

An Assessment of the Training Needs of the Local Officials of the Coastal Municipalities of Massachusetts with regard to Coastal Issues

Duane Dale
DFD Associates

for the Massachusetts
Coastal Training Program

September 20, 2002

This study was carried out under contract with the
Massachusetts Coastal Training Program collaborating organizations:

Waquoit Bay National Estuarine Research Reserve
Massachusetts Office of Coastal Zone Management
Woods Hole Oceanographic Institution Sea Grant Program

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Introduction

Three organizations are collaborating to create a Coastal Training Program (CTP) for Massachusetts: Waquoit Bay National Estuarine Research Reserve, Massachusetts Office of Coastal Zone Management, and Woods Hole Oceanographic Institution Sea Grant Program. These collaborators contracted with DFD Associates of Amherst, Massachusetts, to conduct an assessment of the training needs of local officials in Massachusetts' coastal communities with regard to coastal issues.

CTP is a nationwide program created and supported by the National Oceanic and Atmospheric Administration (NOAA). Coastal Training Programs across the country each involve one of the national estuarine research reserves as one of the collaborators.

The purpose of CTP, as stated in the Massachusetts collaborators' Request for Response for the current study, is "to provide in-depth science-based training for managers to make informed decisions affecting coastal resources in the Commonwealth."

The RFR also identifies the intended audience – coastal decision makers – and the broad focus of CTP training:

Coastal decision-makers include municipal officials (both professional and volunteer), state and federal agency staff, non-governmental organizations, businesses, legislators, and academic and research institutions. Training content will be based on the most up-to-date information available and will be designed to develop skills needed to use new technologies and environmental methodologies. Specific training courses might include topics such as groundwater protection, aquaculture, climate change, and land use.

The purpose of the needs assessment – again, as stated in the RFR – is "to evaluate the training, information, and skill requirements of coastal decision makers in local governments." (The RFR states that "additional needs assessments on other sub-groups of coastal decision makers will be conducted at a later date.")

The key questions for the needs assessment are:

- Q: Who are the local government officials from the coastal towns of Massachusetts?
- Q: Which of them are most prone to attend training?
- Q: What topics and what specific content (related to coastal issues) appeal to them?
- Q: What delivery formats appeal to them?
- Q: What are their preferences with regard to timing, location, and other details?
- Q: Are there sub-groups that have distinctive preferences such as...
 - Specific boards, commissions, or roles?
 - Employees vs. volunteers?
 - Those who rarely or never attend training?

In order for CTP to incorporate the findings into its planning, these additional questions are pertinent, and will be addressed in the recommendations section of this report:

Q: What topics are especially promising for CTP?

Q: What formats and logistical details are especially promising for CTP?

Q: How can CTP best assure that it is continuing to choose the optimal topics, formats, and logistical details?

Needs Assessment Methodology

This needs assessment study utilized small group interview and a questionnaire as its primary means of data gathering. Needs assessment activities proceeded in the following sequence:

- Database development and sampling

- Questionnaire development

- Small group interviews, with questionnaire pilot-testing

- Questionnaire revision and administration

- Data analysis and reporting

Information about the methodology will be provided in the course of the presentation below.

The Audience for Local Official Training Regarding Coastal Issues

Key question:

Who are the local government officials from the coastal towns of Massachusetts?

There are 78 coastal cities and towns in Massachusetts. This needs assessment focused on those 78 municipalities, but it should be kept in mind that there are other communities that face coastal issues or whose decisions and actions have coastal impacts – particularly those near but not *on* the coast and those that are along a major river. Municipal officials from such communities constitute a possible broader audience for coastal training.

For the purposes of this questionnaire, four categories of volunteer municipal official were targeted initially: select board members and city councilors, planning board members, health board members, and conservation commission members. A “coastal” category was added to include the various boards and commissions that are unique to coastal communities, such as harbor commissions, shellfish commissions, marina commissions, and waterways committees. An “other” category was added to include miscellaneous other roles with a possible coastal connection. A full list of the specific roles for each category is provided as Appendix A.

For each of these categories, most municipalities have both volunteers (board and commission members) and employees. Both volunteers and employees were included in this study, and their responses are analyzed separately when appropriate.

Not all municipal roles were included. For example, fire and police department personnel were not part of the sample, except when they had a specific other role that would include them, such as shellfish warden or natural resource enforcement officer.

Database Development and Sample Selection

A database of municipal officials was developed, using information from municipal web sites or from listings provided by town or city clerks. The final database consisted of 1,596 volunteers and 662 employees for a total of 2,258 individuals from 74 of the 78 Massachusetts coastal communities..

