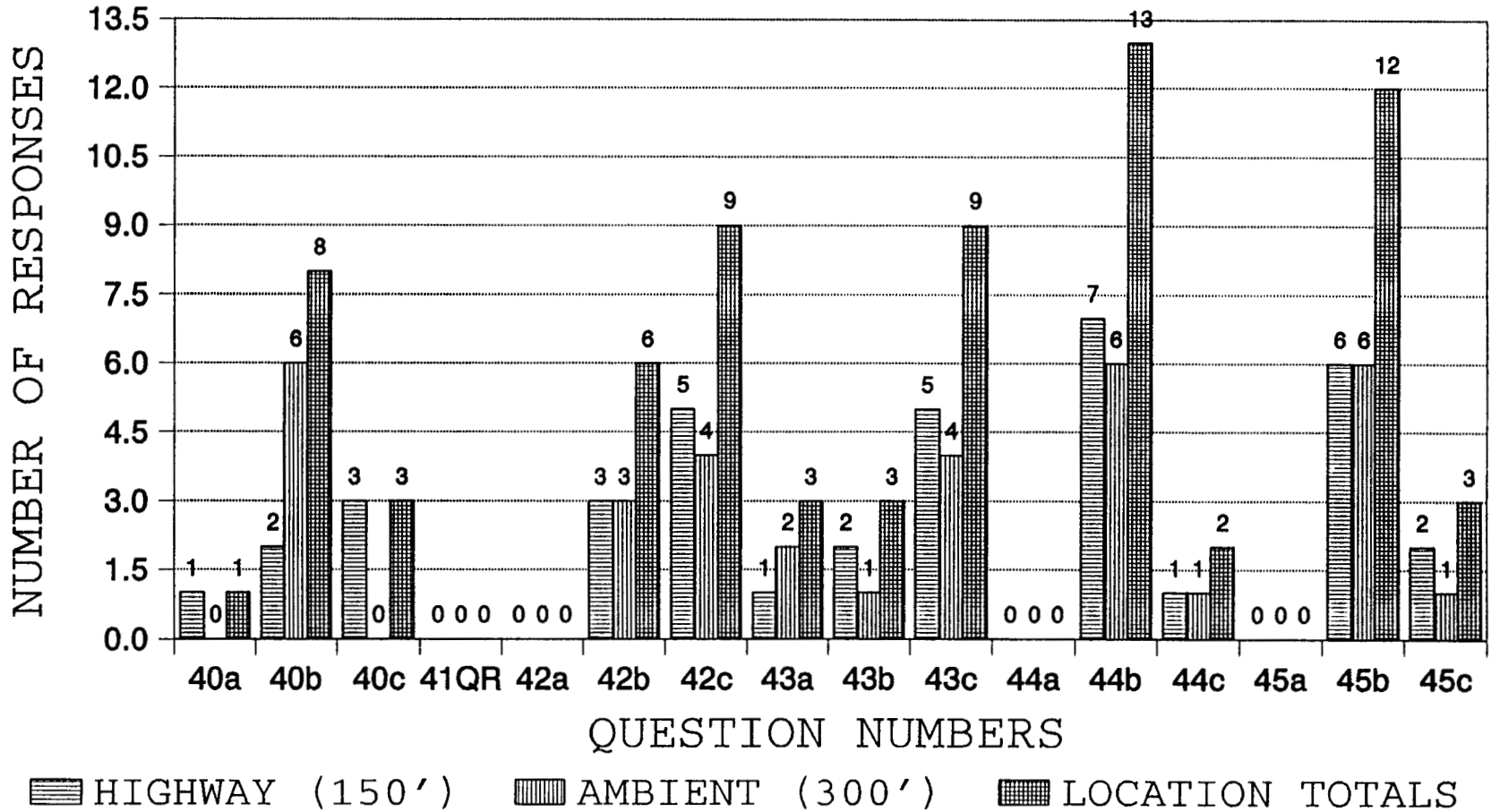
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

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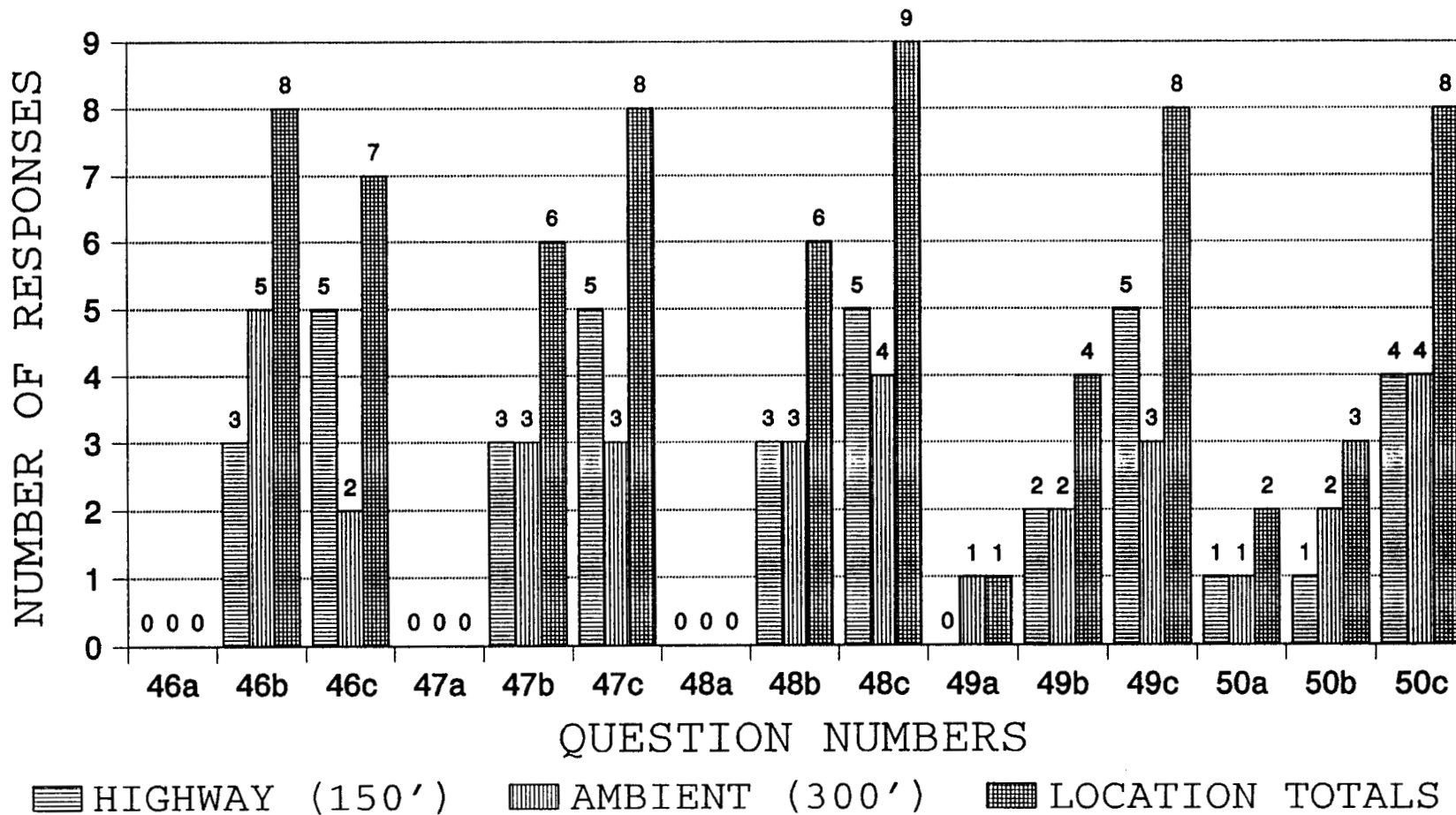
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

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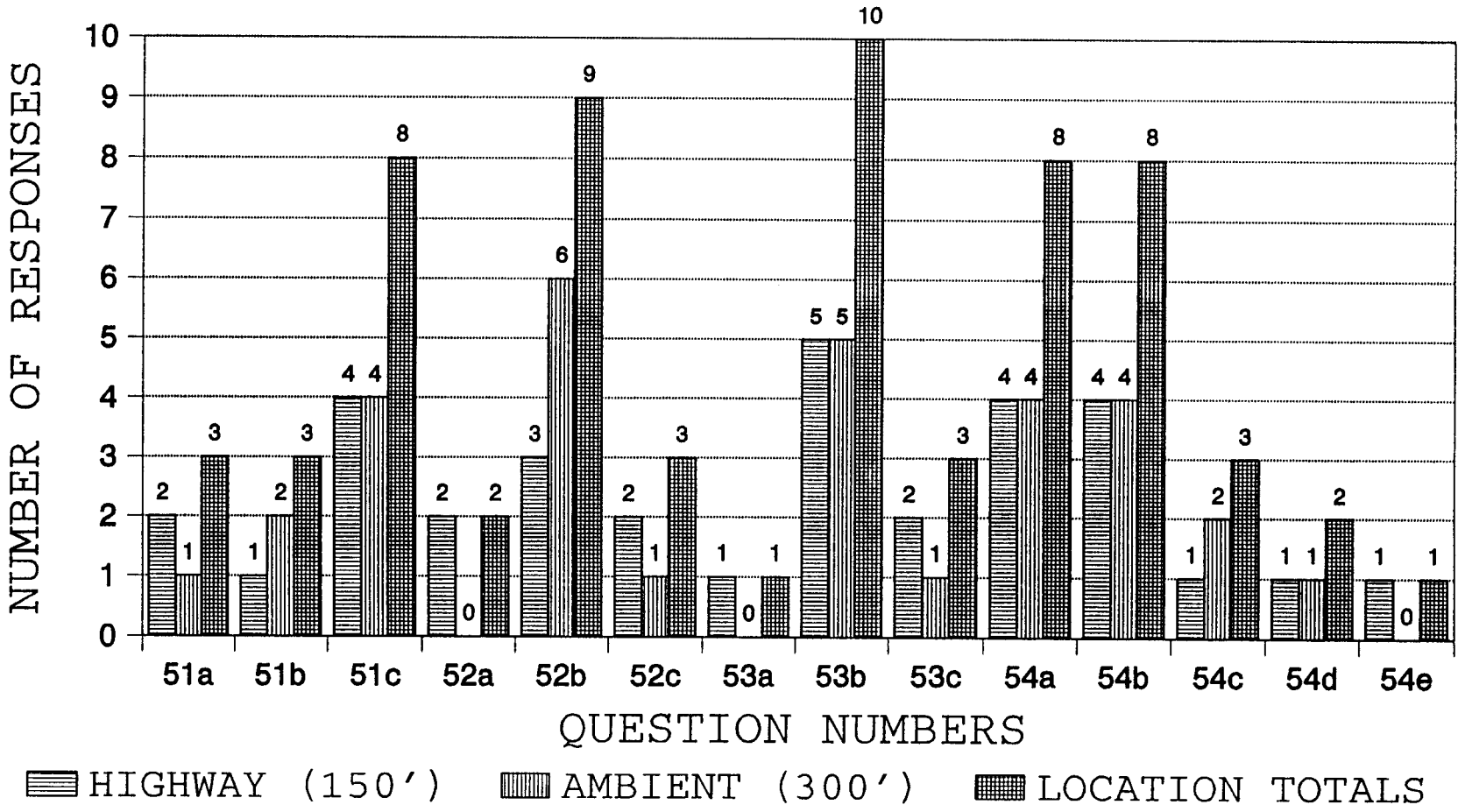
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 2

MORRISTOWN - I-287

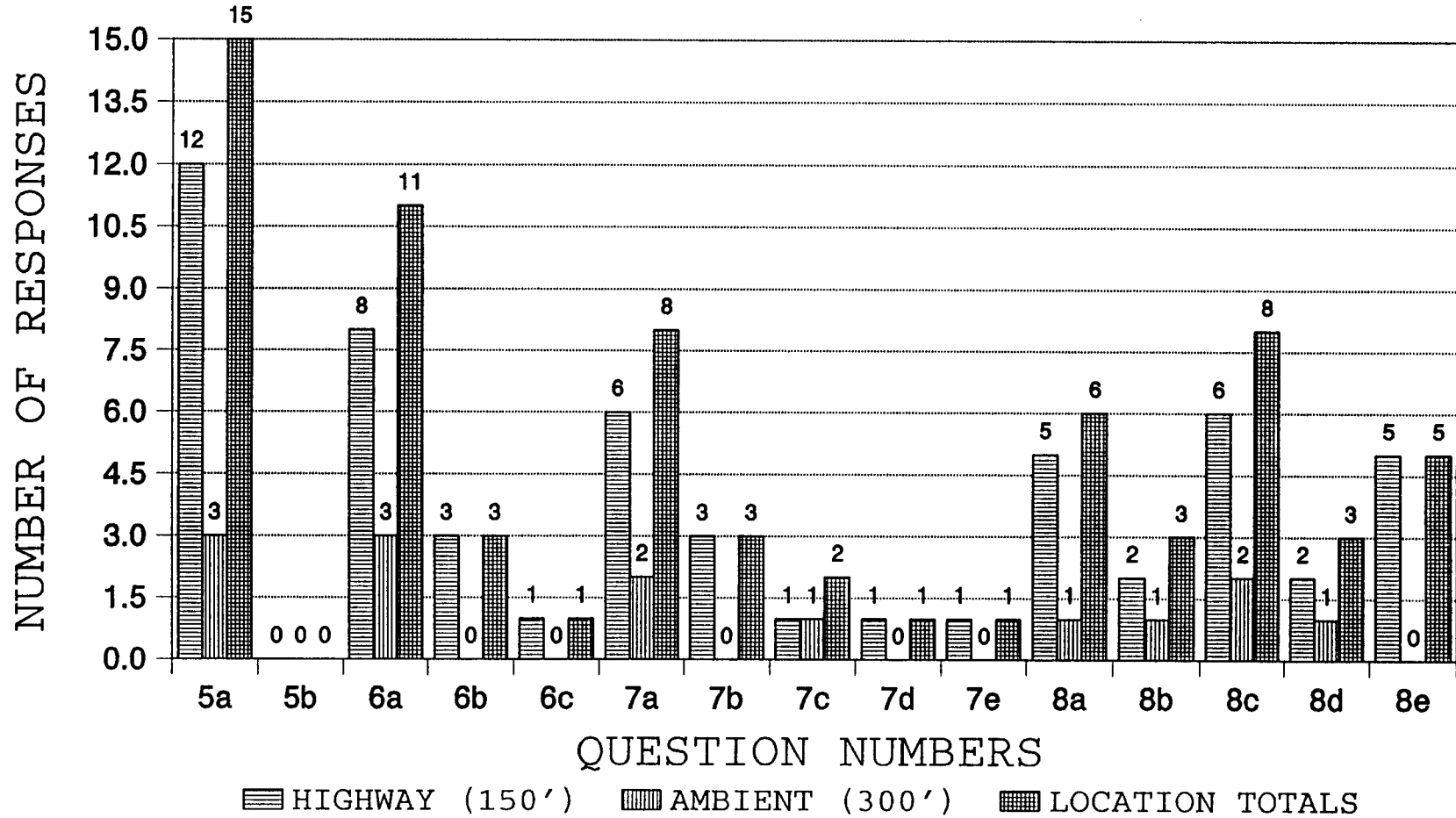
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 3

HARRISON - I-280

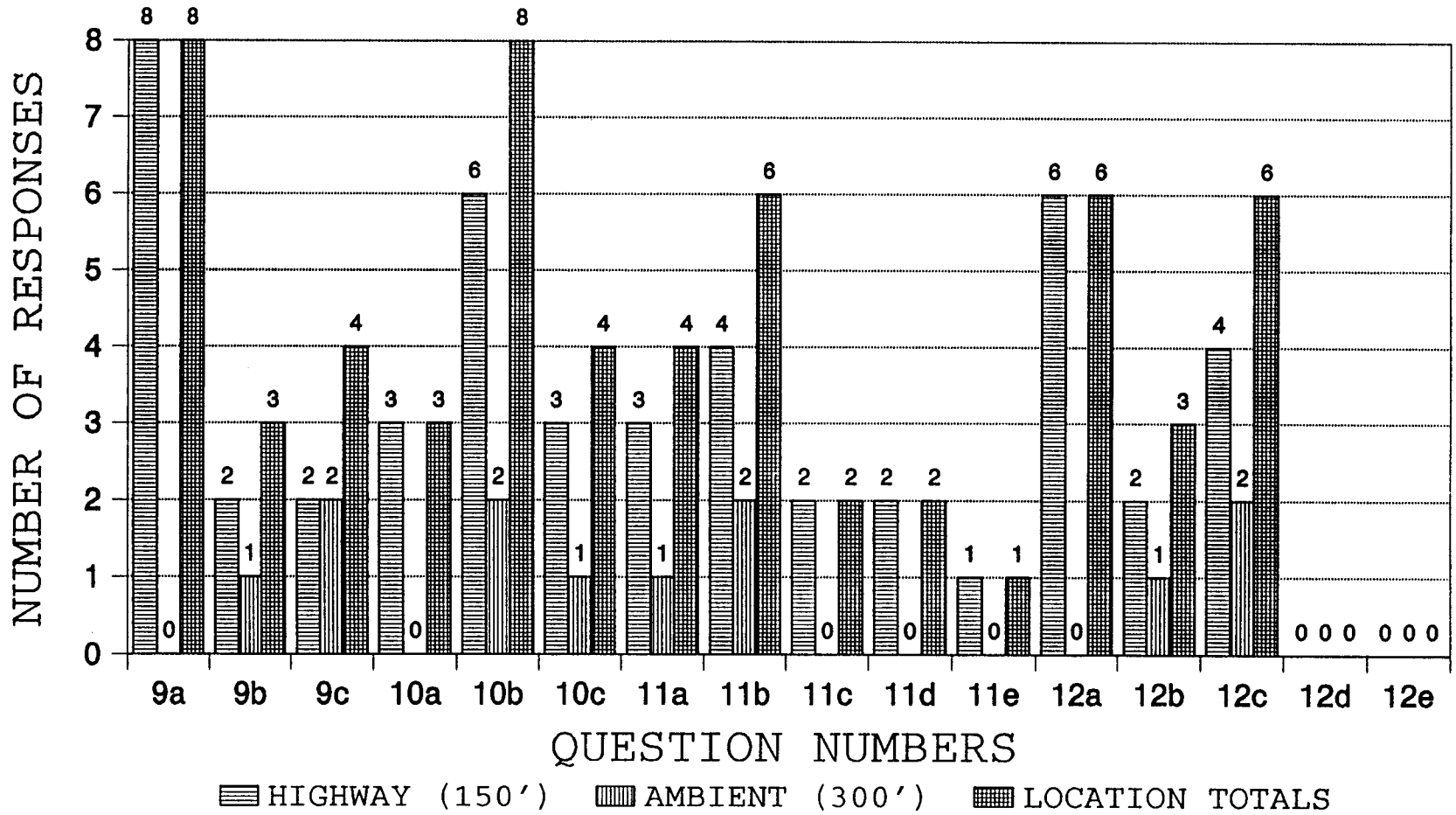
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 3

HARRISON - I-280

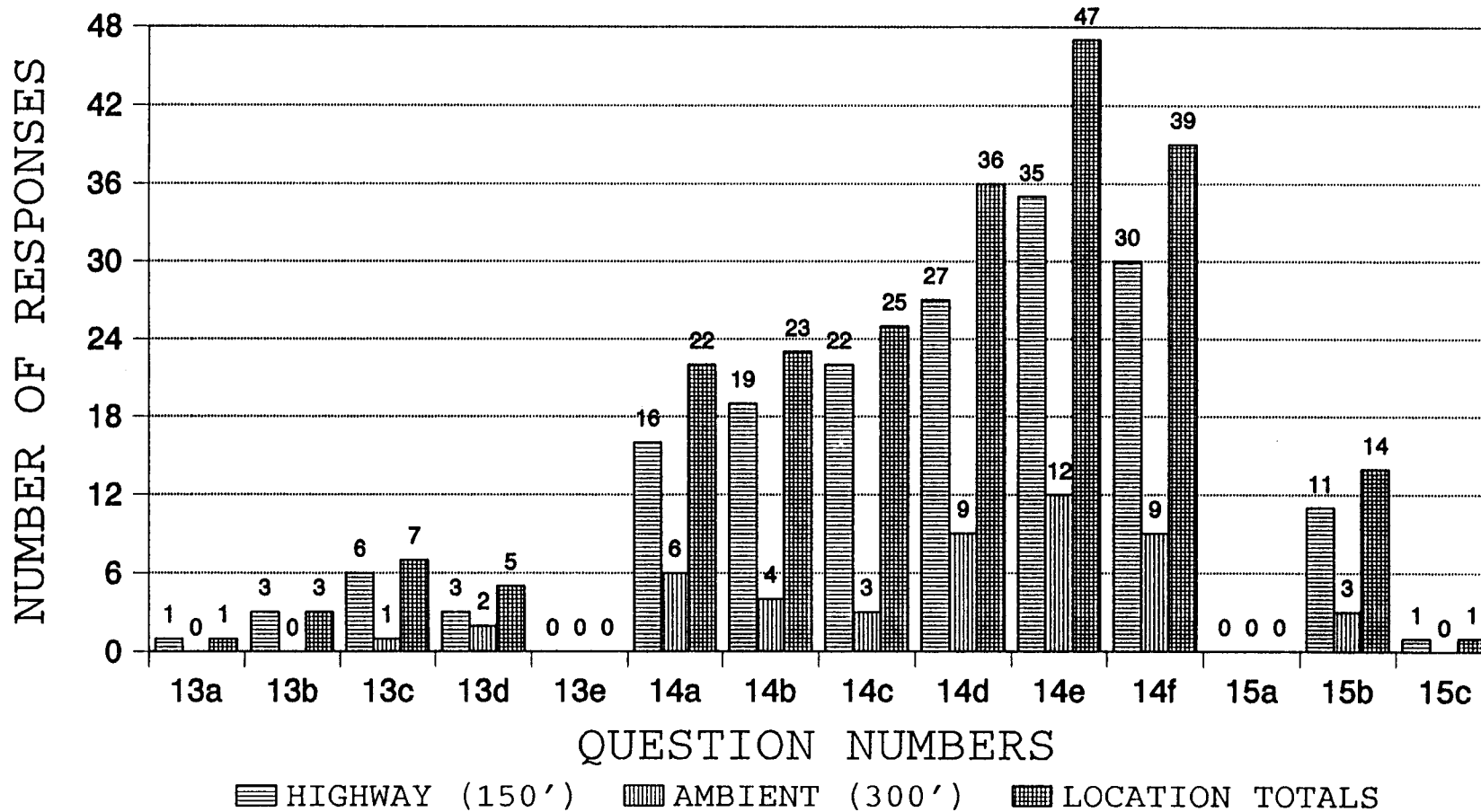
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 3