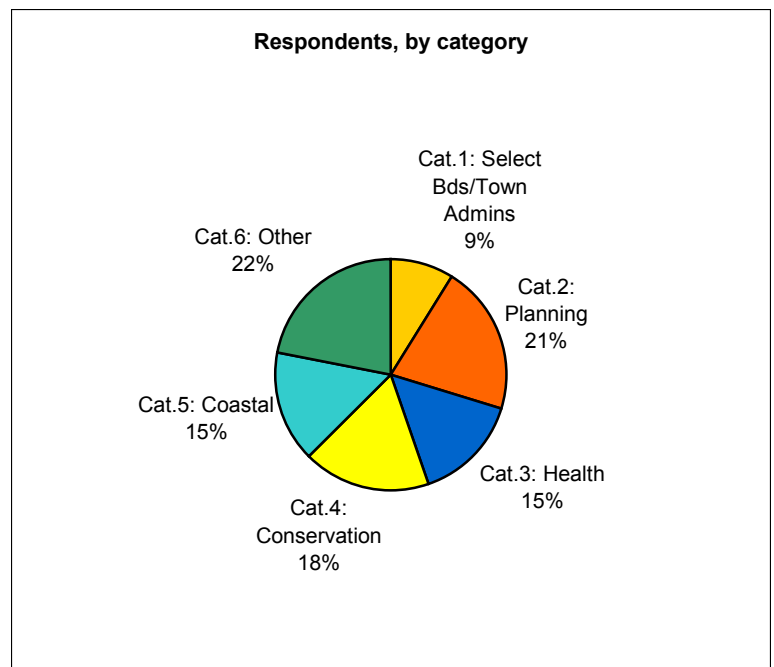
For the first phase of this study, 285 names were selected from the database – a cross-section of the municipalities and of the various roles represented in the database. These individuals were invited to participate in one of ten small-group interviews about coastal issues and training. A total of 54 did so – a response rate of 19.6% which was the result of intensive follow-up phone calls. An additional 14 members of two pre-existing networking groups participated in similar discussions.

For the second phase of the study, a stratified random sample of 1,035 names was selected from the database. The stratification was according to the categories listed above; the sampling rate varied according to the number of people in each category and an estimate of the rate of response from that category (based primarily on the rate of response to the small group discussion invitations).

These 1,035 people and also the 54 small group discussion participants were sent a cover letter and a four-page questionnaire by U.S. mail. The instructions gave a deadline of about three weeks after the expected arrival date. As an incentive for timely response, the cover letter offered three “thank you” gifts with values in the \$50 range, to be allocated by drawing from those whose questionnaires were received by the deadline. (Anonymity of the questionnaire responses was assured by separating name and address information from the questionnaires.)

A total of 169 completed questionnaires were returned, for an overall response rate of 15.5%. As expected, response rates varied widely for different sub-groupings of the sample. The response rate was higher for employees than volunteers; higher for conservation commissioners and planning board members than for other volunteers; highest of all for health, conservation, and planning department employees; higher for Cape & Islands and South Shore than for other regions. (Health and planning staff response rates were boosted by higher-than-average response to follow-up solicitation of responses.) A chart of these breakout response rates is available as Appendix H.

The distribution of respondents among the six categories of municipal roles is shown in the pie chart titled “Respondents, by category”; percentages in that chart are percentages of the 169 respondents. “Category 1” (select board members, city councilors, mayors, and town

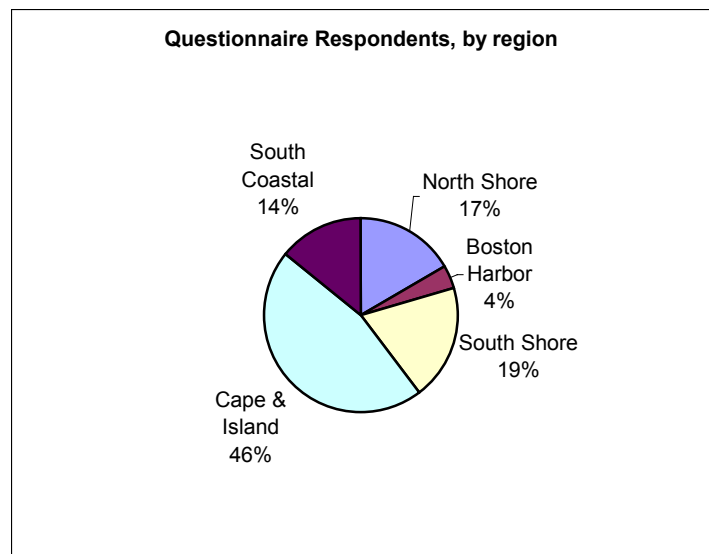


administrators) had the lowest response rate, 9%. Respondents are fairly well distributed among the other five categories, with 15% to 22% of all respondents falling into each category. The respondents include 87 volunteers, 78 employees, and 4 who indicated that they have roles as both volunteers and employees.

Three open-ended questions from the questionnaire provide important insights about how the respondents understand their roles, especially with respect to coastal issues. Those responses are a potential source of insights about how to market CTP offerings and how to focus them in order to be sure to address the specific needs and challenges of municipal officials. The three questions are:

6. In your position, what responsibilities do you have with respect to the coastal environment?
7. What is the greatest challenge you face in your local government role, with respect to coastal issues?
8. Can you imagine a training activity, or information, that would help you address the challenge you identified in 7? ☐ yes ☐ no If yes, what would it be?

The responses to these questions are presented in Appendix E, grouped by role category.



The respondents are unevenly distributed among the five coastal regions of the state. This was due to several factors: differing numbers of municipalities per region, differing numbers of volunteer and paid municipal officials in the lists provided by the town clerks, and differing response rates to the questionnaire. The make-up of the 169 respondents by region is shown in the pie chart titled “Questionnaire Respondents, by region.” Regional differences in responses will be addressed in the reporting of findings, below.

With respect to geography, it is noteworthy that the coastal *cities* of Massachusetts are under-represented in the sample. They *were* represented in the small group sessions, and the particular nature and complexity of their issues was apparent at those sessions.

Non-Respondents

As with virtually all questionnaire studies, there is no way to achieve 100% response from the selected sample. It is important to gauge whether the respondents are typical of the overall sample and of the larger population from which the sample was drawn. For this study, follow-up calls were made to over 100 individuals to whom a questionnaire had been addressed but from whom no response had been received. A few of those individuals agreed to complete the questionnaire as a telephone interview. A larger number agreed to respond to a second copy, which was mailed or faxed to them. A total of 21 questionnaires (out of the 169 responses) were either completed as phone interviews or received as a result of the phone calls.

During these follow-up phone calls, the most common reason stated for not completing the survey was that the individual did not recall seeing it.

Those who completed the questionnaire by telephone interview or responded to a second, mailed or faxed copy, had these attributes:

- * They reported, on average, *more* past involvement in training on coastal issues than the average response from all other participants. (This difference is not statistically significant.)

- * Their ratings of content items were not significantly different from the overall sample's except for these items:

- J. Open Space protection

- (3.76 for timely responses, 3.11 for late/solicited responses, $p=.07$)

- T. Ecological landscaping

- (3.26 for timely responses, 2.56 for late/solicited responses, $p<.02$)

- AA. Explaining coastal issues, laws, and regulations to an individual citizen

- (3.57 for timely responses, 2.95 for late/solicited responses, $p<.07$)

- JJ. Using computer mapping (GIS)

- (3.59 for timely responses, 2.85 for late/solicited responses, $p<.03$)

The late and solicited responses had an average rating across all content items that was 0.18 lower than the corresponding value for the timely responses, and 0.30 lower for the process items. Neither of these differences is significant, even at an exploratory criterion of $p<.20$ ($p=.40$ and $.21$, respectively).

Because of the lack of substantial statistical differences between the late, solicited responses and all other responses, these 21 responses were included with all other responses for the remainder of the analysis.

Findings of the Study

Participation in Training

Key Question:

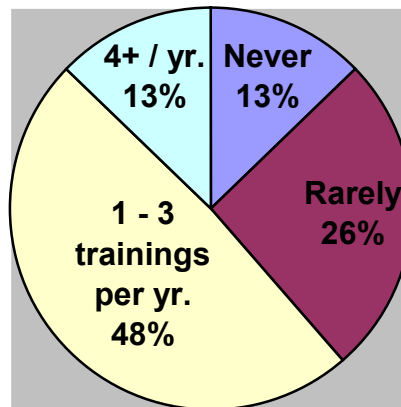
Which groups of respondents are most prone to attend training?

In order to determine which groups are historically most likely to attend training, and to determine whether those who generally do not attend training have particular perspectives which should be heeded in order to make training more attractive for them, the following question was included in the questionnaire, immediately after a question that asked for ratings of 24 possible coastal training topics:

11. How often have you been to training or professional development activities that address one or more of the topics above?

The pie chart below labeled “Participation in Training” shows the distribution of responses among the four options provided. The 169 respondents represent a range in terms of past experience with training activities: 38% indicated that they attend training “never” or “rarely.” In other words, the questionnaire succeeded at tapping the opinions of those who do attend training regularly and those who do not.

Training Participation - All Respondents



Responses varied by role and by region:

* Conservation commissioners and staff are the category that reports the highest average level of participation in training, followed by health boards and staff, then coast-related committee members and staff. (Analysis of variance (“ANOVA”) indicates statistically significant differences.)