HARRISON - I-280

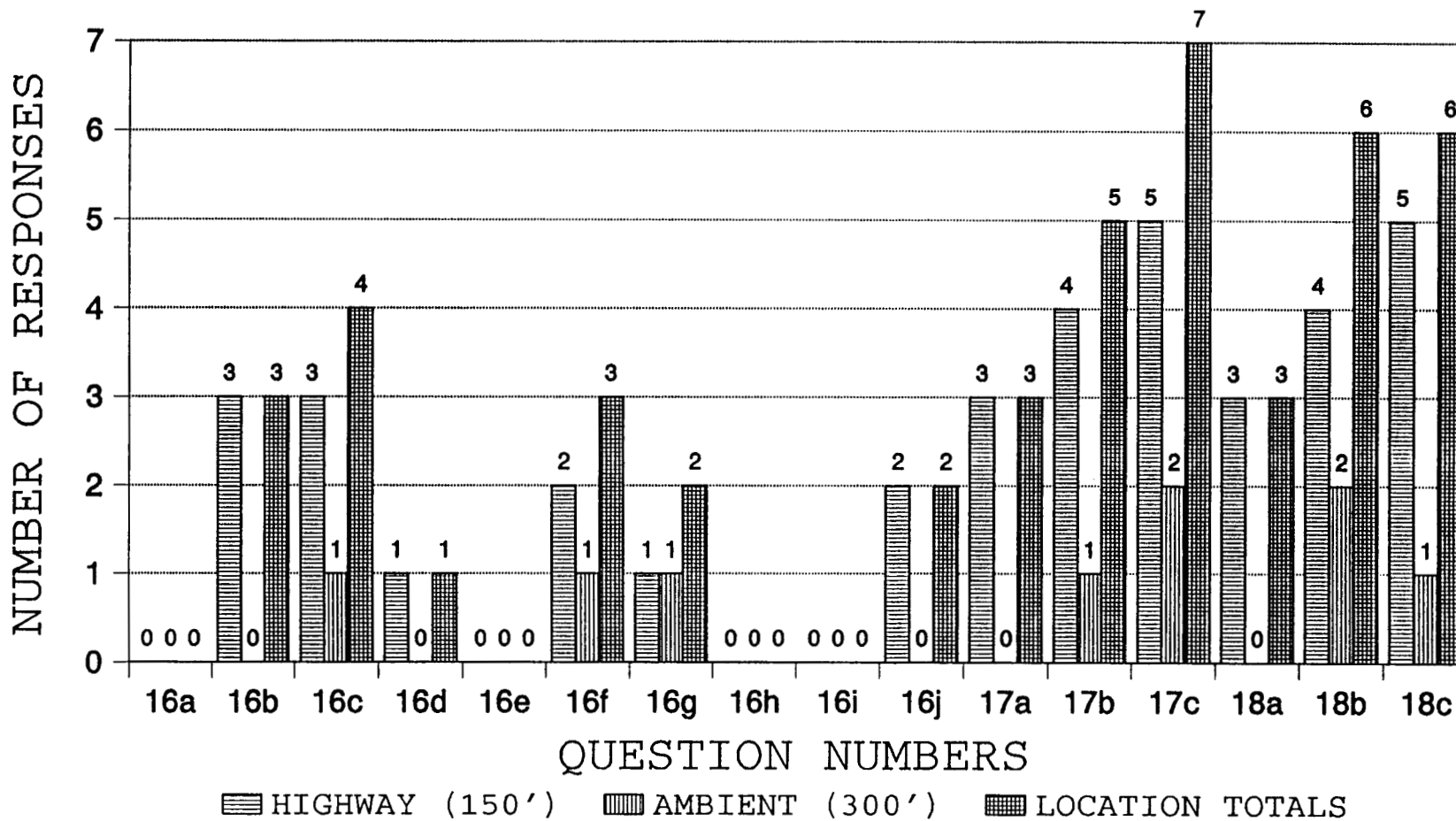
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 3

HARRISON - I-280

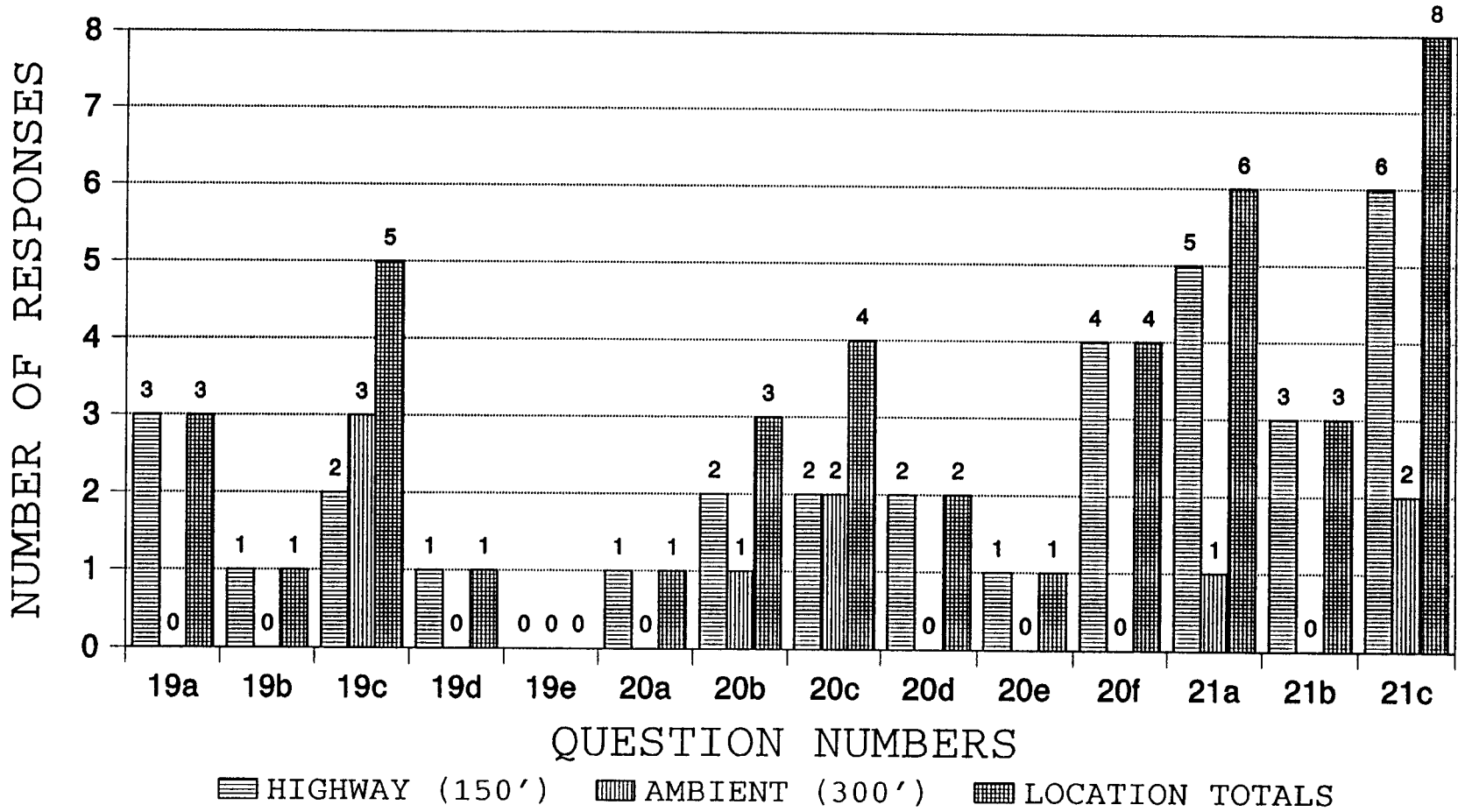
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 3

HARRISON - I-280

HIGHWAY + AMBIENT GROUPS

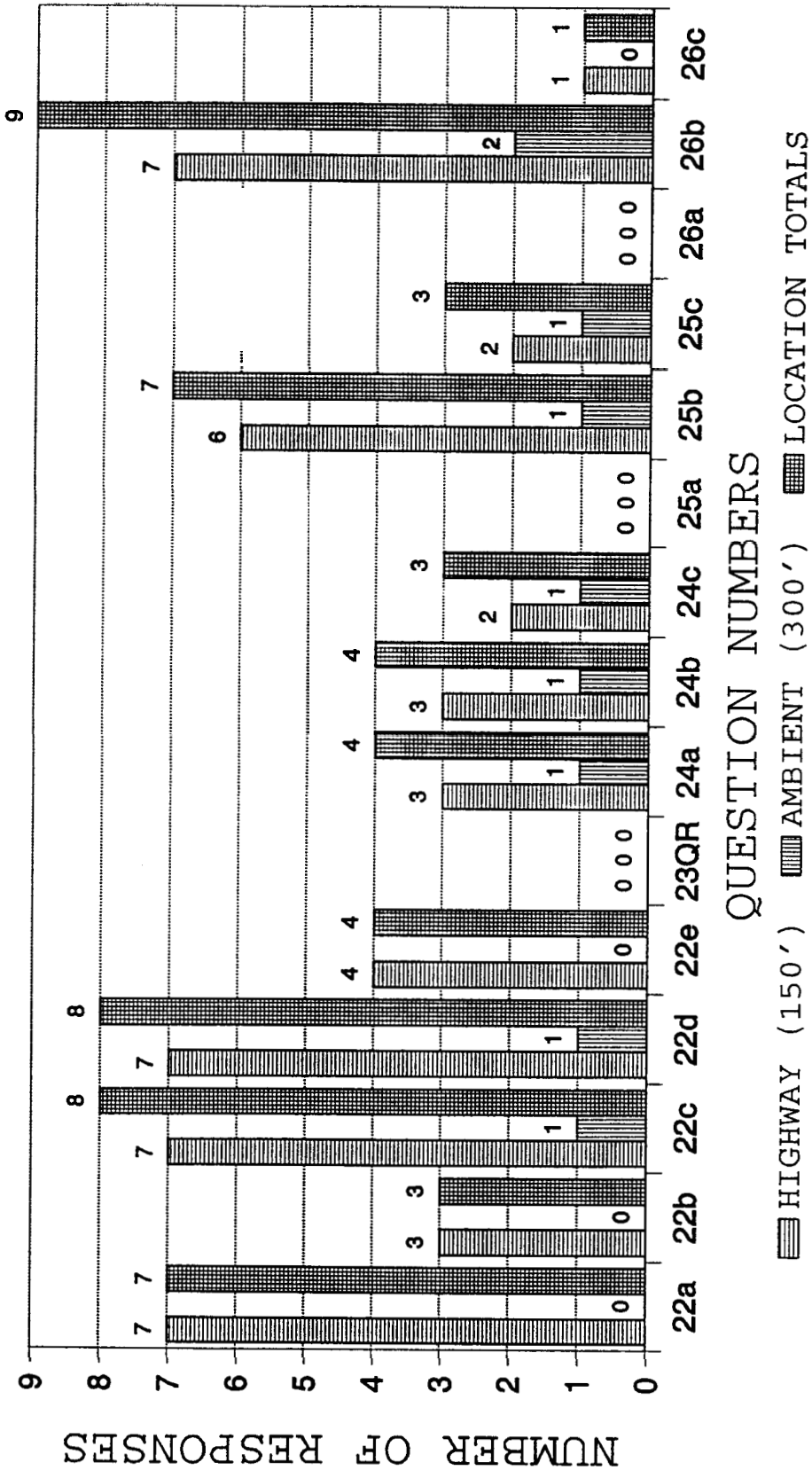


-09-

TOTALS - LOCATION 3

HARRISON - I-280

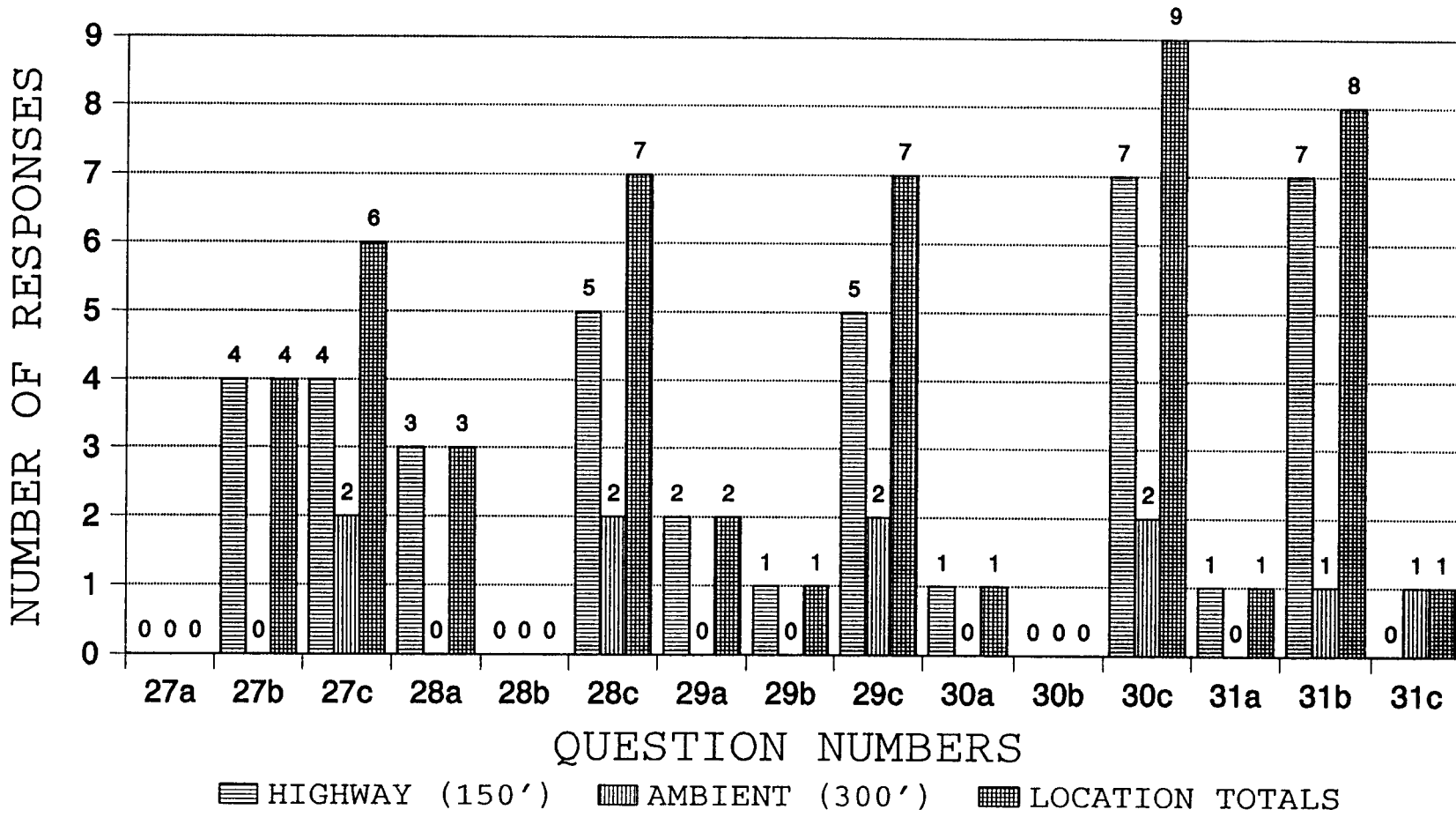
HIGHWAY + AMBIENT GROUPS



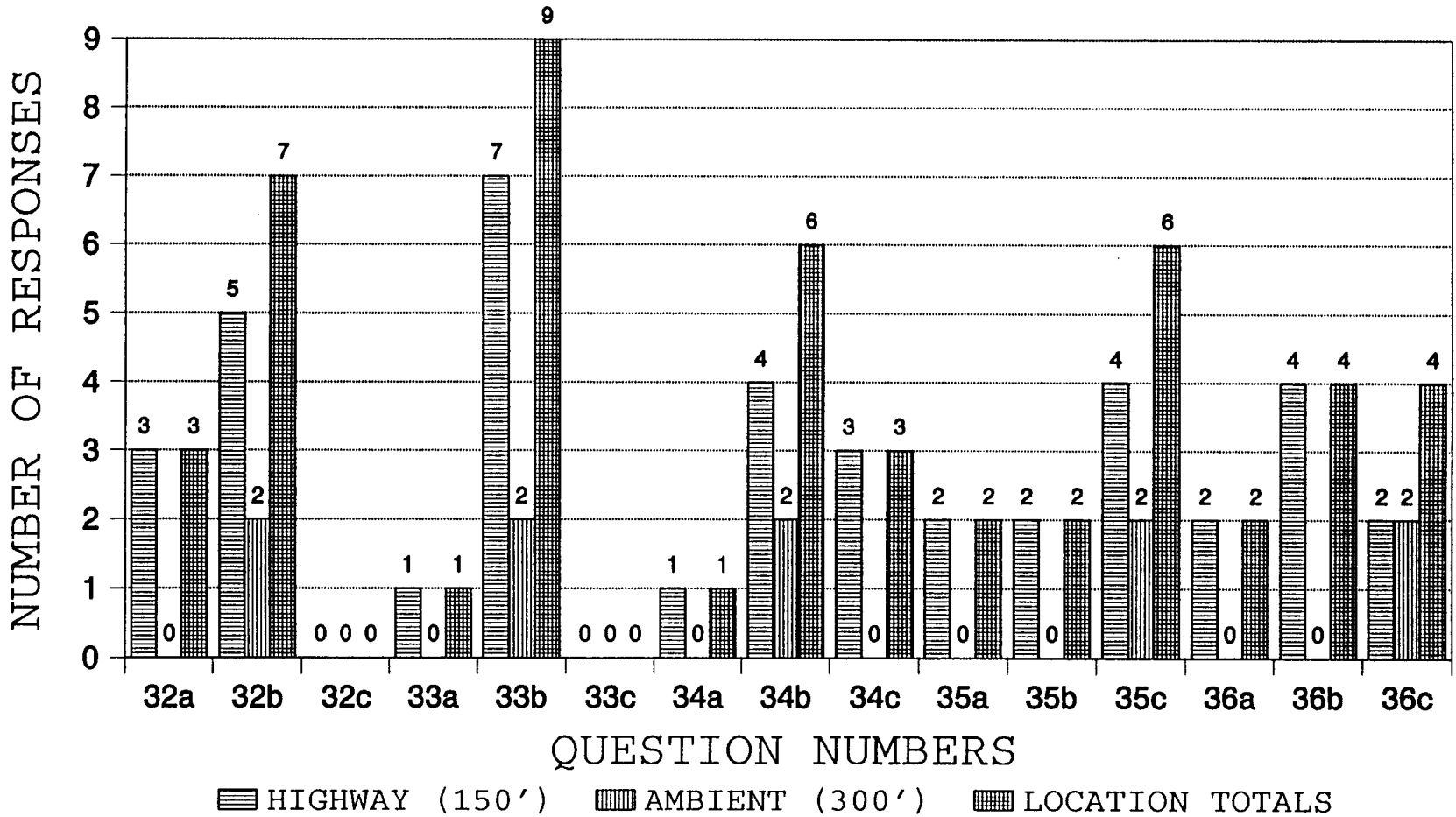
TOTALS - LOCATION 3

HARRISON - I-280

HIGHWAY + AMBIENT GROUPS



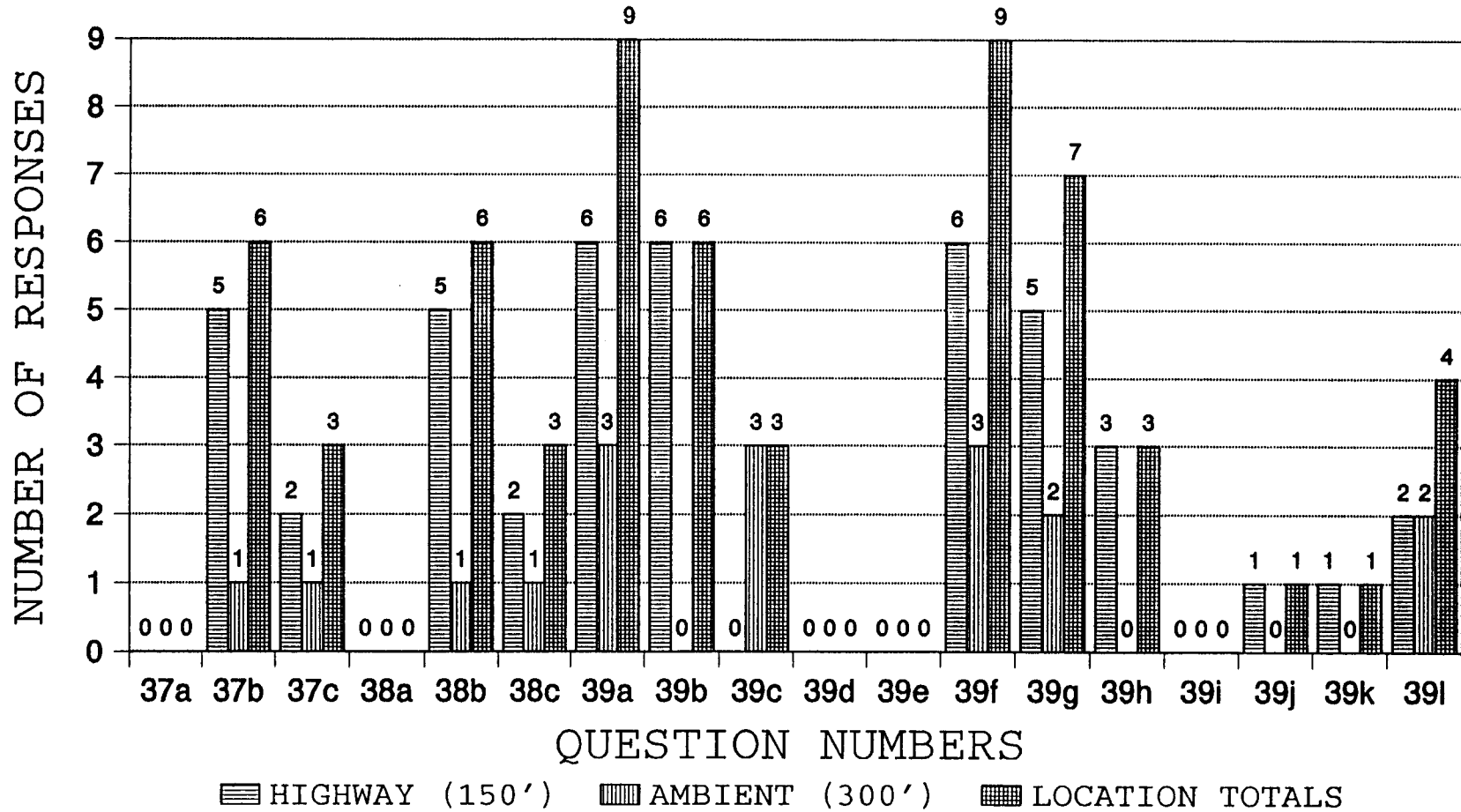
TOTALS - LOCATION 3
HARRISON - I-280
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 3