* Staff members (employees) report a higher average level of participation in training than do volunteers. (A t-test indicates that this is a statistically significant difference; $p < .01$)

* Respondents from the Cape & Islands region report a higher average level of participations than do respondents from the other regions, with the North Shore second. ANOVA indicates that these findings are not statistically significant.

Training Content

Key Question:

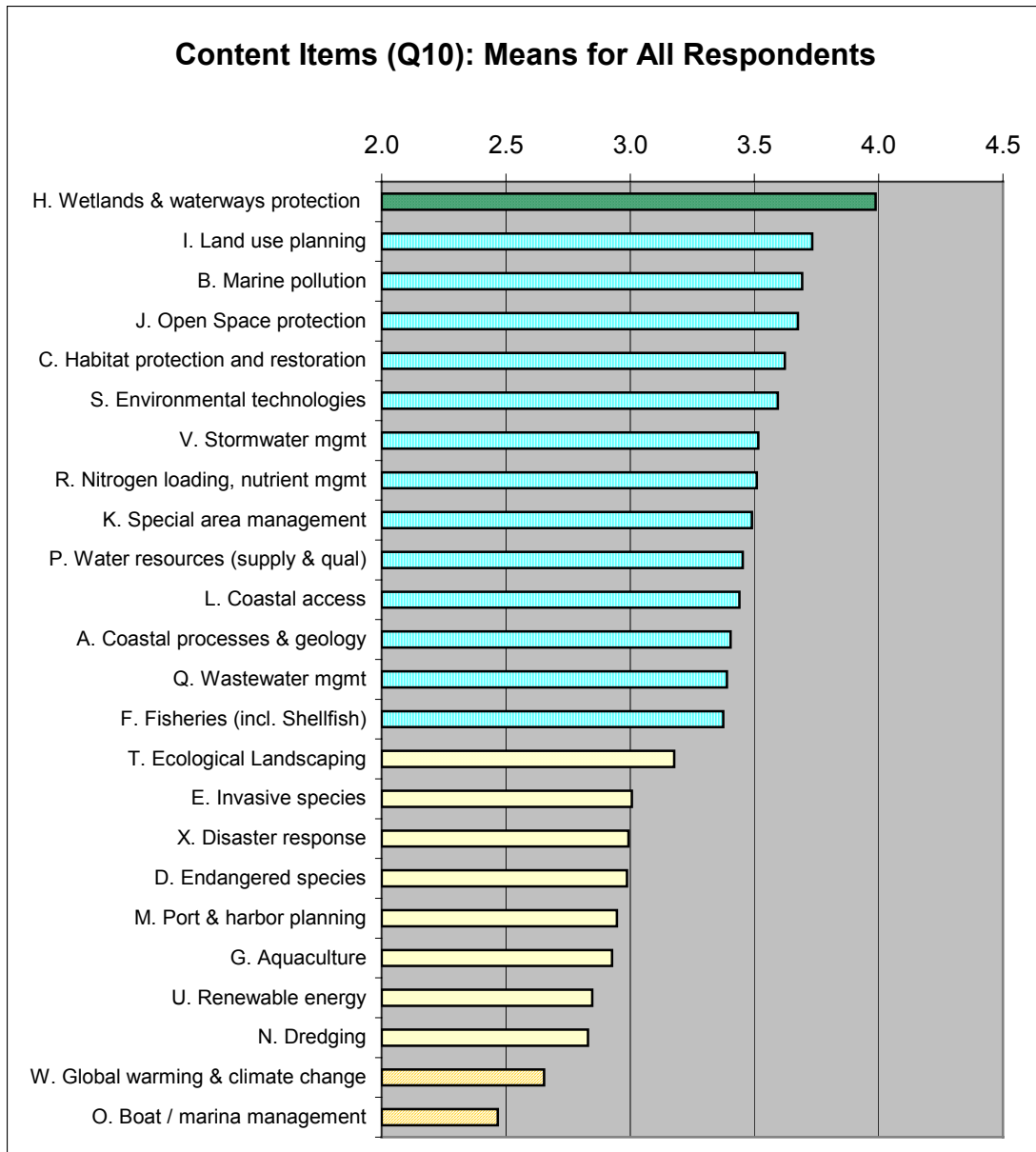
What topics and what specific content (related to coastal issues) appeal to them?

Content-oriented items.

In order to assess interest in various possible training topics, the questionnaire included a list of 24 content topics of a substantive or technical nature, with instructions to rate each item on a five-point scale:

10. The table below contains a list of possible training topics. For each topic: put a number from 1 to 5 to indicate your current level of interest in attending training or obtaining other types of assistance on this topic. (If you have already attended training on a topic, rate the item in terms of your interest in *additional* training.)

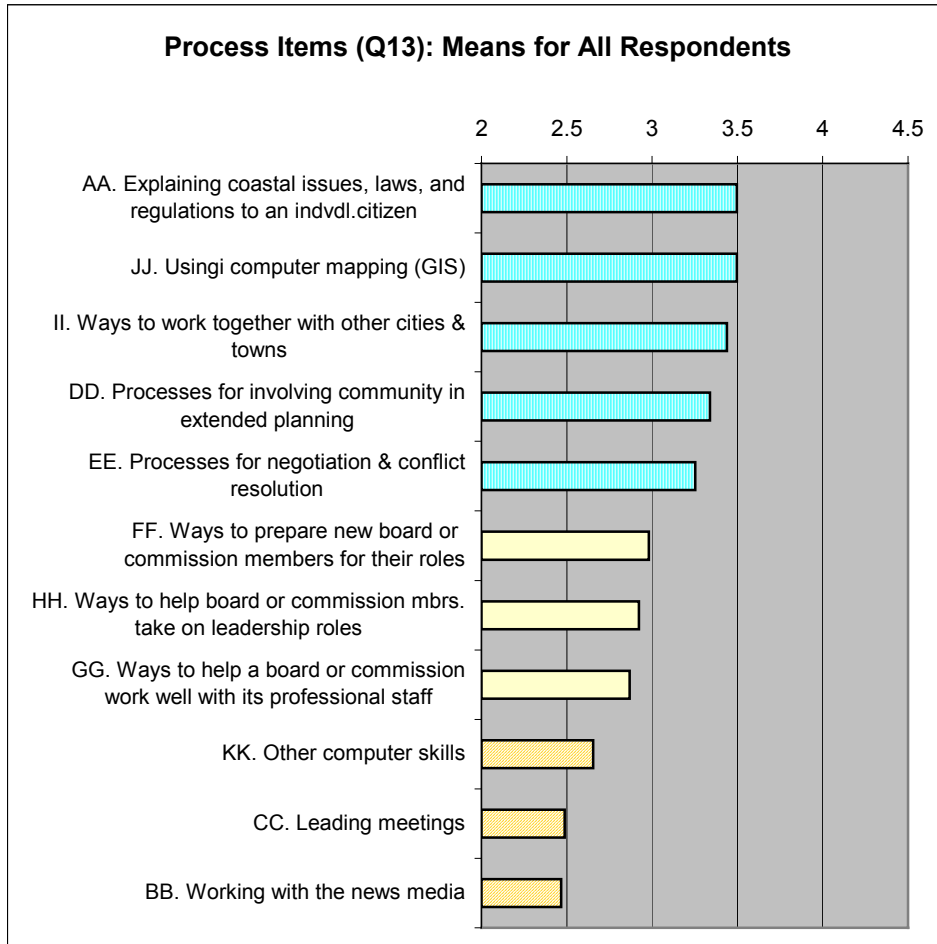
The directions clarified that 1 is low and 5 is high. The table that follows shows the rank-ordered average ratings for this group of items.



The colors of the bars (or shades of gray in the black-and-white printout) are explained below as four “tiers” of interest.

Process-Oriented Items

A similar list of 11 items, with similar instructions, focused on processes and skills.



The colors of the bars (or shades of gray in the black-and-white printout) are explained on the next page as “tiers” of interest. The highest tier (shown as green or dark gray) is purposely omitted from this chart.

A comparison of the confidence intervals for these average ratings confirms that there are statistically significant distinctions in the ratings – not between every adjacent pair of items, but between groups of items. Appendices C and D present the same ratings shown in the bar graphs above, but also show the confidence interval for each average rating, which can be understood as the range within which the full populations’ average rating for each topic is likely to fall. Both of those graphs show natural drop-off or stair-step points which suggest clustering the items into tiers – four tiers for the 24 content items and three tiers for the 11 process items. Rankings within each tier are not statistically distinct, but rankings between tiers are statistically strong. The topics are listed by tier in the table below.