HARRISON - I-280

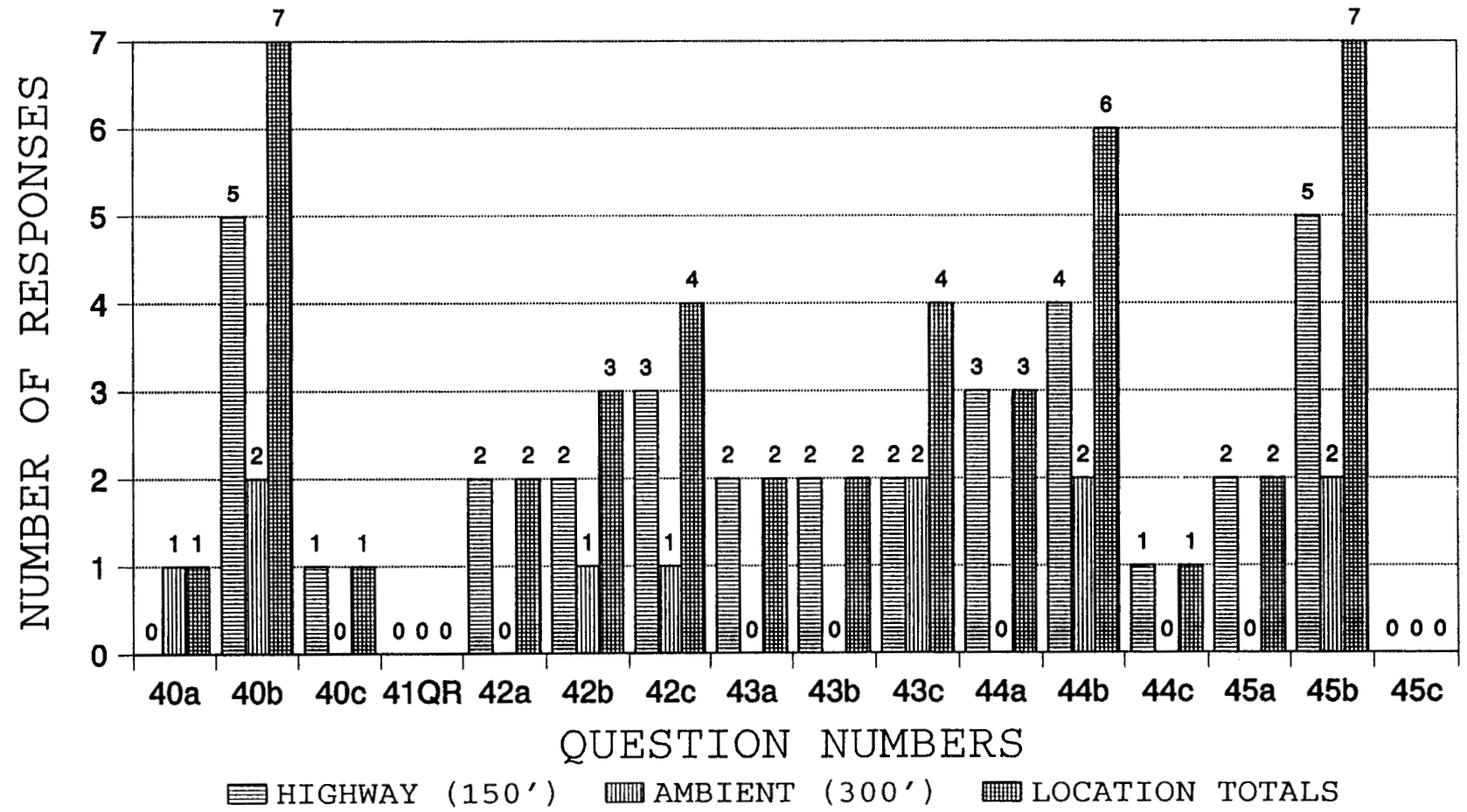
HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 3

HARRISON - I-280

HIGHWAY + AMBIENT GROUPS

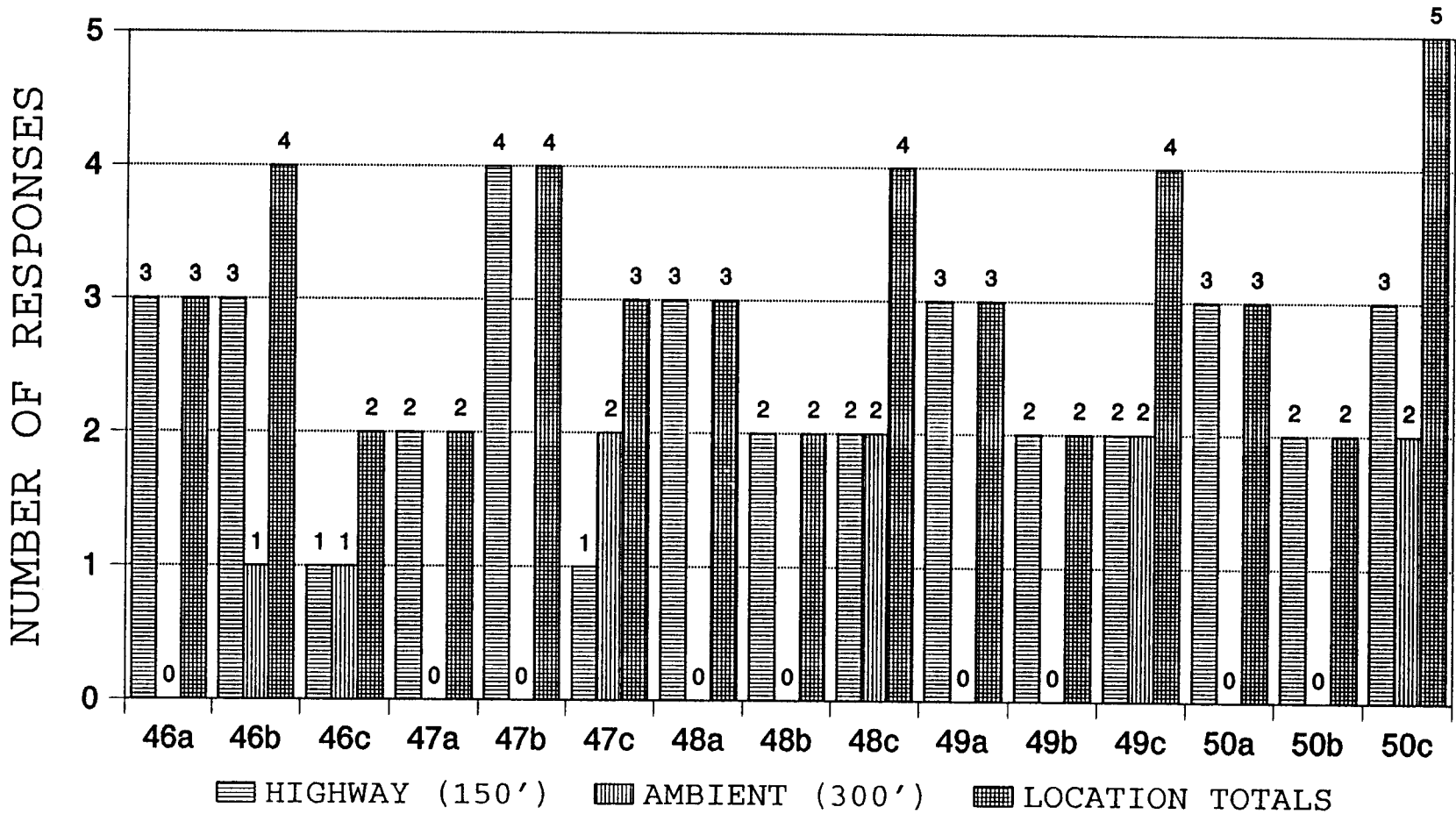


TOTALS - LOCATION 3

HARRISON - I-280

HIGHWAY + AMBIENT GROUPS

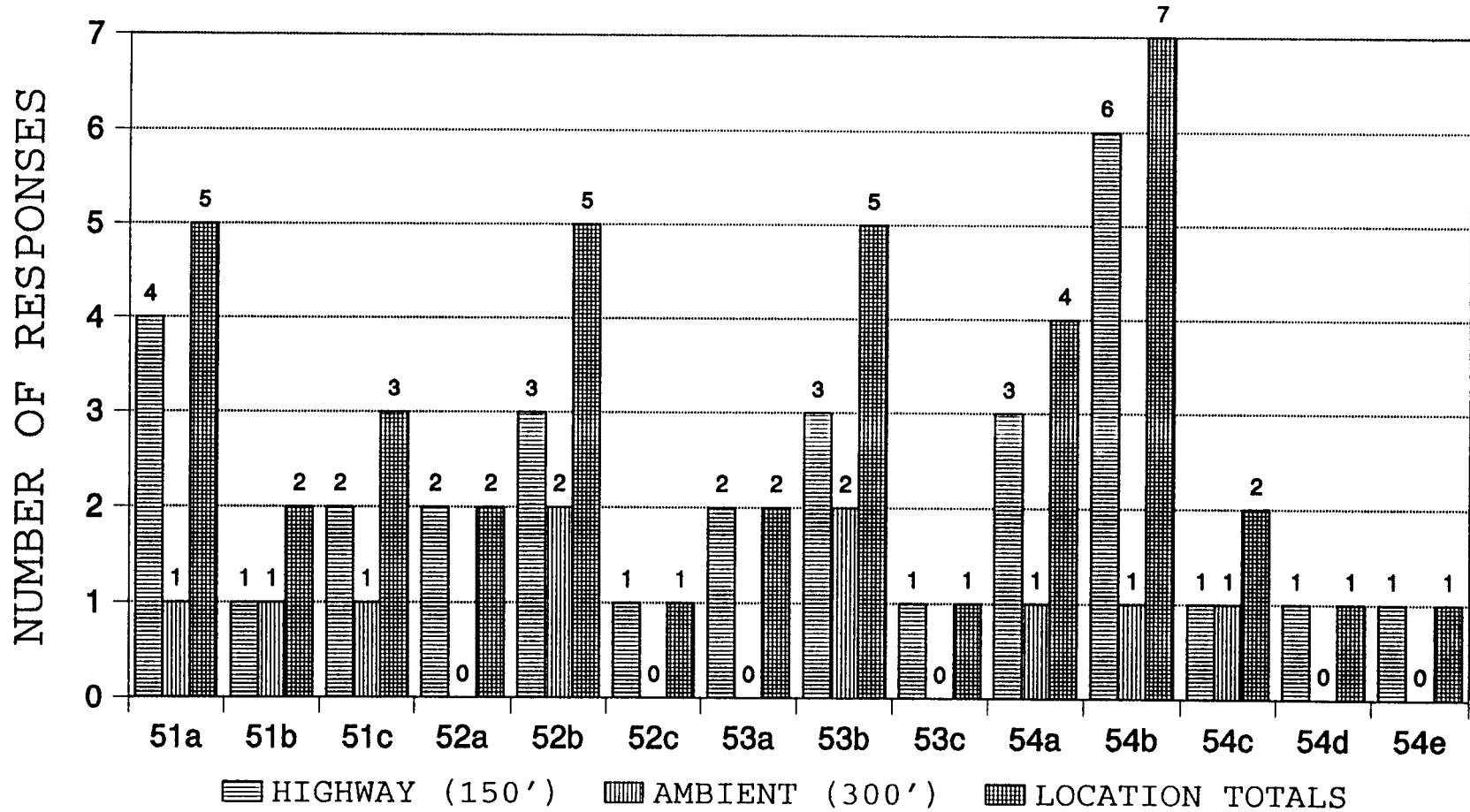
-99-



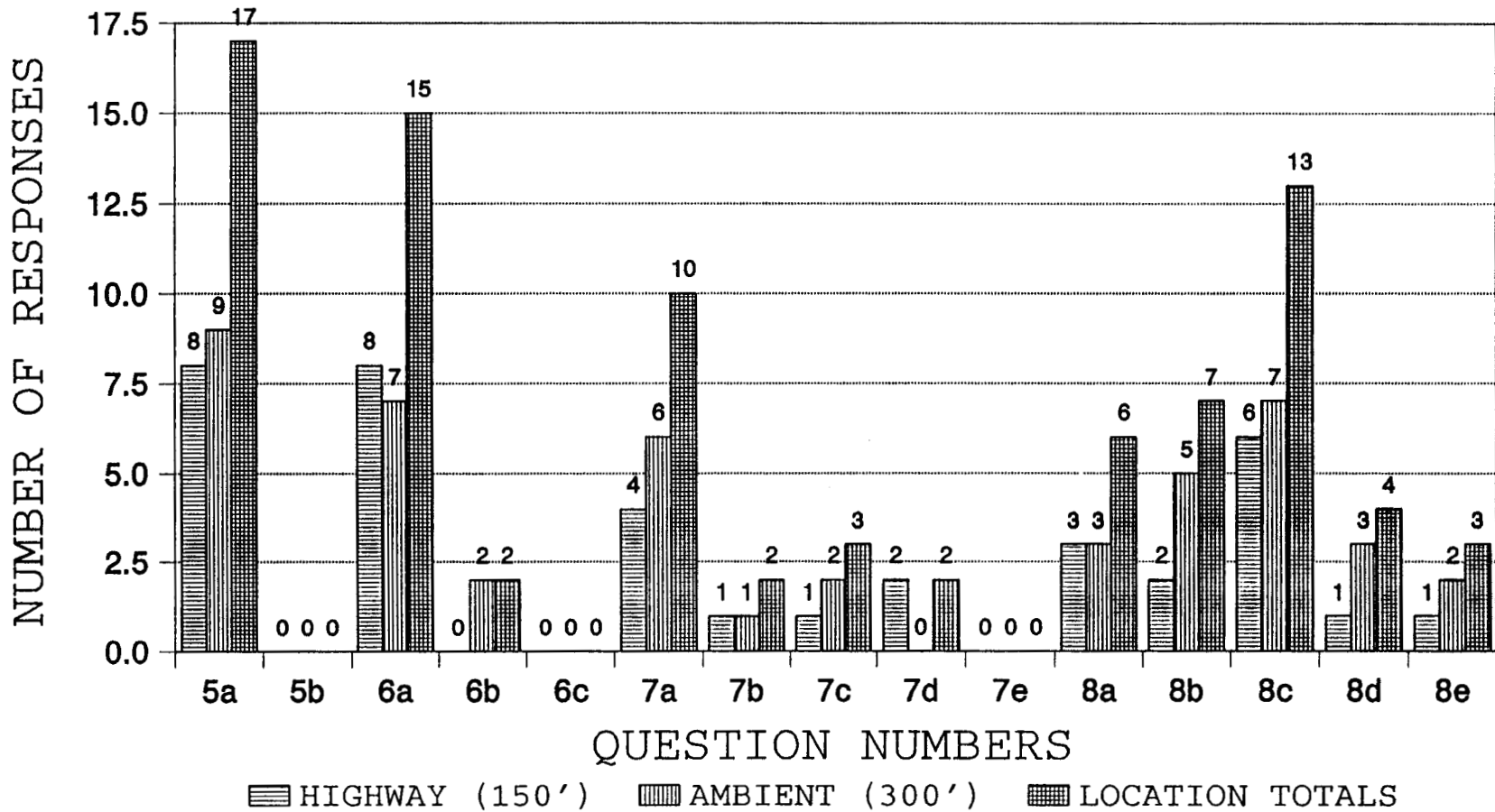
TOTALS - LOCATION 3

HARRISON - I-280

HIGHWAY + AMBIENT GROUPS



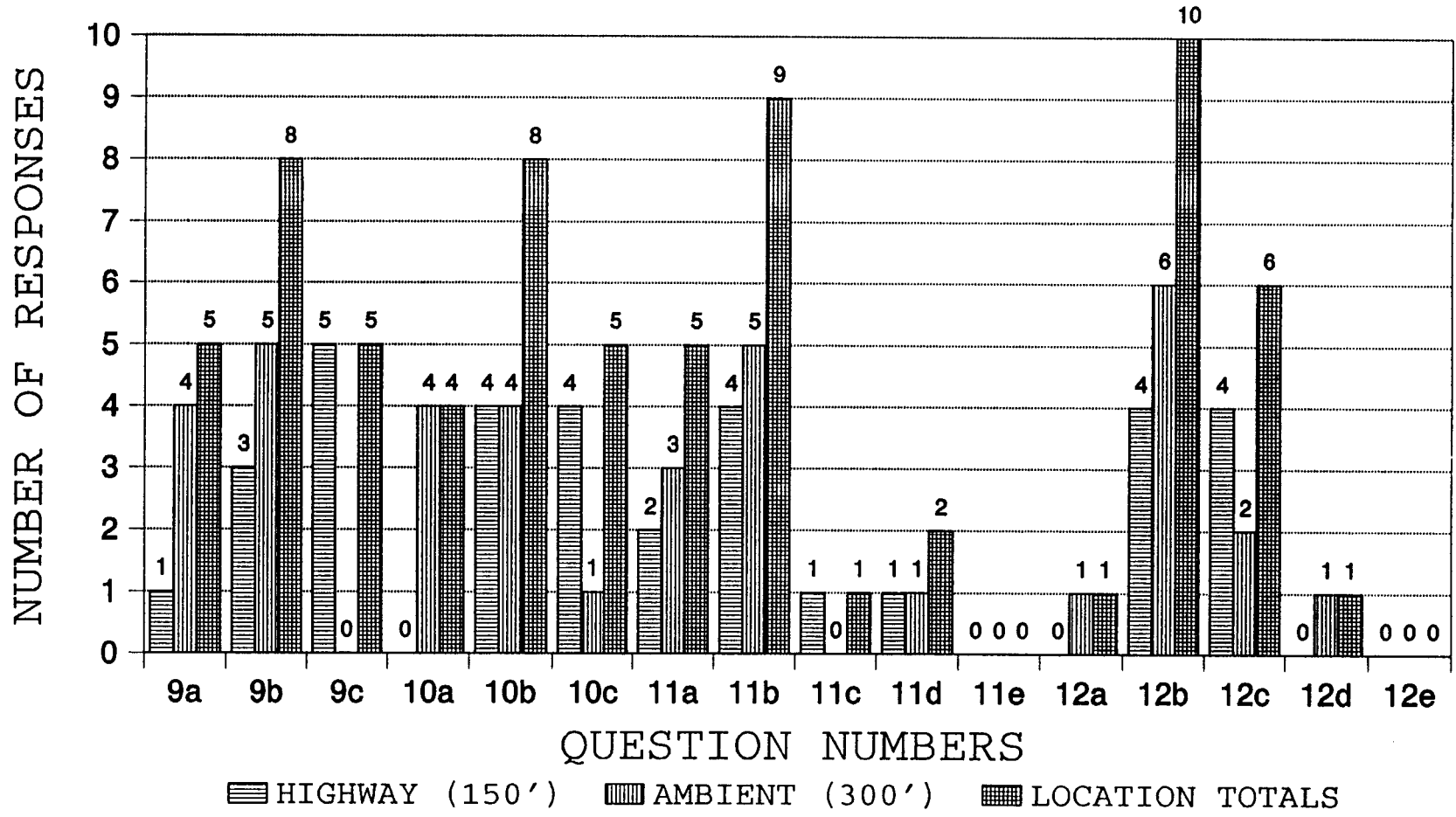
TOTALS - LOCATION 4
HO-HO-KUS - RT.17
 HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 4

HO-HO-KUS - RT. 17

HIGHWAY + AMBIENT GROUPS

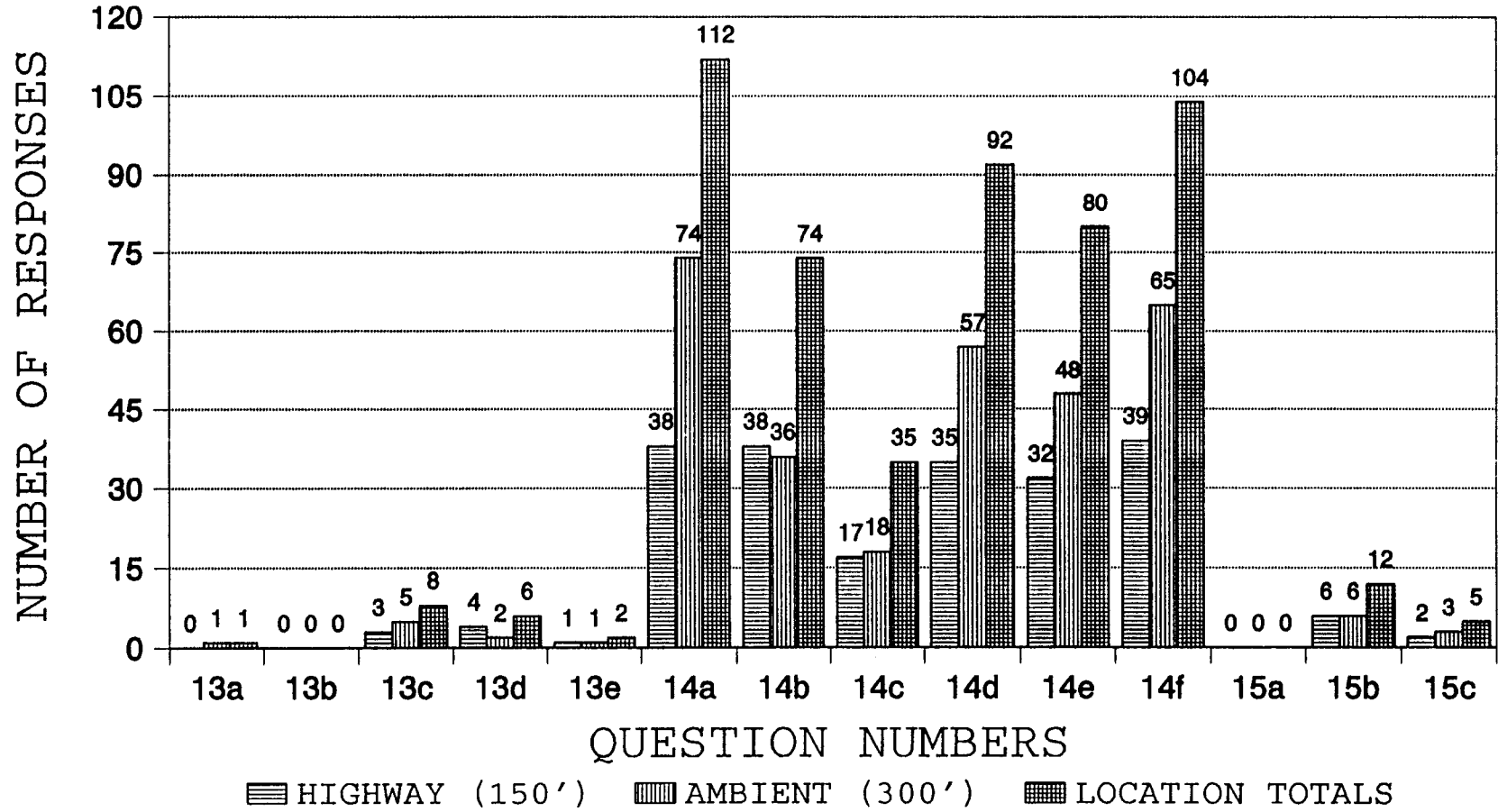


-69-

TOTALS - LOCATION 4

HO-HO-KUS - RT. 17

HIGHWAY + AMBIENT GROUPS

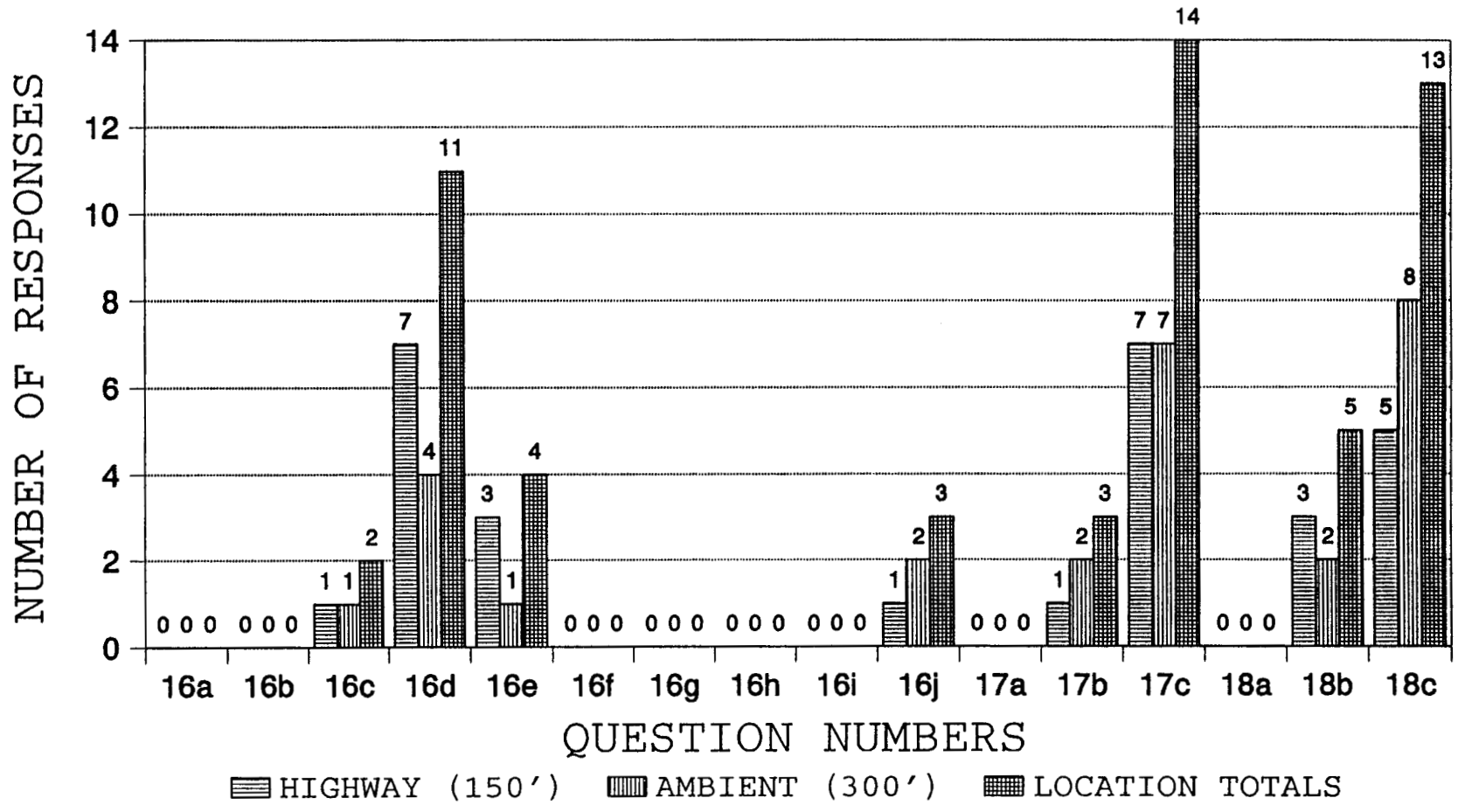


TOTALS - LOCATION 4

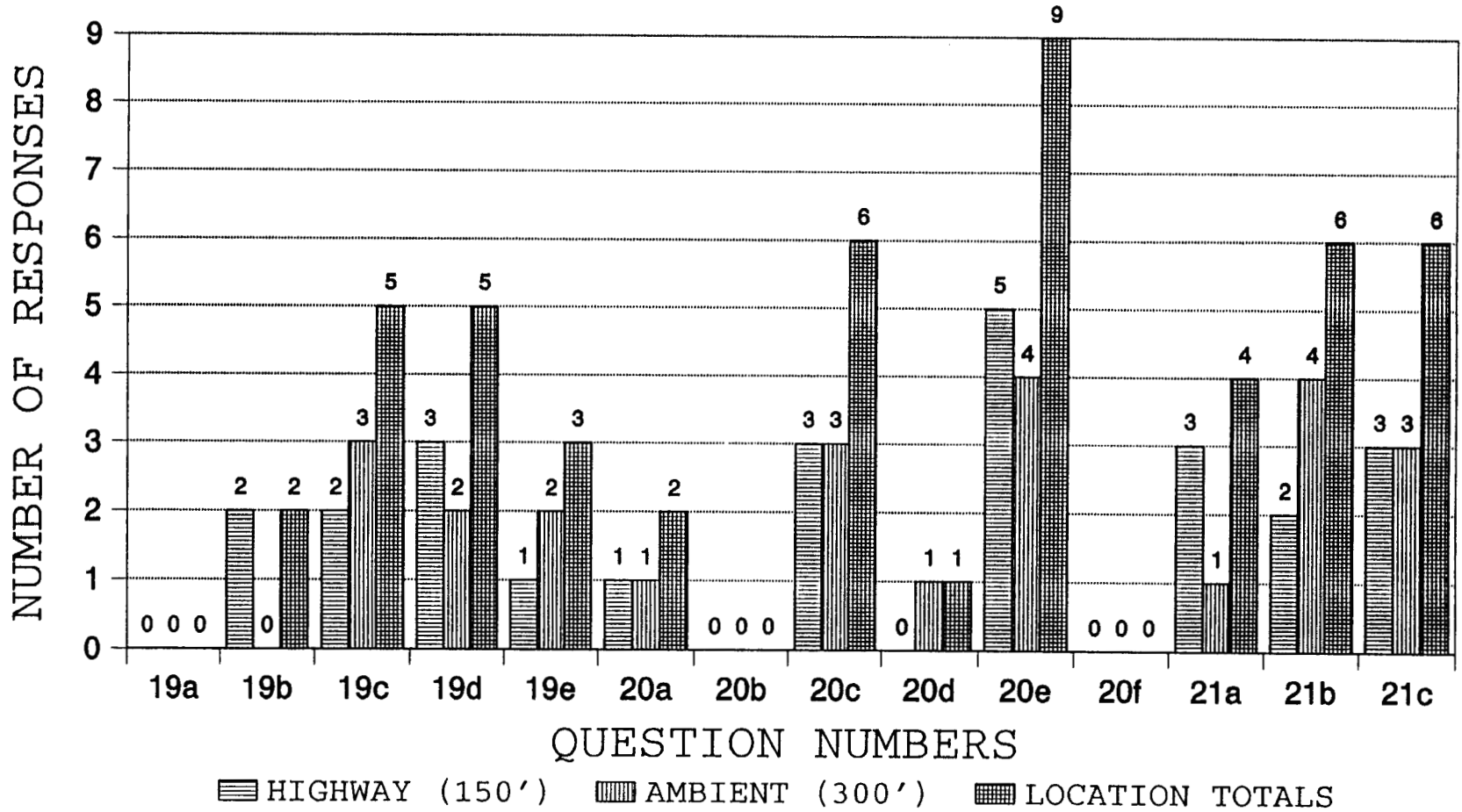
HO-HO-KUS - RT. 17

HIGHWAY + AMBIENT GROUPS

-1/-



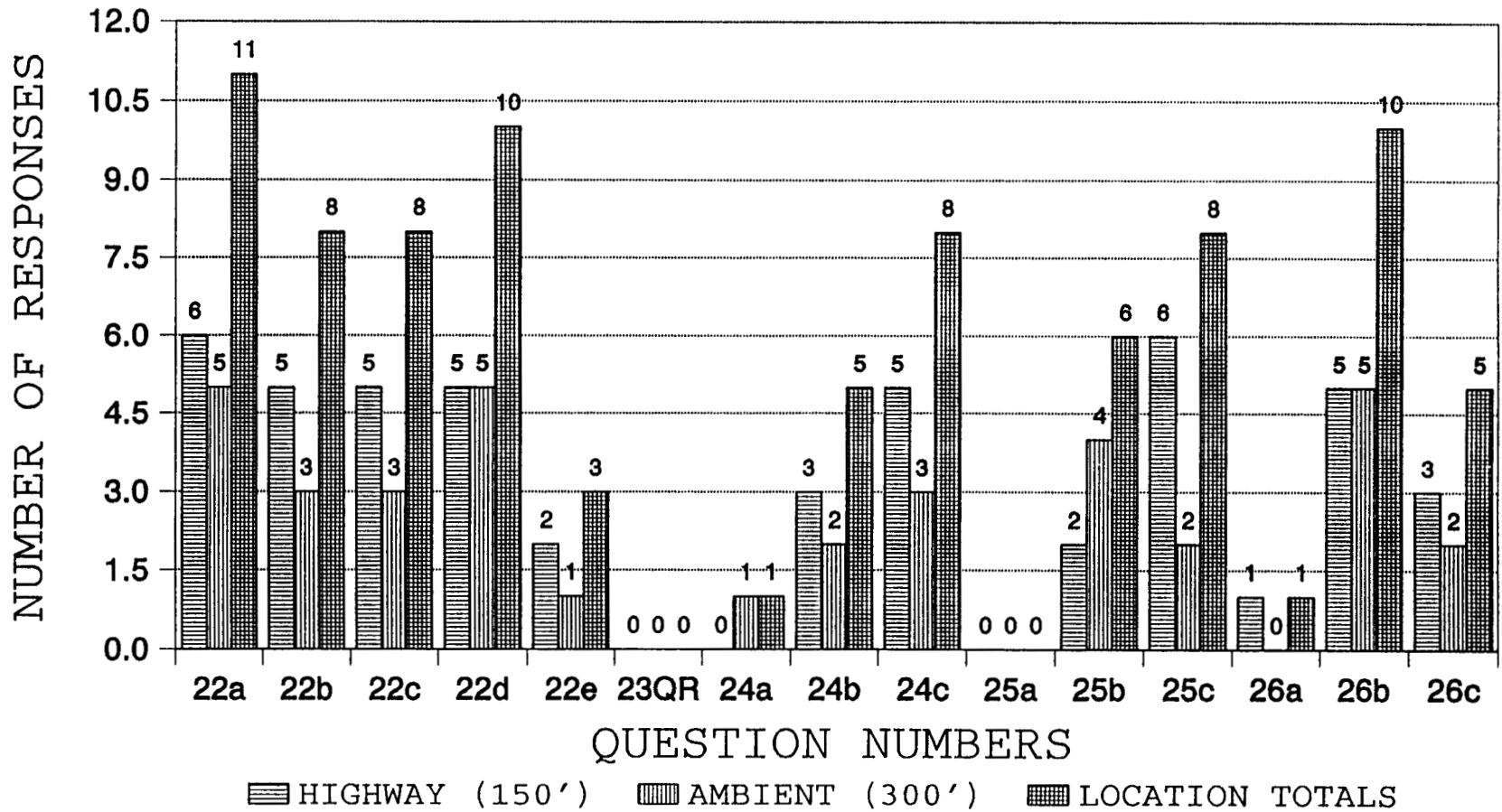
TOTALS - LOCATION 4
HO-HO-KUS - RT. 17
 HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 4

HO-HO-KUS - RT. 17

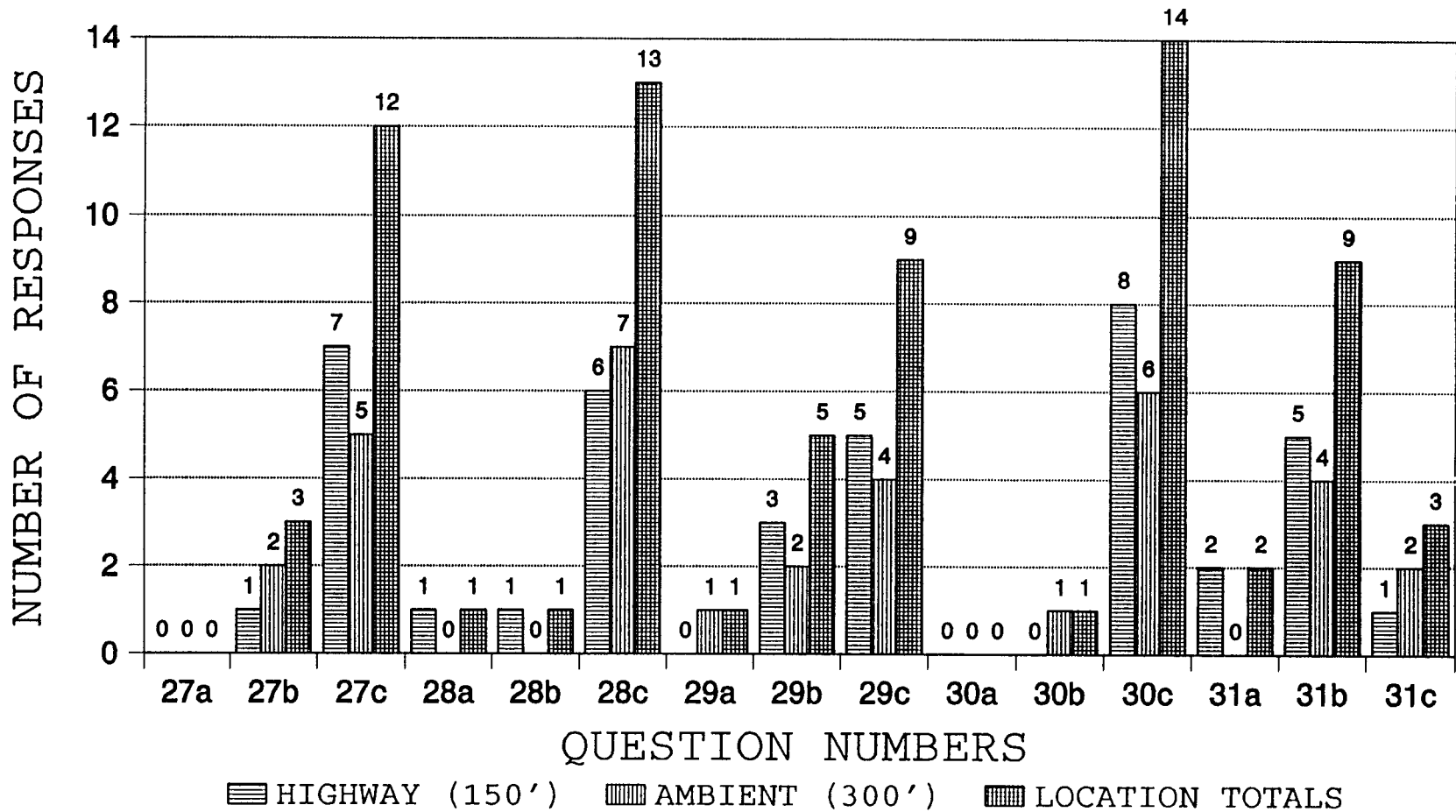
HIGHWAY + AMBIENT GROUPS



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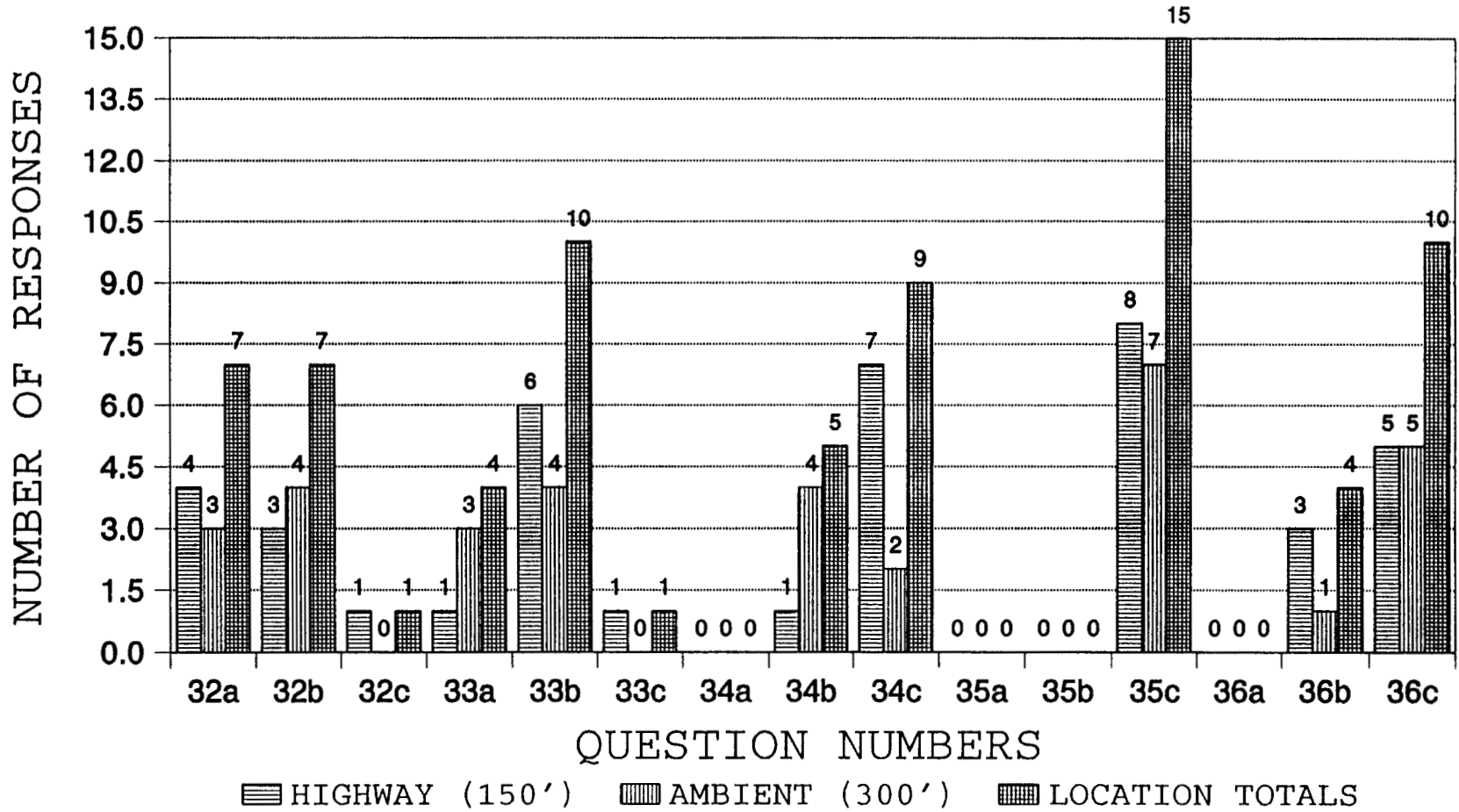
HO-HO-KUS - RT. 17

HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 4
HO-HO-KUS - RT. 17
 HIGHWAY + AMBIENT GROUPS

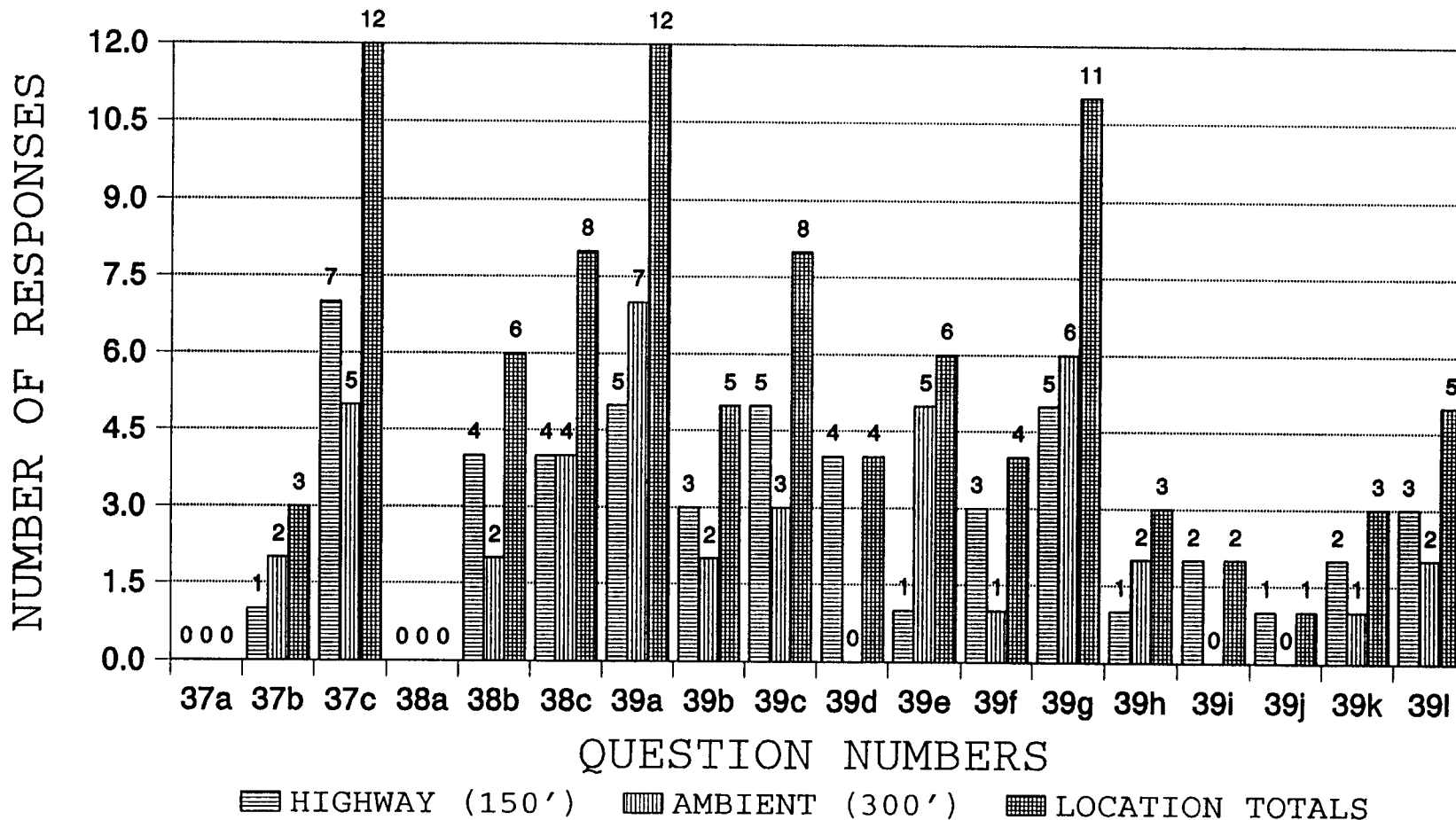
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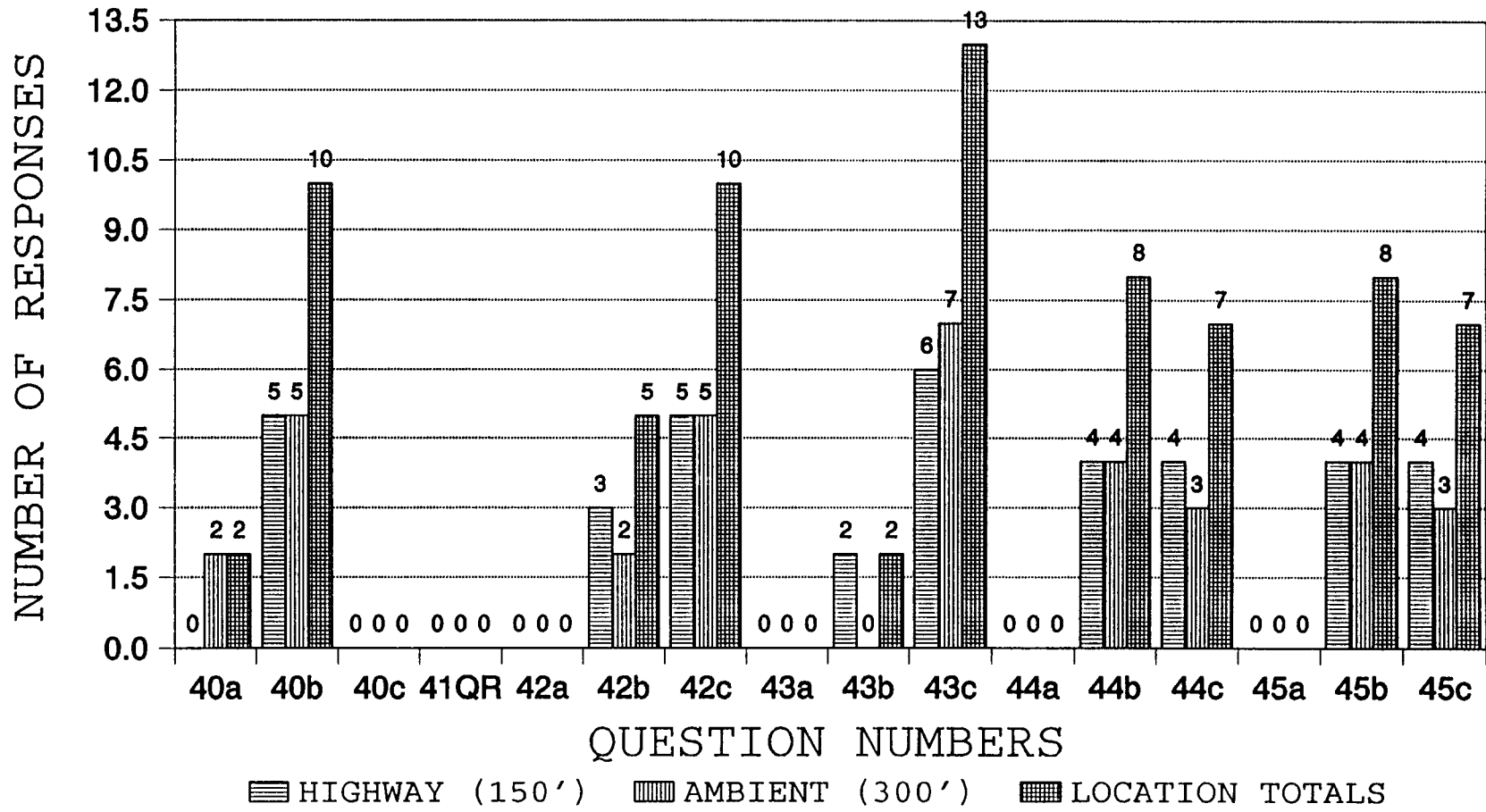
TOTALS - LOCATION 4