	Content Topics (Q10)	Process Topics (Q13)
Tier 1 (Avg > 3.75)	Wetland & waterway protection	–
Tier 2 (3.25 – 3.75)	Land use planning Marine pollution Open space protection Habitat protection & restoration Environmental technologies Stormwater management Nitrogen loading, nutrient management Special area management Water resources (supply & quality) Coastal access Coastal process & geology Wastewater management Fisheries (incl. shellfish)	Explaining coastal issues, laws & regs to an individual citizen Using computer mapping (GIS) Ways to work together with other cities and towns Processes for involving the community in extended planning Processes for negotiation & conflict resolution
Tier 3 (2.75 – 3.25)	Ecological landscaping Invasive species Disaster response Endangered species Port & harbor planning Aquaculture Renewable energy Dredging	Ways to prepare new board or commission members for their roles Ways to help board or commission members take on leadership roles Ways to help a board or commission work well with its professional staff
Tier 4 (Avg. < 2.75)	Global warming & climate change Boat / marina management	Other computer skills [than GIS] Leading meetings Working with the news media

In the bar charts on the previous two pages, colors (or shades of gray) are used to distinguish the tiers, as follows:

- Tier 1: Green (or dark gray) with dots (appears only in the “content” chart).
- Tier 2: Bright turquoise (or medium gray) with vertical stripes.
- Tier 3: Pale yellow (or very light gray) without dots or stripes.
- Tier 4: Gold (or the lower medium gray) with diagonal stripes.

“Robustness” of the ratings

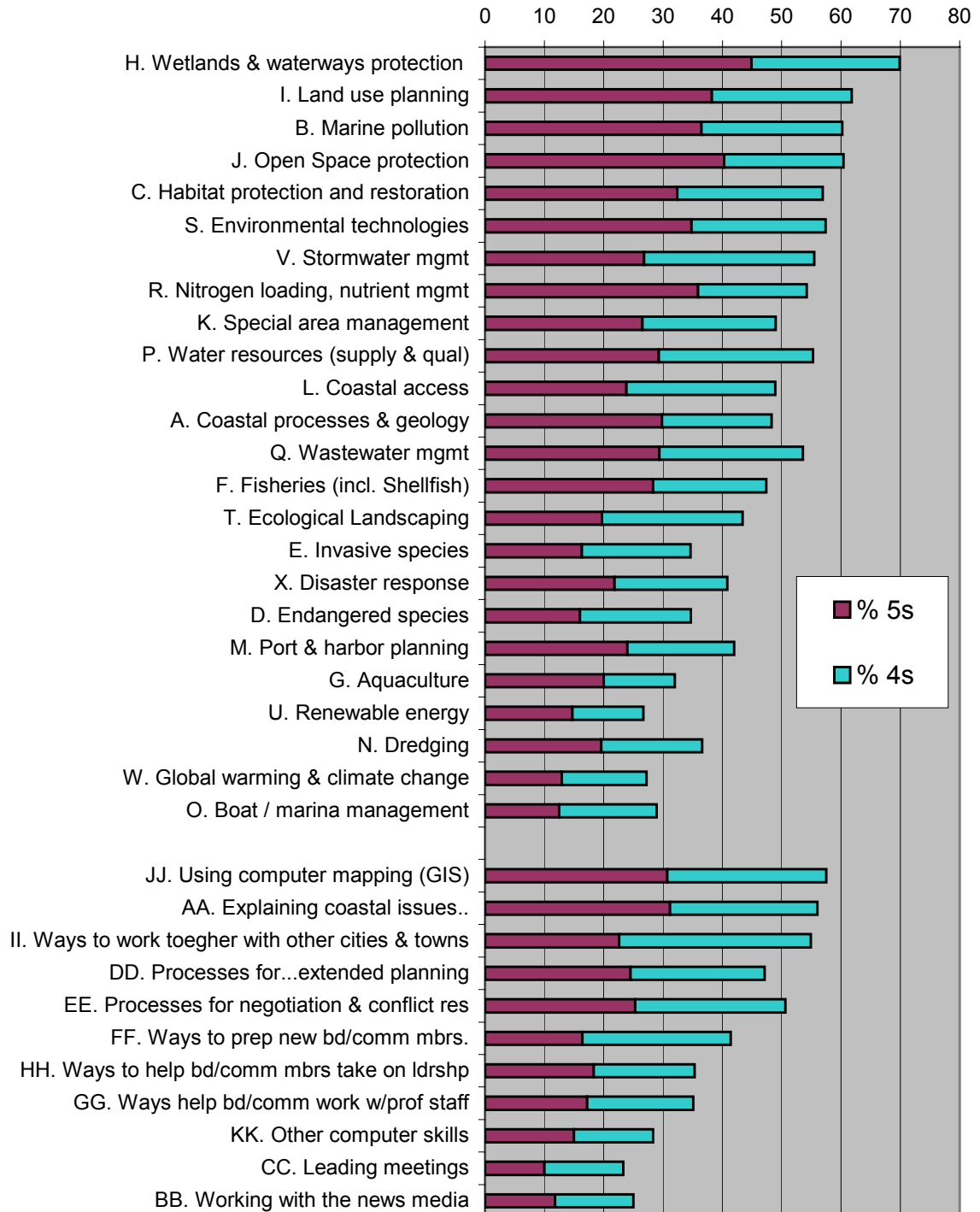
These rankings of possible training topics are an important part of the findings of this study, so it is important to assess their stability or “robustness.” The confidence-interval analysis described above provides a first-level confirmation of the validity of the rankings. Two additional methods provide further confirmation. The first of these is to compute a weighted average for each topic that compensates for the uneven distribution of respondents among the various municipal roles. For each topic, separate averages were calculated for each of six categories of volunteer and six categories of employee, then those twelve averages were averaged together.

The resulting chart of Averages vs. Weighted Averages for the “Content” topics are found in Appendix I. The result is only minor changes in ranking – with the exception that “Fisheries (including shellfish)” ranked 14th by raw averages but 3rd by weighted averages – and no changes in tier. No comparable weighted averages were calculated for the “process” items because analysis of variance showed no significant differences across categories.

A second test of the robustness of the results is found by ranking the items according to the number of “4” and “5” ratings they received. These are the two scale points that are above the midpoint of “3”, so they serve as an indication of enthusiasm for the topic. The percent of “4” and “5” ratings is not independent of the averages, but it could show a good deal of variation in the rankings it produces. In fact, only a handful of items differ by more than one or two slots in the rankings, and the tiers generally hold.

This chart serves an additional purpose: it presents a clearer picture than do the average ratings of the strength of positive feeling about a topic. It may be the best available gauge as to how easy or difficult it will be to recruit participants for that topic.

**Percent of "5" and "4" Ratings:
Content and Process Items (Q10 and Q13)**



Further Detail Regarding the Training Topics

Follow-on questions to the rating of content and process items invited respondents to identify up to three content topics and two process topics for further elaboration. Sub-questions inquired about sources of past training and the nature of future training desired. The compiled responses to these follow-on questions contain many specific ideas for training. They are available as Appendices C and D.

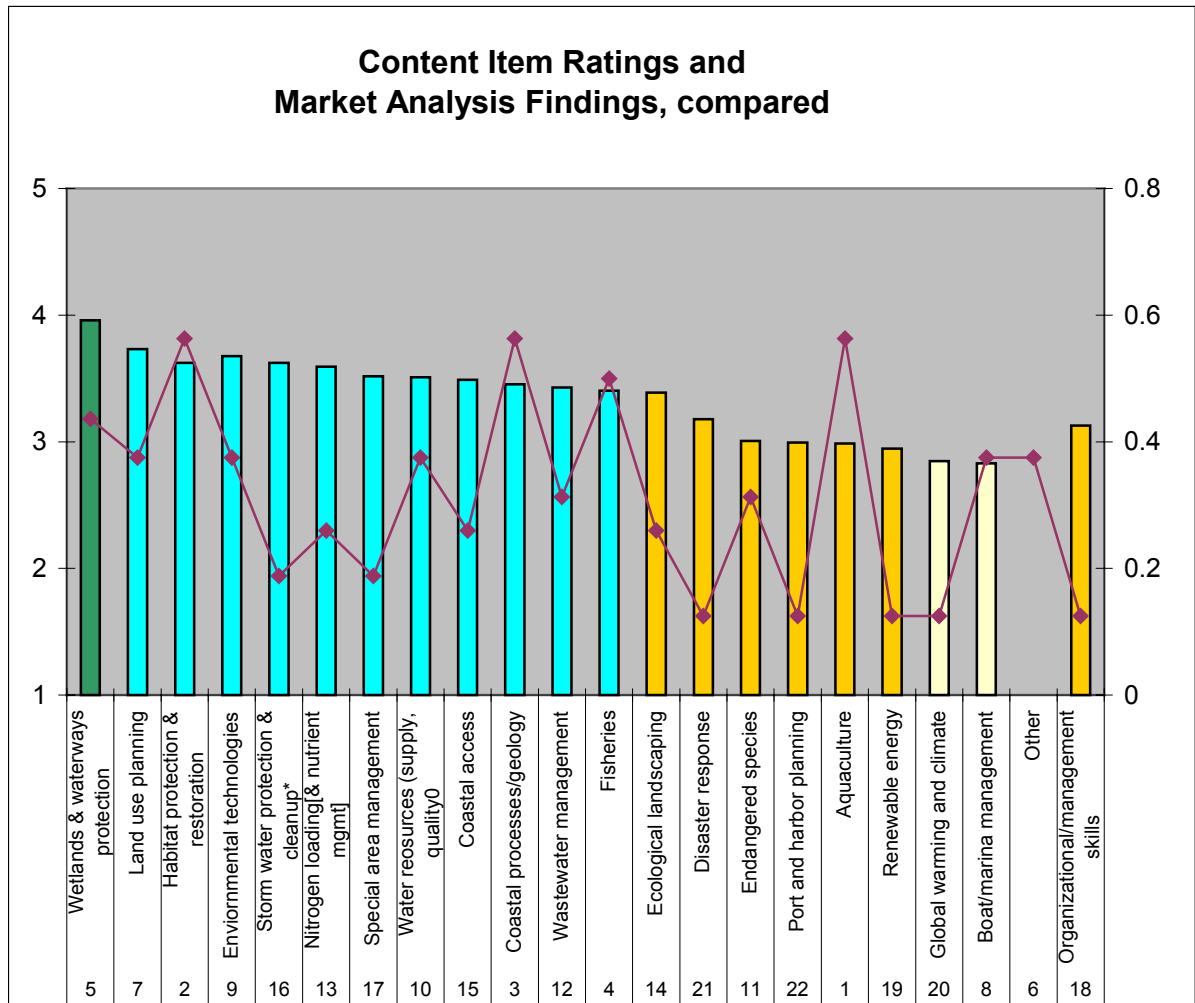
Comparison with Market Analysis Study's Findings