HO-HO-KUS - RT. 17

HIGHWAY + AMBIENT GROUPS



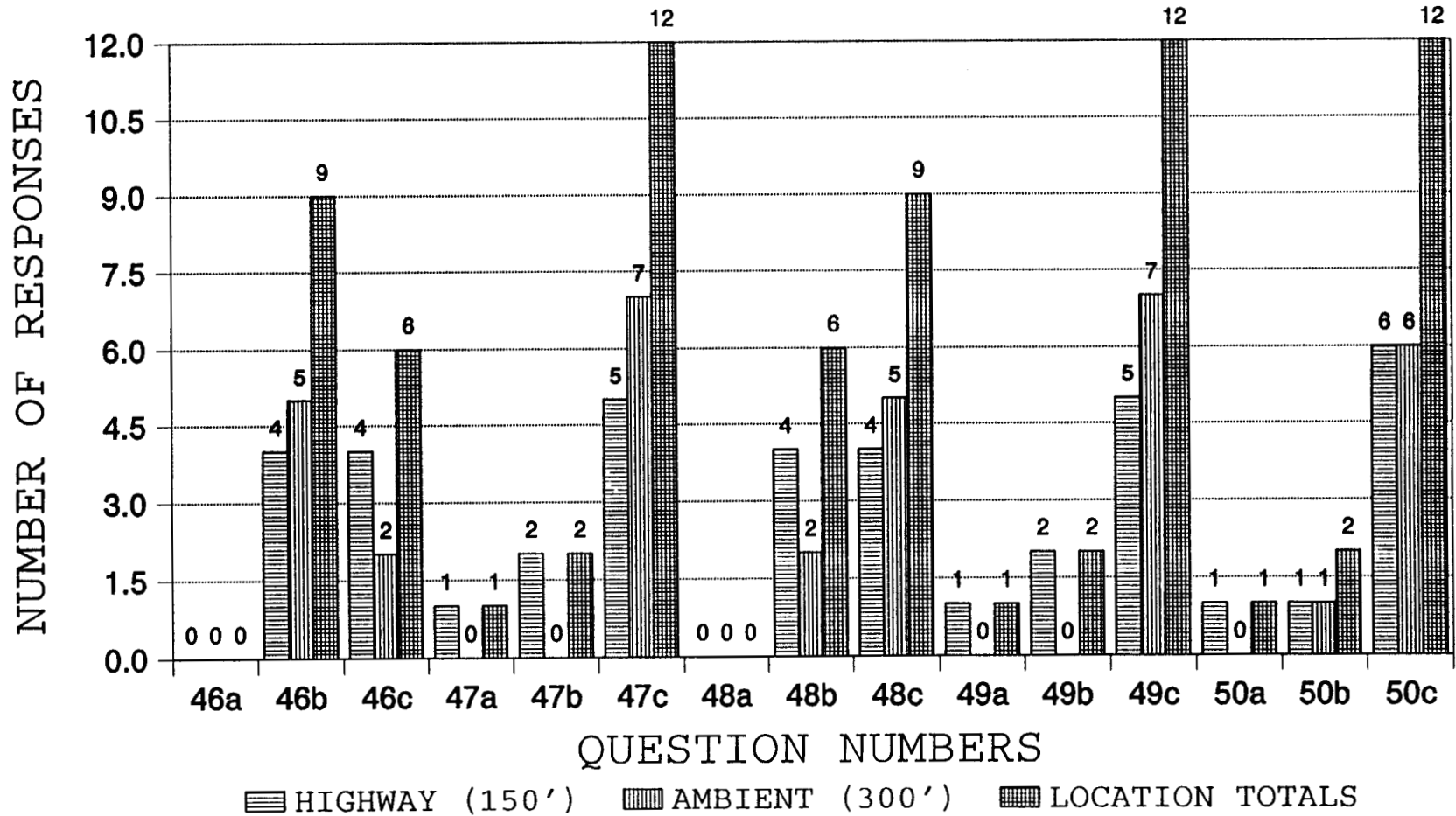
TOTALS - LOCATION 4
HO-HO-KUS - RT. 17
 HIGHWAY + AMBIENT GROUPS



TOTALS - LOCATION 4

HO-HO-KUS - RT. 17

HIGHWAY + AMBIENT GROUPS

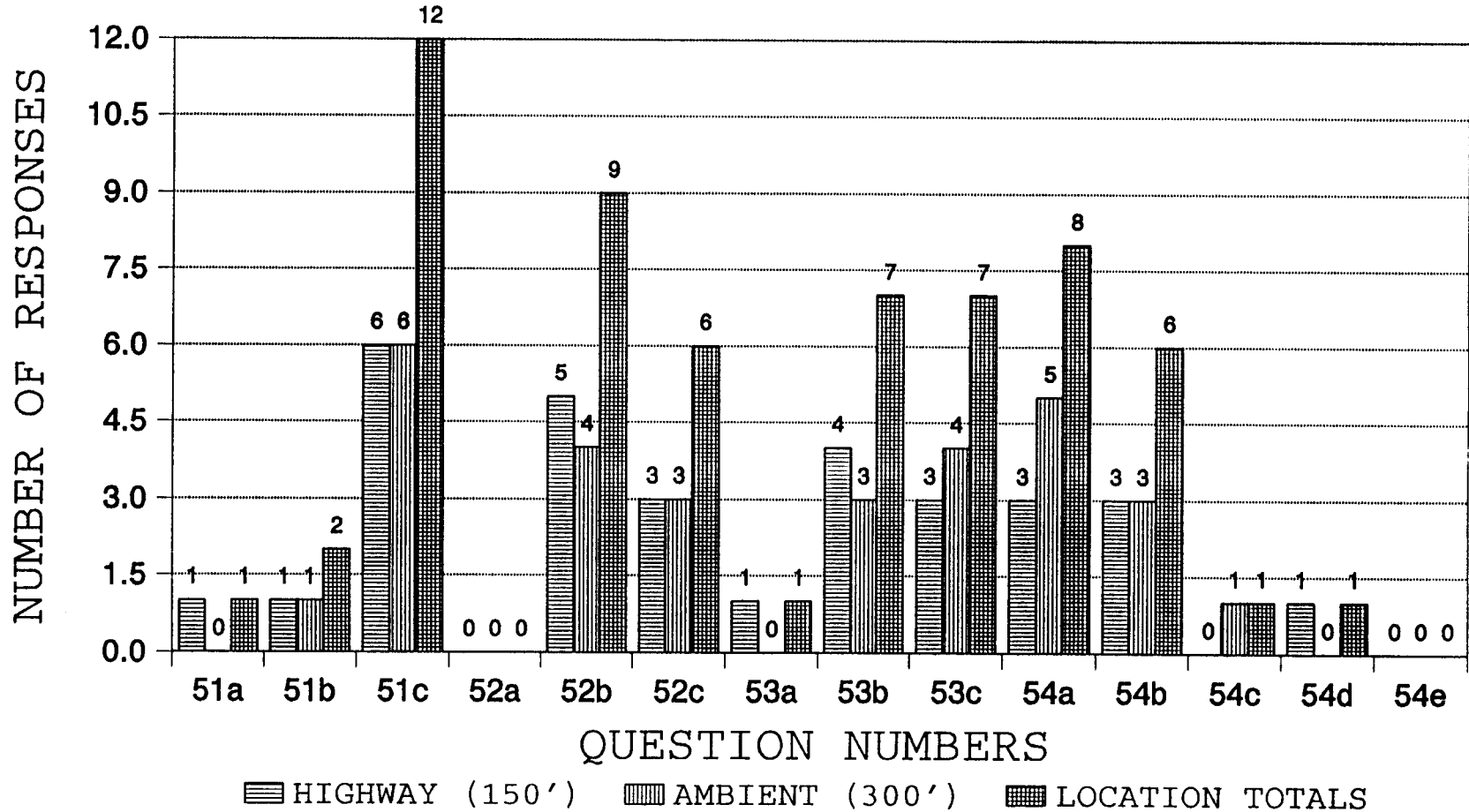


TOTALS - LOCATION 4

HO-HO-KUS - RT. 17

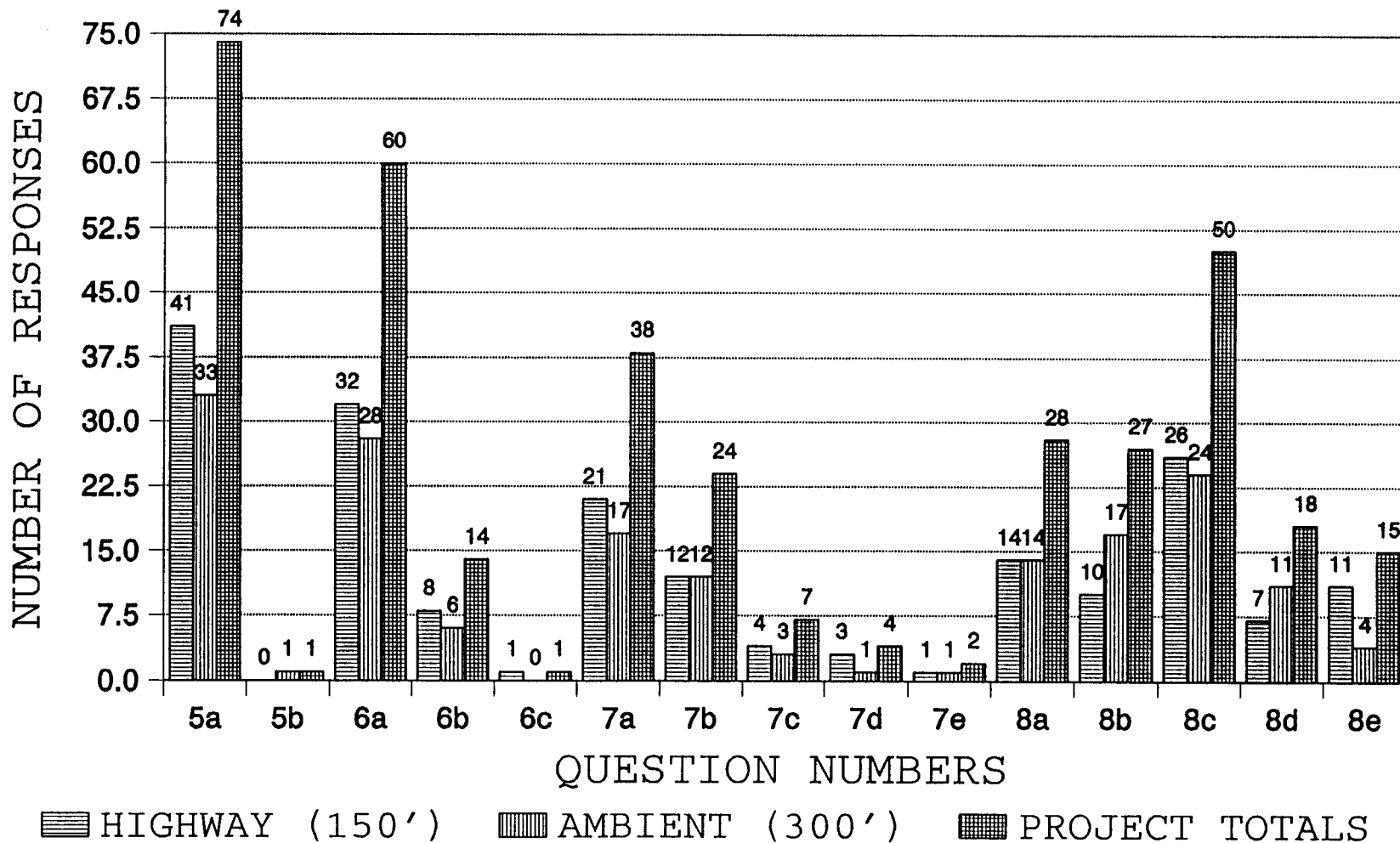
HIGHWAY + AMBIENT GROUPS

-79-



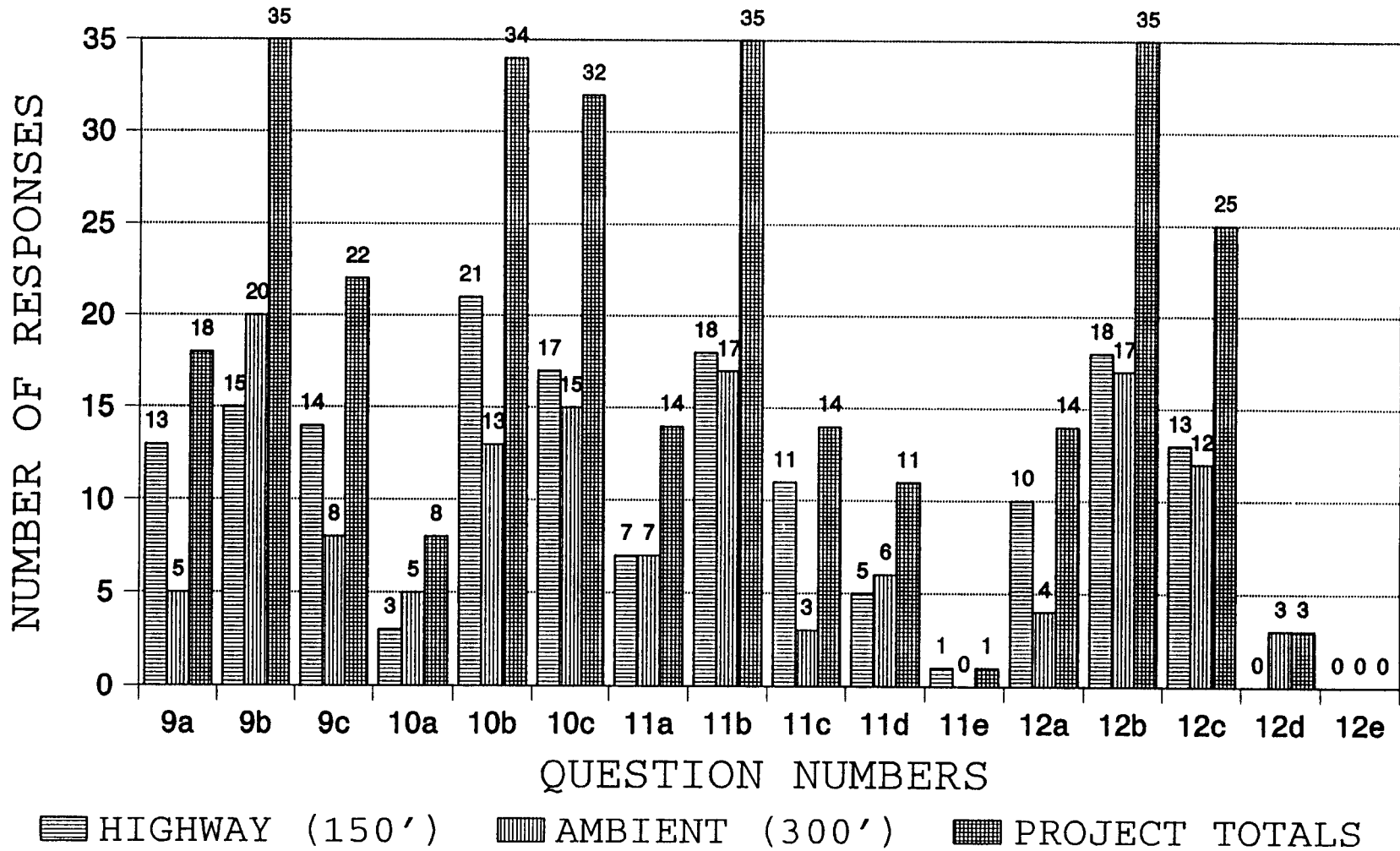
TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



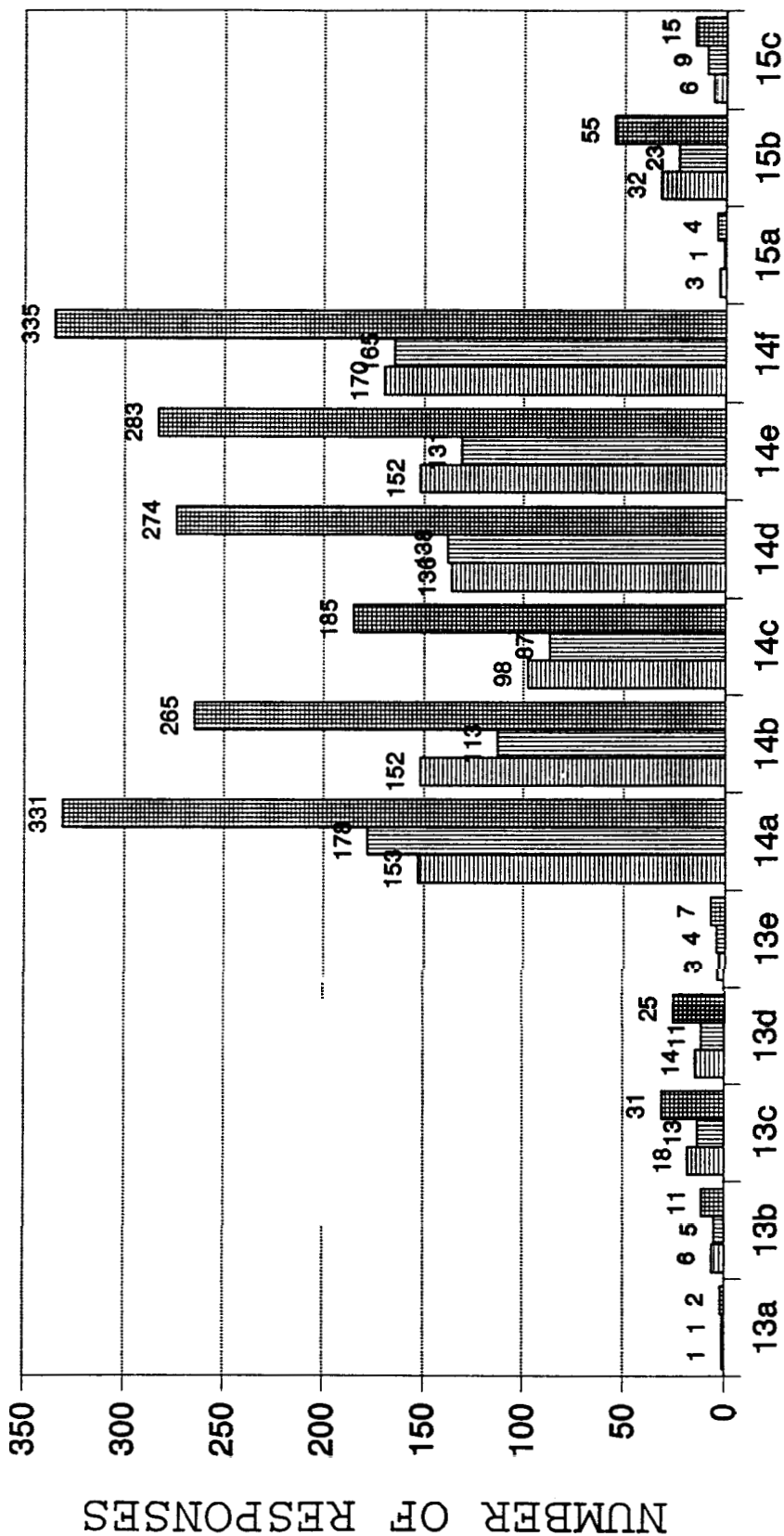
TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS

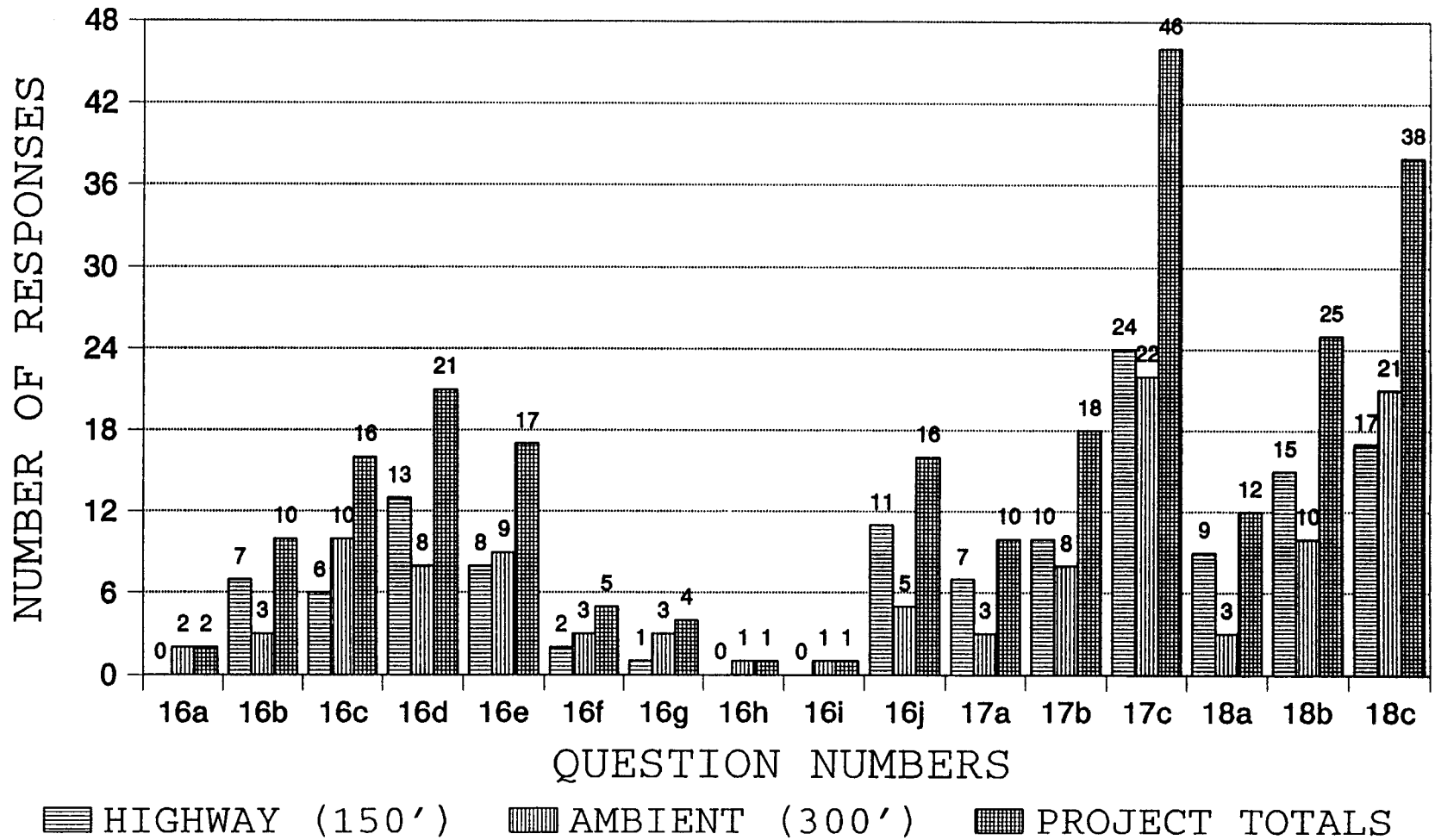


QUESTION NUMBERS

HIGHWAY (150')
 AMBIENT (300')
 PROJECT TOTALS

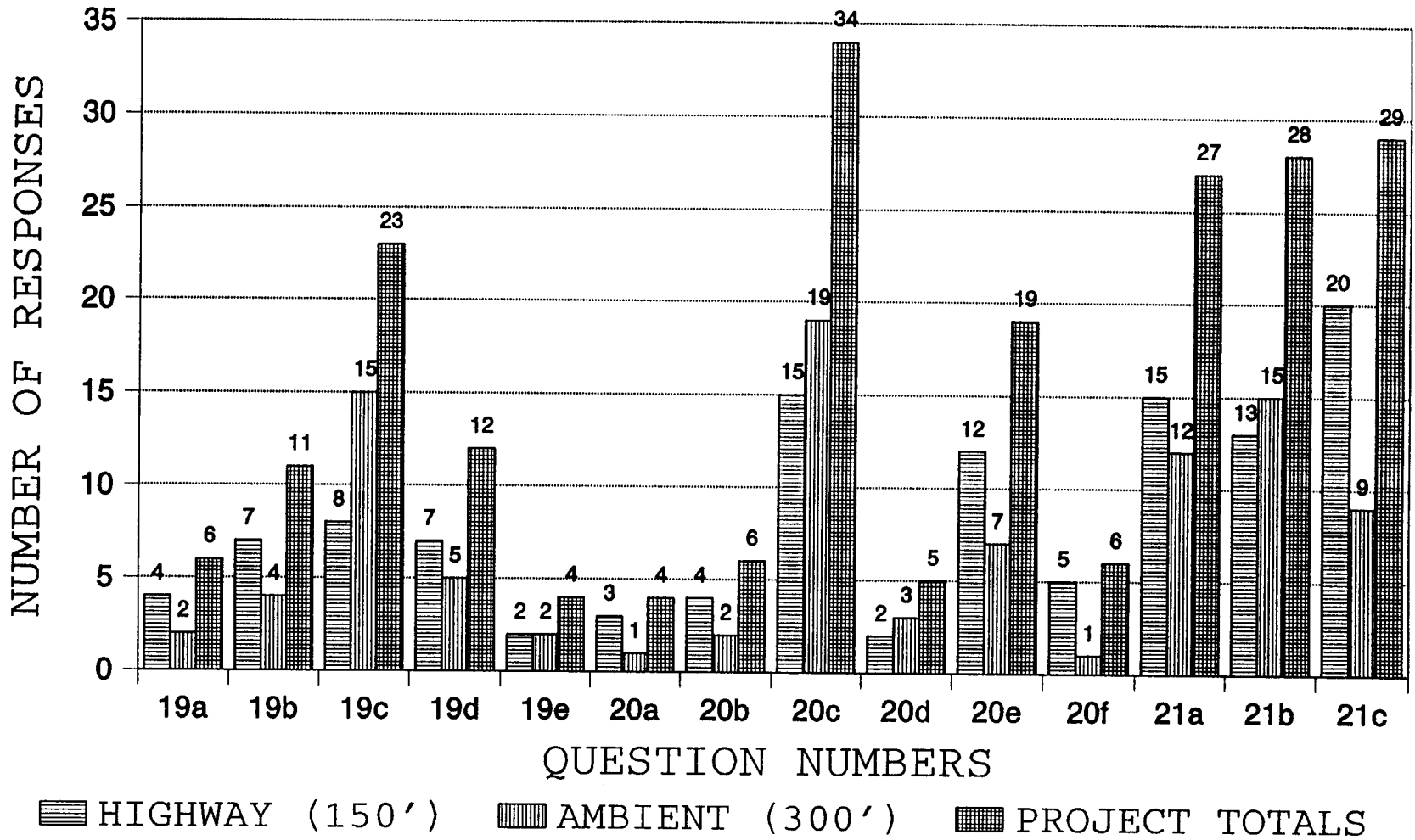
TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



TOTALS - ALL LOCATIONS

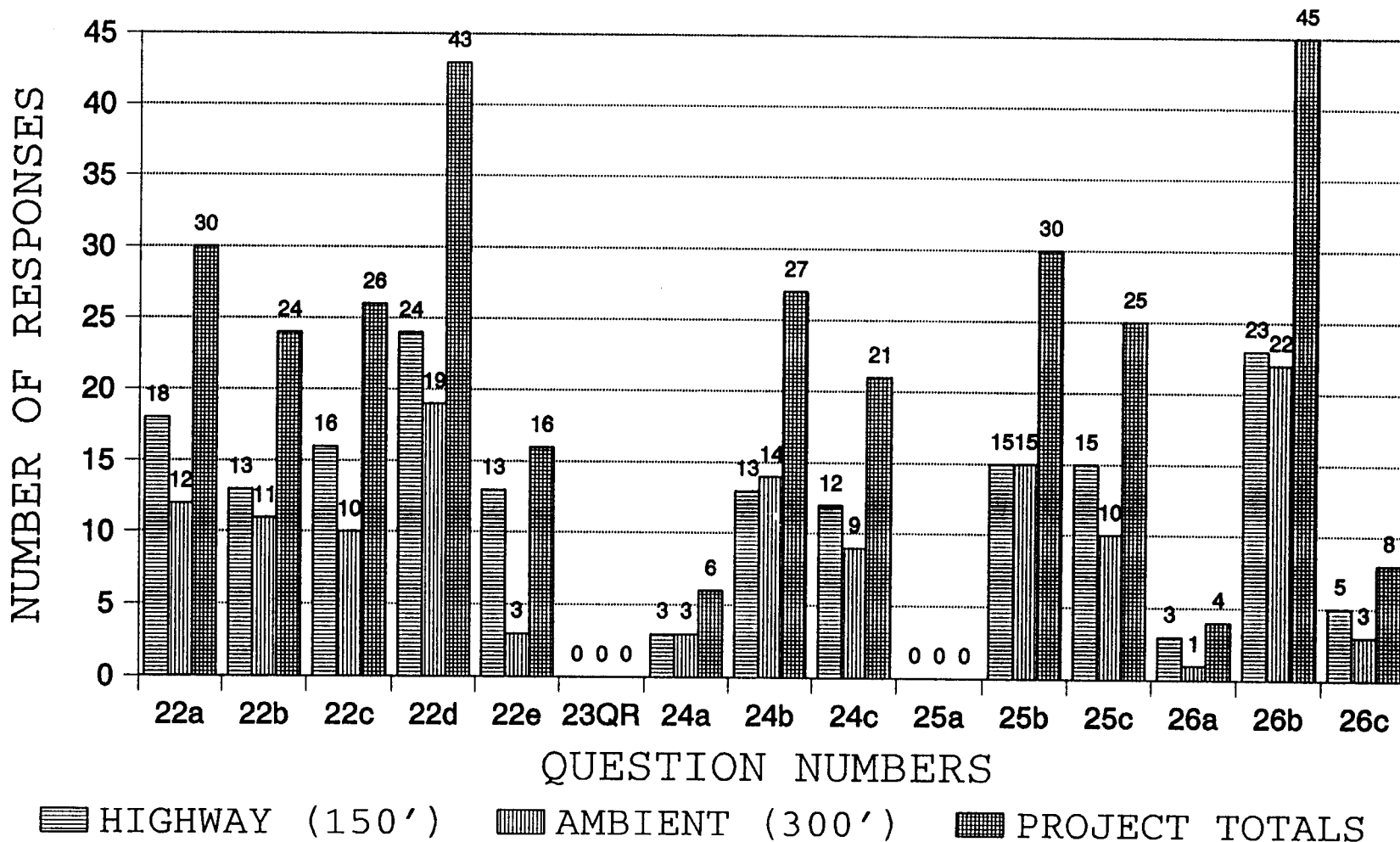
HIGHWAY + AMBIENT TOTAL GROUPS



TOTALS - ALL LOCATIONS

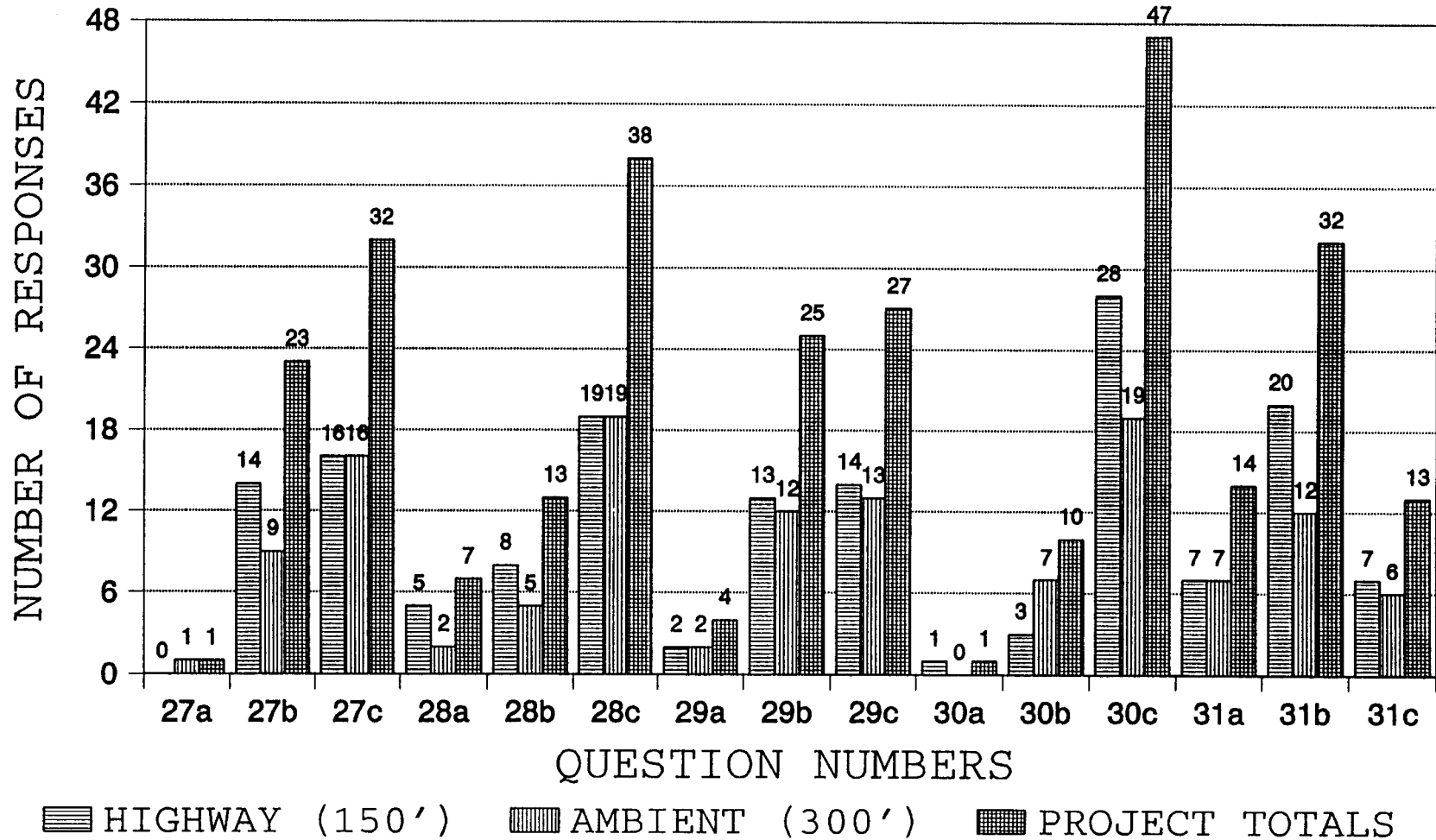
HIGHWAY + AMBIENT TOTAL GROUPS

-85-



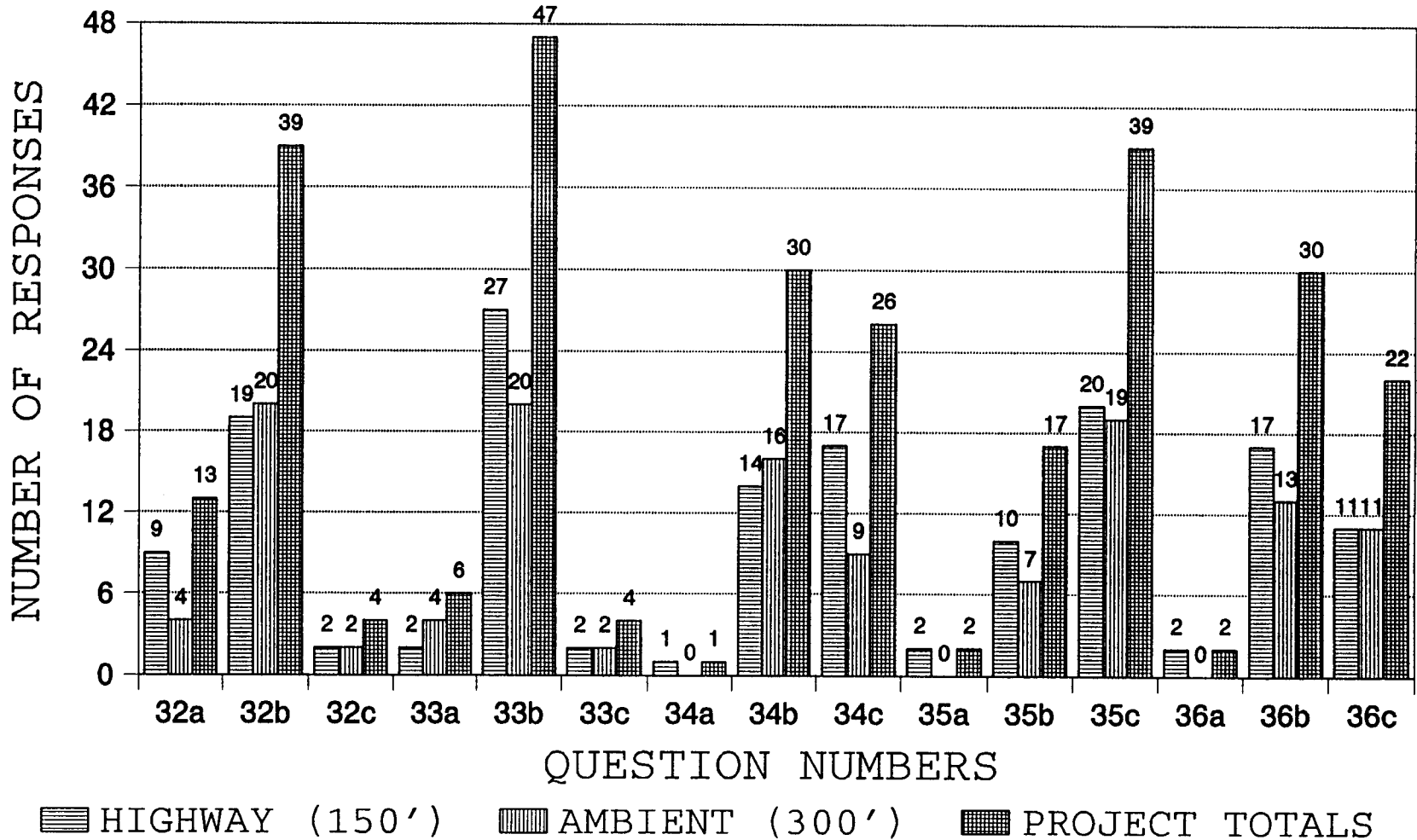
TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



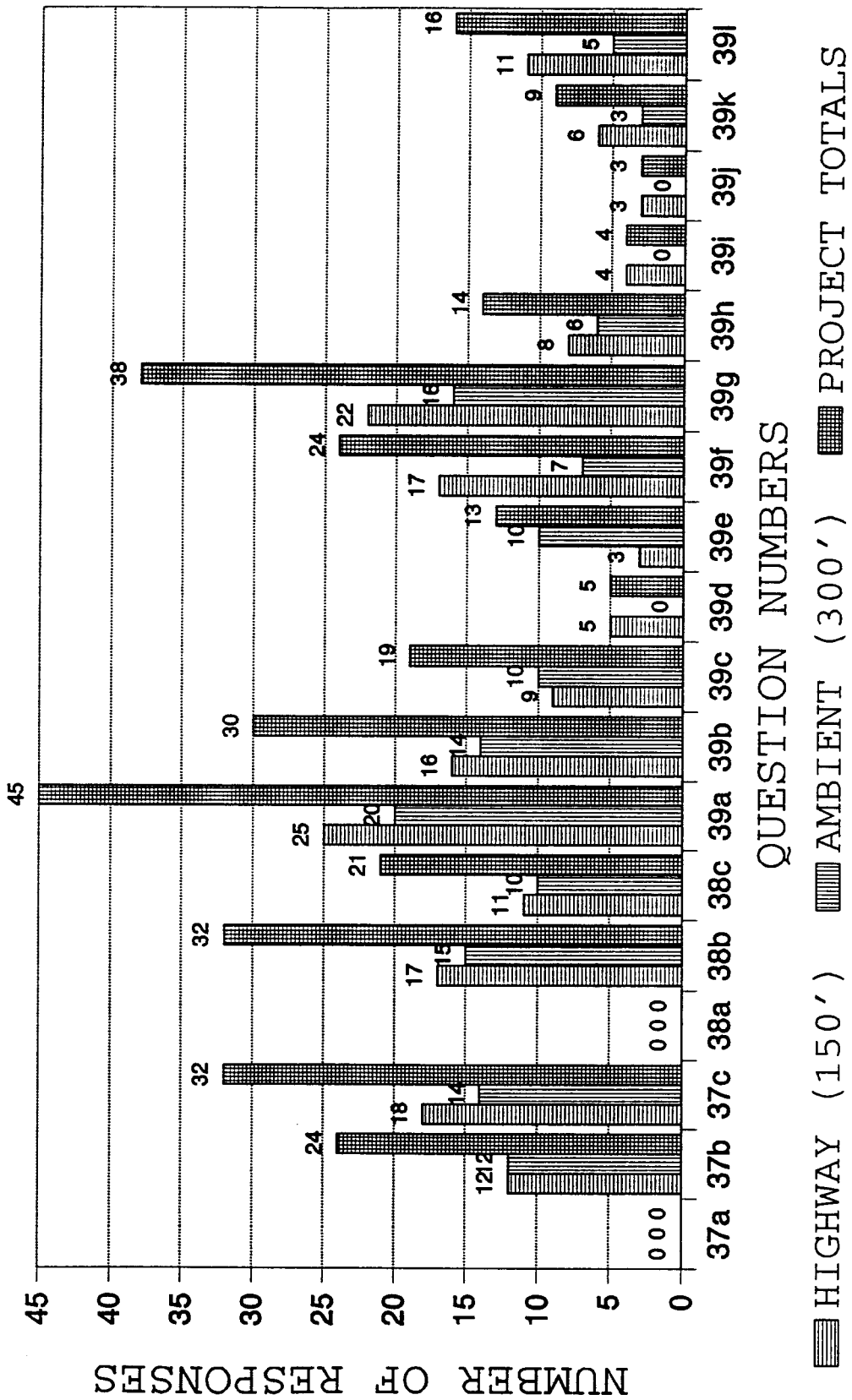
TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



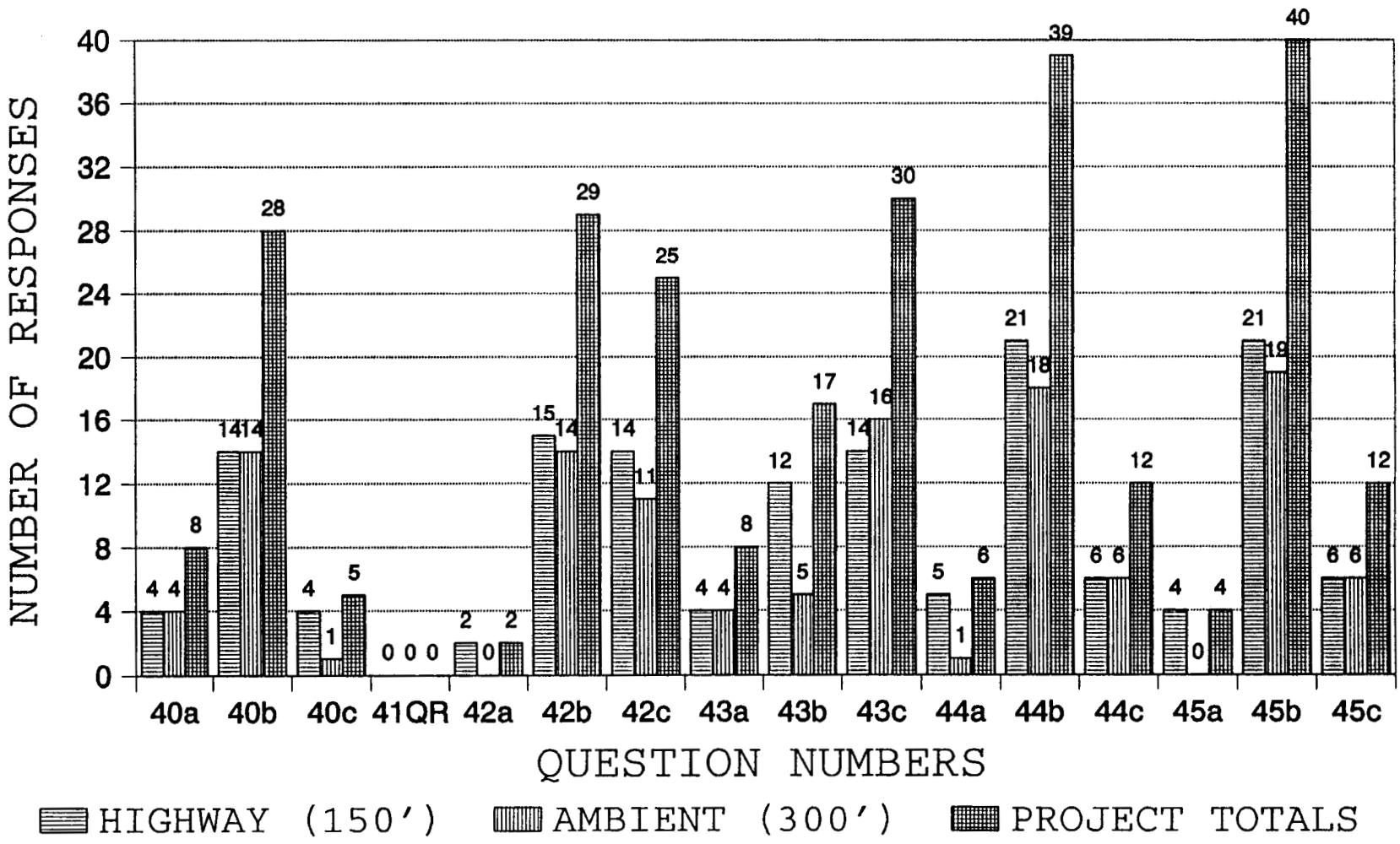
TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



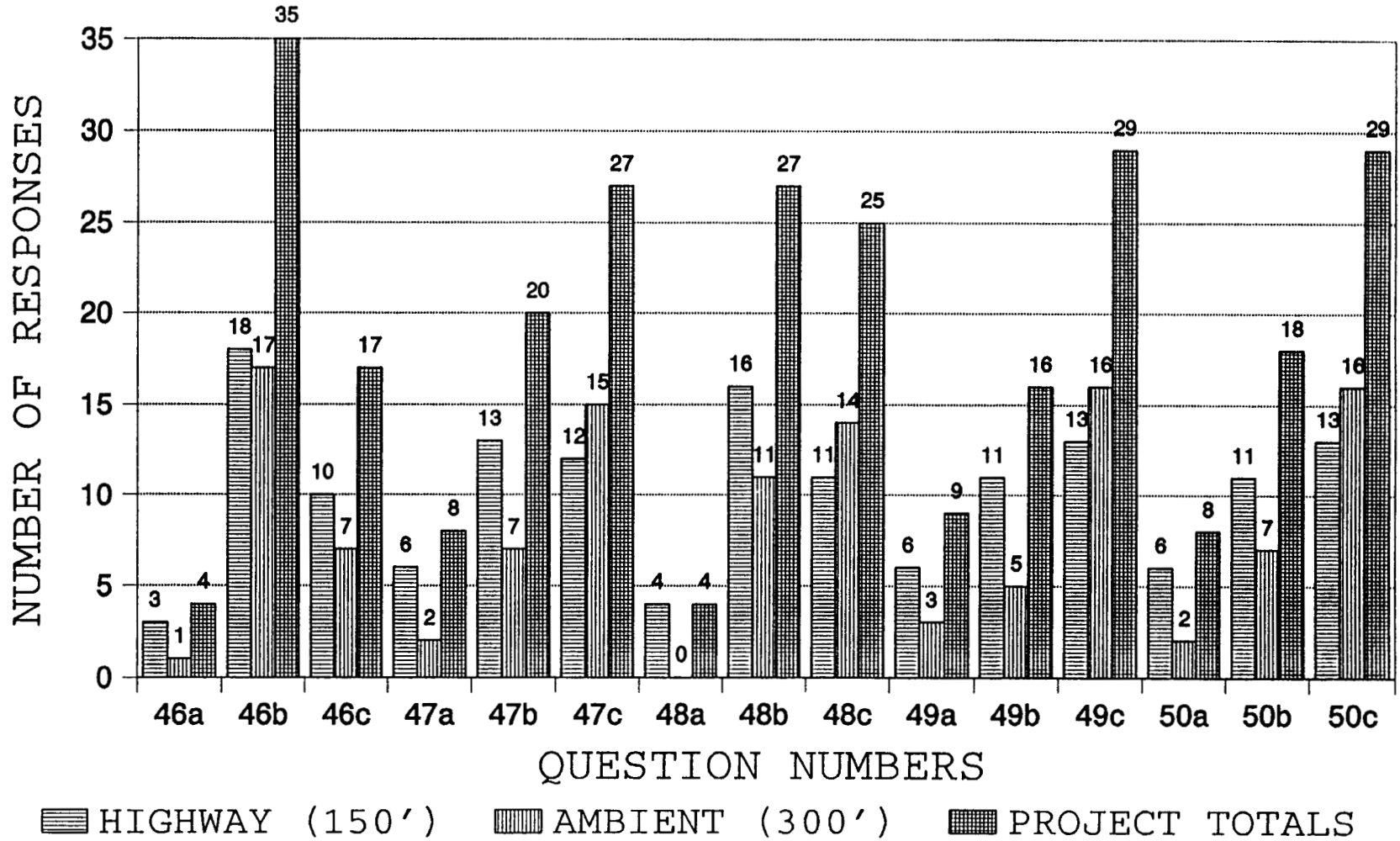
TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



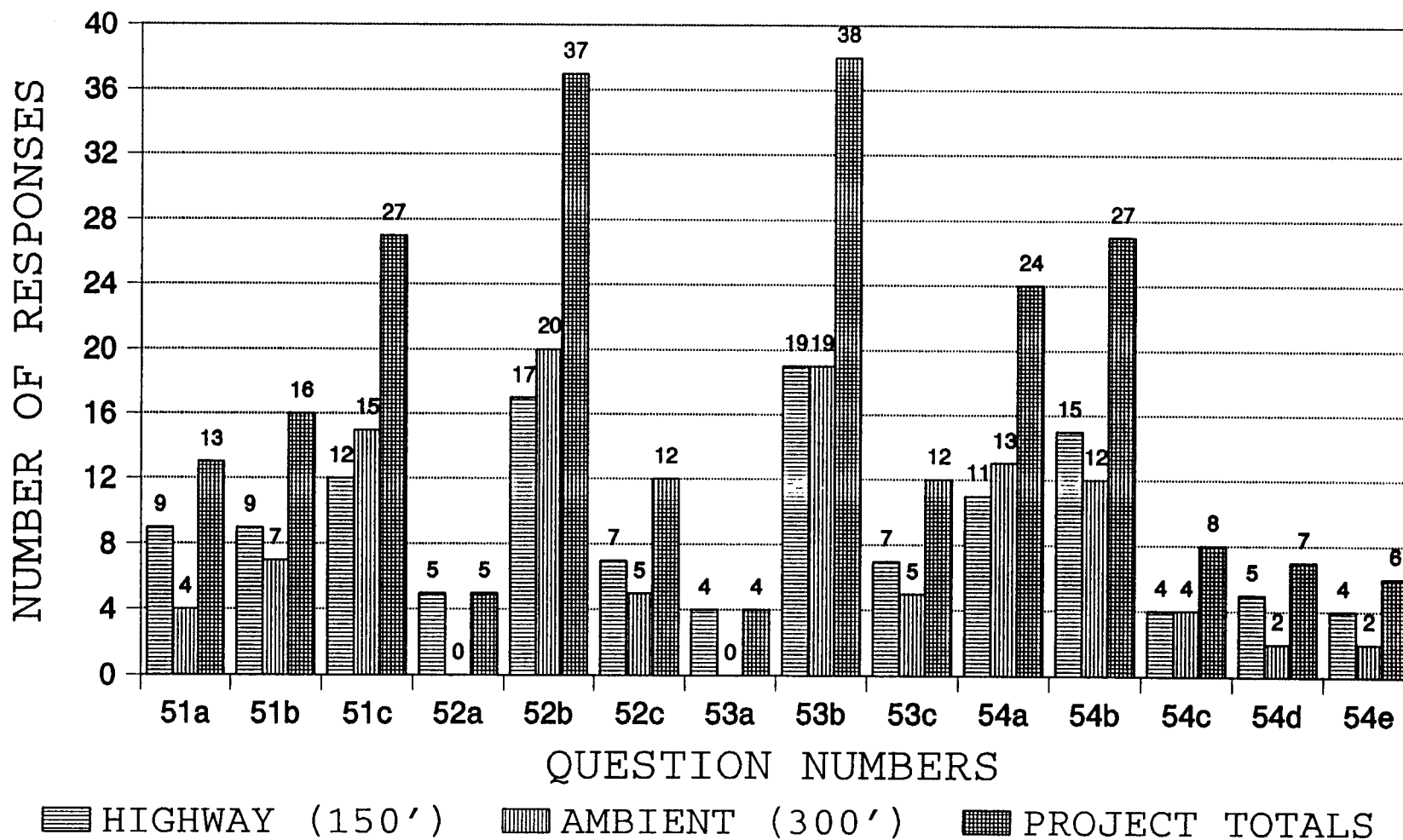
TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



TOTALS - ALL LOCATIONS

HIGHWAY + AMBIENT TOTAL GROUPS



APPENDIX III

QUESTIONNAIRE WITH OVERALL TOTALS AND RANKS

The total responses to Question 5 through Question 54 are listed by number of responses to each part of each question, the percentage that the number of responses represents, and a rank for each percentage. The ranks allow for comparison between the responses to unrelated types of questions; e. g., those pertaining to perceptions of the barrier versus those pertaining to its effect on indoor activities.

QUESTION 5. Are you aware of a highway noise barrier in the vicinity of your residence?

	RESPONSES	RANK	PERCENT
a) Yes	74	1	98.6
b) No	1	2	1.4
TOTAL	75		100.0

QUESTION 6. Did you live at this residence prior to the installation of the highway noise barrier?

	RESPONSES	RANK	PERCENT
a) Yes	60	1	81.1
b) No	13	2	17.6
c) Not sure	1	3	1.3
TOTAL	74		100.0

QUESTION 7. How often do you use outdoor areas around your residence for work or recreation, assuming fair weather?

	RESPONSES	RANK	PERCENT
a) Nearly every day	38	1	51.0
b) Once or twice a week	24	2	32.0
c) Once or twice a month	7	3	9.2
d) A few times a year	4	4	5.2
e) Almost never	2	5	2.6
TOTAL	75		100.0

QUESTION 8. When are your outdoor activities?

	RESPONSES	RANK	PERCENT
a) Primarily weekdays	28	2	20.3
b) Primarily weekday evenings	27	3	19.7
c) Primarily weekend days	50	1	36.0
d) Primarily weekend evenings	18	4	13.0
e) No particular time	15	5	11.0
TOTAL	138		100.0

QUESTION 9. How would you describe aircraft traffic flying over your residence?

	RESPONSES	RANK	PERCENT
a) Heavy	18	3	24.0
b) Moderate	35	1	47.0
c) Light	22	2	29.0
TOTAL	75		100.0

QUESTION 10. How would you describe, overall, the noise from the aircraft flying over your residence?

	RESPONSES	RANK	PERCENT
a) Very annoying	8	3	11.0
b) Moderatly annoying	34	1	46.0
c) Not annoying	32	2	43.0
TOTAL	74		100.0

QUESTION 11. To what extent do you feel the noise barrier reduces highway traffic noise.

	RESPONSES	RANK	PERCENT
a) Very much	14	2	18.9
b) Moderately	35	1	46.7
c) Very little	14	2	18.9
d) Not at all	11	3	14.2
e) No opinion	1	4	1.3
TOTAL	75		100.0

QUESTION 12. How would you describe traffic noise from the highway, outside of your residence.

	RESPONSES	RANK	PERCENT
a) Very loud	14	3	18.1
b) Loud	35	1	45.5
c) Moderate	25	2	32.5
d) Quiet	3	4	3.9
e) Very quiet	0	5	.0
TOTAL	77		100.0

QUESTION 13. How would you describe traffic noise from the highway, inside your residence with doors and windows closed.

	RESPONSES	RANK	PERCENT
a) Very loud	2	5	2.7
b) Loud	11	3	14.7
c) Moderate	31	1	41.0
d) Quiet	24	2	32.3
e) Very quiet	7	4	9.3
TOTAL	75		100.0

QUESTION 14. For the following, indicate the relative annoyance to you, 1 being the most annoying and 10 being the least annoying.

- a) Neighborhood noises (children, radios, dogs barking, lawnmowers, etc.)
- b) Airplane noise
- c) Traffic noise from the highway
- d) Sirens
- e) Industrial/factory noise
- f) Local traffic noise (non-highway)

	RESPONSES	RANK	PERCENT
a)	331	5	19.8
b)	265	2	15.9
c)	185	1	11.0

	RESPONSES	RANK	PERCENT
d)	274	3	16.4
e)	283	4	16.9
f)	335	6	20.0
TOTAL	1673		100.0

NOTE: Rank 1 is the most annoying. "RESPONSES" is not the number of people answering, but the total of the numbers used to indicate relative annoyance. The lowest total indicates the most annoying noise.

QUESTION 15. How do you feel about the appearance of the noise barrier?

	RESPONSES	RANK	PERCENT
a) Attractive	4	3	5.4
b) Ok	55	1	74.3
c) Unsightly	15	2	20.3
TOTAL	74		100.0

QUESTION 16. What color do you prefer for the noise barrier?

	RESPONSES	RANK	PERCENT
a) Black	2	8	2.2
b) White	10	5	10.9
c) Grey	16	3	17.4
d) Brown	21	1	22.8
e) Green	17	2	18.5

	RESPONSES	RANK	PERCENT
f) Yellow	5	6	5.4
g) Blue	4	7	4.3
h) Red	1	9	1.1
i) Orange	1	9	1.1
j) Other	15	4	16.3
TOTAL	92		100.0

QUESTION 17. Does the noise barrier give you a closed-in feeling?

	RESPONSES	RANK	PERCENT
a) Very much so	10	3	13.5
b) Somewhat	18	2	24.3
c) Not at all	46	1	62.2
TOTAL	74		100.0

QUESTION 18. Do you feel that the noise barrier limits or restricts your view?

	RESPONSES	RANK	PERCENT
a) Very much so	12	3	16.0
b) Somewhat	25	2	33.3
c) Not at all	38	1	50.7
TOTAL	75		100.0

QUESTION 19. How do you feel the noise barrier has affected the value of your property?

	RESPONCES	RANK	PERCENT
a) Decreased it substantially	6	4	10.7
b) Decreased it slightly	11	3	19.6
c) No affect on it	23	1	41.2
d) Increased it slightly	12	2	21.4
e) Increased it substantially	4	5	7.1
TOTAL	56		100.0

QUESTION 20. Had the noise barrier never been built, to what extent do you think you would use your yard for outdoor activities compared to your present use?

	RESPONSES	RANK	PERCENT
a) Much more	2	5	2.8
b) Slightly more	6	3	8.3
c) The same	34	1	47.3
d) Slightly less	5	4	6.9
e) Much less	19	2	26.4
f) No opinion	6	3	8.3
TOTAL	72		100.0

QUESTION 21. When does the highway noise seem loudest?

	RESPONSES	RANK	PERCENT
a) Sunny days	27	3	32.2
b) Rainy days	28	2	33.3
c) No opinion	29	1	34.5
TOTAL	84		100.0

QUESTION 22. What are the times of the day that the noise from the highway is particularly noticeable?

	RESPONSES	RANK	PERCENT
a) Before 8 A.M.	30	2	21.5
b) 8 A.M. - Noon	24	4	17.4
c) Noon - 5 P.M.	26	3	18.7
d) 5 P.M. - 11 P.M.	43	1	30.9
e) After 11 P.M.	16	5	11.5
TOTAL	139		100.0

QUESTION 23. How do you feel that the noise barrier has affected these highway-related conditions compared to the situation where no noise barrier was present?
(see questions 24 to 28)

QUESTION 24. Highway dust and dirt.

	RESPONSES	RANK	PERCENT
a) Worse	6	3	11.1
b) No effect	27	1	50.0
c) Improved	21	2	38.9
TOTAL	54		100.0

QUESTION 25. Headlight glare.

	RESPONSES	RANK	PERCENT
a) Worse	0	3	0.0
b) No effect	30	1	54.5
c) Improved	25	2	45.5
TOTAL	55		100.0

QUESTION 26. Drainage / Flooding.

	RESPONSES	RANK	PERCENT
a) Worse	4	3	7.0
b) No effect	45	1	79.0
c) Improved	8	2	14.0
TOTAL	57		100.0

QUESTION 27. Litter from vehicles.

	RESPONSES	RANK	PERCENT
a) Worse	1	3	1.8
b) No effect	23	2	41.1
c) Improved	32	1	57.1
TOTAL	56		100.0

QUESTION 28. Highway noise.

	RESPONSES	RANK	PERCENT
a) Worse	7	3	12.1
b) No effect	13	2	22.4
c) Improved	38	1	65.5
TOTAL	58		100.0

QUESTION 29. Exhaust fumes.

	RESPONSES	RANK	PERCENT
a) Worse	4	3	7.1
b) No effect	25	2	44.6
c) Improved	27	1	48.3
TOTAL	56		100.0

QUESTION 30. Privacy.

	RESPONSES	RANK	PERCENT
a) Worse	1	3	1.7
b) No effect	10	2	17.2
c) Improved	47	1	81.1
TOTAL	58		100.0

QUESTION 31. Plant growth.

	RESPONSES	RANK	PERCENT
a) Worse	14	2	24.1
b) No effect	31	1	53.5
c) Improved	13	3	22.4
TOTAL	58		100.0

QUESTION 32. Emergency vehicle access to highway.

	RESPONSES	RANK	PERCENT
a) Worse	13	2	23.2
b) No effect	39	1	69.7
c) Improved	4	3	7.1
TOTAL	56		100.0

QUESTION 33. Emergency vehicle access to your residence

	RESPONSES	RANK	PERCENT
a) Worse	6	2	10.5
b) No effect	47	1	82.5
c) Improved	4	3	7.0
TOTAL	57		100.0

QUESTION 34. Out of control vehicles entering your property.

	RESPONSES	RANK	PERCENT
a) Worse	1	3	1.8
b) No effect	30	1	52.6
c) Improved	26	2	45.6
TOTAL	57		100.0

QUESTION 35. Family safety.

	RESPONSES	RANK	PERCENT
a) Worse	2	3	3.4
b) No effect	17	2	29.3
c) Improved	39	1	67.3
TOTAL	58		100.0

QUESTION 36. Family health.

	RESPONSES	RANK	PERCENT
a) Worse	2	3	3.7
b) No effect	30	1	55.6
c) Improved	22	2	40.7
TOTAL	54		100.0

QUESTION 37. Pet safety.

	RESPONSES	RANK	PERCENT
a) Worse	0	3	0.0
b) No effect	24	2	42.9
c) Improved	32	1	57.1
TOTAL	56		100.0

QUESTION 38. Pet health.

	RESPONSES	RANK	PERCENT
a) Worse	0	3	0.0
b) No effect	32	1	60.4
c) Improved	21	2	39.6
TOTAL	53		100.0

QUESTION 39. Have you taken steps to reduce the amount of noise you hear from the highway?

	RESPONSES	RANK	PERCENT
a) Yes	45	1	60.0
b) No	30	2	40.0
TOTAL	75		100.0

If yes, what specific things did you do?

	RESPONSES	RANK	PERCENT
c) Plantings	19	3	13.1
d) Erecting fence or wall	5	8	3.4
e) Installing central air conditioning	13	6	9.0
f) Installing window unit air cond.	24	2	16.5
g) Keeping windows closed	38	1	26.2
h) Installing insulating drapes	14	5	9.6
i) Adding insulation to exterior walls	4	9	2.7
j) Adding insulation to interior walls	3	10	2.0
k) Installing aluminium or vinyl siding	9	7	6.2
l) Replacing standard windows with insulated / thermoplane windows	16	4	11.3
TOTAL	145		100.0

QUESTION 40. Refer to Question #39. To what degree were the steps effective?

	RESPONSES	RANK	PERCENT
a) Very effective	8	2	19.0
b) Moderately effective	29	1	69.0
c) Not effective	5	3	12.0
TOTAL	42		100.0

QUESTION 41. How do you feel that the noise barrier affects the following activities compared to the situation where no noise barrier was present?

QUESTION 42. Conversation indoors.

	RESPONSES	RANK	PERCENT
a) More difficult	2	3	3.6
b) No effect	29	1	51.8
c) Improved	25	2	44.6
TOTAL	56		100.0

QUESTION 43. Conversation outdoors.

	RESPONSES	RANK	PERCENT
a) More difficult	8	3	14.5
b) No effect	17	2	30.9
c) Improved	30	1	54.6
TOTAL	55		100.0

QUESTION 44. Use of television / radio / stereo.

	RESPONSES	RANK	PERCENT
a) More difficult	6	3	10.5
b) No effect	39	1	68.4
c) Improved	12	2	21.1
TOTAL	57		100.0

QUESTION 45. Use of telephone.

	RESPONSES	RANK	PERCENT
a) More difficult	4	3	8.7
b) No effect	30	1	65.2
c) Improved	12	2	26.1
TOTAL	46		100.0

QUESTION 46. Reading.

	RESPONSES	RANK	PERCENT
a) More difficult	4	3	7.1
b) No effect	35	1	62.5
c) Improved	17	2	30.4
TOTAL	56		100.0

QUESTION 47. Outdoor activities.

	RESPONSES	RANK	PERCENT
a) More difficult	8	3	14.5
b) No effect	20	2	36.4
c) Improved	27	1	49.1
TOTAL	55		100.0

QUESTION 48. Relaxing indoors.

	RESPONSES	RANK	PERCENT
a) More difficult	4	3	7.3
b) No effect	27	1	48.1
c) Improved	25	2	44.6
TOTAL	56		100.0

QUESTION 49. Relaxing outdoors.

	RESPONSES	RANK	PERCENT
a) More difficult	9	3	16.7
b) No effect	16	2	29.6
c) Improved	29	1	53.7
TOTAL	54		100.0

QUESTION 50. Sleeping.

	RESPONSES	RANK	PERCENT
a) More difficult	8	3	14.5
b) No effect	18	2	32.8
c) Improved	29	1	52.7
TOTAL	55		100.0

QUESTION 51. Leaving windows open.

	RESPONSES	RANK	PERCENT
a) More difficult	13	3	22.8
b) No effect	16	2	28.1
c) Improved	28	1	49.1
TOTAL	57		100.0

QUESTION 52. Yard maintenance.

	RESPONSES	RANK	PERCENT
a) More difficult	5	3	9.3
b) No effect	37	1	68.5
c) Improved	12	2	22.2
TOTAL	54		100.0

QUESTION 53. Building Maintenance.

	RESPONSES	RANK	PERCENT
a) More difficult	4	3	7.4
b) No effect	38	1	70.4
c) Improved	12	2	22.2
TOTAL	54		100.0

QUESTION 54. In general, how do you feel about a noise barrier?

	RESPONSES	RANK	PERCENT
a) Strongly like	24	2	33.3
b) Like	27	1	37.5
c) No opinion	8	3	11.2
d) Dislike	7	4	9.7
d) Strongly dislike	6	5	8.3
TOTAL	72		100.0

QUESTION 55. Comments: see Appendix IV.



APPENDIX IV

QUESTION 55: COMMENTS

The material is arranged by location, each location being divided into the Highway Group (residences up to 150 feet from the barrier) and the Ambient Group (residences from 150 - 300 feet from the barrier). The questionnaire number identifies the questionnaire, group, and location. For example, 2HL1 is the second questionnaire tabulated from the Highway Group at Location 1; 4AL4 is the fourth questionnaire tabulated from the Ambient Group at Location 4.

Some of the comments are reproduced verbatim. Others are paraphrased versions which have retained the meaning but not the wordiness of the originals. Spelling was corrected where necessary.

QUESTION 55: COMMENTS
LOCATION 1: WOODBRIDGE - GSP

Highway Group: (150')

- 2HL1: Placement of the noise barrier has caused flooding on my property, and in the basement. The system of street drains for the barrier becomes blocked when street cleaners push trash into the drains.
- 3HL1: I would like to see new noise barriers that are taller.
- 5HL1: When the state put up the noise barriers I thought they would leave the trees. However, they did not leave the trees. They were lovely to look at and the noise barrier is not.
- 6HL1: The barrier did not help at all. We realized this right after the barrier was erected.
- 7HL1: Construct the barrier to prevent kids from walking along the top. Kids climb the barrier and can fall down onto yard fencing. Drain cutouts at ground level should be screened to prevent kids from crawling through.
- 8HL1: The barrier provides no improvement in noise reduction. We had no problem with noise until they allowed motorcycles and vans on the parkway. The barrier no matter how big will not prevent noise from these vehicles.

Ambient Group: (300')
Questionnaire Number

- 1AL1: I hate the noise barrier. The noise seems loud and annoying. Although I have taken measures to avoid the noise, it always seems to be there.
- 3AL1: My family members travel the Parkway to a great extent. I know it would probably be impossible, but could the barrier be modified to include a clear part or a window? We would like to see the conditions.
- 5AL1: The barrier at the end of East Louis Place is too short. To improve effectiveness, it should be made taller and of material that will absorb, not reflect noise.
- 6AL1: Something should be done to conceal the barrier during winter months. Evergreen trees would help to conceal the noise barrier.
- 7AL1: The noise barrier provides safety from highway traffic, and cleaner air with less noise.
- 10AL1: Improvements should be made to underbrush landscaping areas around the noise barrier. The color should be improved.

QUESTION 55: COMMENTS
LOCATION 2: MORRISTOWN - I-287

Highway Group: (150')

Questionnaire Number

- 1HL2: In one area of the noise barrier during rain, extensive flooding attracts ducks for a swimmingly good time. The NJDOT planted trees and shrubs but has not maintained them. Unattractive overgrowth of weeds detracts from our property.
- 2HL2: We don't like I-287. Full credit for noise reduction cannot go to the noise barrier. Shrub planting around the barrier has definitely helped reduce noise from I-287 and truck noise from Rt.78 [sic] construction.
- 3HL2: The noise barrier is very effective on the first floor of my house, but upstairs above the barrier truck noise is very loud. Is it possible to increase the barrier height with an angle skewed toward the highway?
- 4HL2: There were thick growths of pine trees and evergreen hedges prior to installation of the noise barrier. This previous vegetation provided more effective noise reduction than the present noise barrier.
- 5HL2: Trucks are a noise problem. Vegetation should be placed in front of the barrier to soften sight and sound. It should be higher to cut second floor house noise. The noise barrier is detriment to selling my house, but I would not have purchased without one.
- 7HL2: The noise barrier has made it possible for us to continue living in the area.
- 8HL2: To improve appearance and soften sound reflection climbing vines should be planted to grow on the noise barriers.
- 9HL2: Barriers should be an integral part of highway planning and built near residences. Noise barriers make a significant difference and should be installed before residents complain about the noise.
- 10HL2: The nearest barrier reduces noise, but the barrier opposite increases noise through echo. Perhaps barriers could be refaced with a material to soften noise. Some trucks produce noise in excess of 130dB and should be stopped.
- 11HL2: Much more noise is present when the windows are open. Noise travels up and over the barrier.

Ambient Group: (300')

Questionnaire Number

- 1AL2: Morristown Memorial Hospital Helipad is near our backyard, and some people find aircraft noise annoying. We understand these flights are not for pleasure.
- 2AL2: A noise barrier would not be necessary in a residential area if the highway department had taken reasonable care laying out the highway.

- 3AL2: After waiting many years for installation of a noise barrier we find it has no effect on noise from I-287.
- 4AL2: I prefer the noise barrier be a earth color or green to blend with foliage. Although it adds safety from unwanted intruders the noise barrier does not help eliminate noise and is a waste of taxpayer money.
- 5AL2: Erect more noise barriers to offset tractor-trailer noise. Force NJDOT to scrutinize vehicle exhaust system measures, since they allow horrendous intoxication of the air we breath.
- 6AL2: The noise barrier helps reducing noise. I prefer keeping them the present colors brown or green.
- 8AL2: Didn't the previous trees and shrubs absorb the same amount of noise as the present noise barriers?
- 9AL2: The noise barriers do help. The street is above highway grade and noise tends to go overhead. North bound trucks and cars with loud exhaust are more noticeable on Sunday nights.
- 10AL2: I don't really notice highway noise I am accustomed to the environment. Sunday nights noise seems loudest, or peak working hours.
- 11AL2: Consideration should be taken for use of compacted refuse dipped in concrete. This type wall construction is being used in Japan.

QUESTION 55: COMMENTS
LOCATION 3: HARRISON - I-280

Highway Group: (150')

Questionnaire Number

- 1HL3: We have grown accustomed to the noise. Living in the city we can't expect country quiet.
- 5HL3: Maintenance workers should repair spaces between noise barrier panels. I can hear noise passing through the spaces.
- 6HL3: I get headaches from the chemical dust and truck fumes.
- 7HL3: Please send future mail P.O. Box 49 Harrison, NJ 07029.
- 9HL3: The noise barrier helps slightly but my walls are cracked from I-280 vibrations; noise has disrupted my peace and tranquility.
- 10HL3: Usually I can still hear the drag racers after 3:30 AM.
- 11HL3: Less neighborhood noise, improves living conditions for everyone.

Ambient Group: (300')

Questionnaire Number

- 3AL3: Noise level testing should be conducted on a periodic basis.

QUESTION 55: COMMENTS
LOCATION 4: HO-HO-KUS - Rt.17

Highway Group: (150')

Questionnaire Number

- 1HL4: They look very bad due to both original step design and shoddy construction methods. The blueprints showing landscaping on the residents' side has not been done. Top soil on the residents' side has not been added and was promised many times. The bulldozers leveled the large amounts of subsoil on the residents' side so that now nothing will grow. The grass planted by the contractor has all died. The safety barrier to prevent vehicles from hitting posts as well as damaging panels that was promised has not been installed. Most cracks have been patched. However a few new cracks and holes have occurred which reduces the effectiveness of the barriers. Every day 100's of people drive on Rt. 17 and observe the barriers which can only be described as an abomination! One can only wonder if it wasn't done on purpose. Many people have written letters including out of state residents stating that the barriers have been erected very poorly and look ugly. Some letters have been published in the Record. These barriers now stand as testimony to the DOT's incompetence and non-professionalism. If this is the type of work the DOT does then that's why our bridges and facilities need large amounts of money for repair! No way! Let's repeal the last 5-cent/gallon tax increase that was for the DOT's "stable funding" but which goes to the general fund. If additional comments are wanted call me.
- 2HL4: We would have moved without a noise barrier in our neighborhood. It is very effective. However, they could be quieter and have better construction. The ivy growing on the barrier should be maintained. Barriers should be required for neighborhoods near highways. I am grateful the NJDOT wants my opinion.
- 3HL4: The noise barrier has enhanced my residence. Noise level has decreased. Privacy and safety from the highway is excellent.
- 4HL4: If you need more information contact me. Lt. R. Berke HO-HO-KUS Police, 201-652-1700.
- 5HL4: We feel the noise barriers have given our home and family noise abatement, privacy and safety from the highway. The barrier is not perfect, but is an improvement.
- 6HL4: We think the barrier is fine. It does not give the noise abatement promised, but does give privacy and safety from the highway. Construction is slipshod and should be covered with vegetation.
- 7HL4: Noise from the barrier bounces off the barrier and is heard more. I was not aware of the noise, but with the barrier I can hear noise one or two blocks away.

8HL4: The barrier has resulted in moderate improvements. However, it is ugly and blocks access to the highway. These limitations are not worth improvements provided by the barrier. Please keep my comments confidential. I do not want to renew past disagreements with neighbors.

Ambient Group: (300')

Questionnaire Number

2AL4: When we purchased our house we were aware of the barriers. Truck traffic is severe. We can't use our yard on a nice day because of the noise. Trucks hit a severe highway bump which shakes our whole house. My walls are cracking. The only answer is to ban or have a curfew for large trucks.

4AL4: Our particular barrier section is fairly straight for about 500'. However, as neighbors we complained of crooked barrier construction. During construction, where was the Field Engineer?

6AL4: We are truly thankful for noise barriers. However, they are assembled like a four year old built them. There is no excuse for this poor construction. Noise barriers do work. Should you desire, I would be happy to consult with you on the subject.

7AL4: Noise barriers installed by the state have extremely poor workmanship. Privately installed barriers within the borough are more attractive and have a far superior construction.

8AL4: Workmanship could have been better. Some areas of construction are straight and others are crooked. We still hear large trucks, but we are not awakened by them as in the past.

9AL4: You should add more plantings around the noise barriers. Evergreens are appropriate.