A prior study was carried out for the Massachusetts Coastal Training Program partner organizations by the University of Massachusetts Donahue Institute to analyze existing offerings in the area of coastal training. A list of 21 training topics was used as part of the marketing study. Organizations that provide training related to coastal issues were asked to indicate whether they provide training on each topic. The market analysis final report (page 10) presents the findings.

For consistency between the two studies, 20 of the market analysis topics were incorporated into the present needs assessment study's list of "content" topics. The findings of the two studies are compared in the table titled "Content Item Ratings and Market Analysis Findings, Compared." The item labels are below the X-axis, and below those labels are the rankings of each item in the market analysis. These four items from the current study that do not have counterparts in the market analysis are omitted below: marine pollution, open space protection, invasive species, and dredging. The present study's nearest counterpart to the market analysis item, "organizational management" is the average score for the 11 "process" topics from Question 13.

The vertical bars of the table represent the average for all respondents in the present study, in relation to the scale at the left. They present the same data as do the horizontal bars in the chart above titled "Content Items (Q10): Means for All Respondents." The bars are colored here as they are in the earlier chart, to distinguish the four tiers of average scores.

The diamond-shaped marks (connected by a line) represent values from page 10 of the market analysis final report; they are scaled against the numbers along the right-hand vertical axis, and represent the proportion of all the organizations that responded to the market analysis study which offer training related to the topic in question.



These two measures, taken together, provide a crude initial indication of possible gaps in training offerings – a way to identify topics that are a relatively high priority need or interest that may currently be underserved. The precaution that should be kept in mind is that there may be cases where only one training organization currently addresses a particular training need but serves that need very well. This can only be determined by means of a case-by-case examination of the training available for each topic. The market analysis and Appendices C and D of this study provide further information about the sources of training for particular topics.

This comparison of market analysis results and this study's topic ratings suggests that the following topics *may* have gaps between interest and the “supply” of training:

Storm water protection and mgmt.
Special area management
Nitrogen loading and nutrient mgmt.
Coastal access
Disaster Response

Port and harbor planning
Renewable energy
Global warming and climate change
Organizational management

Top-Rated Topics for Various Categories of Respondents

The upper half of the “Tier” table, already presented above, shows the top-priority topics for all respondents.

	“Content” Topics	“Process” Topics
Tier 1 (Avg > 3.75)	Wetland & waterway protection	–
Tier 2 (3.25 – 3.75)	Land use planning Marine pollution Open space protection Habitat protection & restoration Environmental technologies Stormwater management Nitrogen loading, nutrient management Special area management Water resources (supply & quality) Coastal access Coastal process & geology Wastewater management Fisheries (incl. shellfish)	Explaining coastal issues, laws & regs to an individual citizen Using computer mapping (GIS) Ways to work together with other cities and towns Processes for involving the community in extended planning Processes for negotiation & conflict resolution

The top-priority topics for various categories and groupings and respondents are shown in the lists which follow.

Select Boards, City Councils, Mayors, Town Administrators:
Sample too small to identify top-rated items with sufficient confidence

Planning Boards: <ul style="list-style-type: none"> • Land Use planning (I) • Wetland and waterway protection (H) • Open Space Protection (J) 	Planning Directors and staff <ul style="list-style-type: none"> • Land Use Planning (I) • Coastal access (L) • Stormwater management (V) • Open Space Protection (J) • Wetland and waterway protection (H)
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Health Boards and Staff (too few volunteer board members to report them separately)*Top tier:*

- Wastewater mgmt (Q)
- Environmental technologies (S)
- Nitrogen loading/nutrient management (R)

Second tier:

- Disaster response (X)
- Marine pollution (B)
- Water resources supply & quality (P)

Conservation Commission members:*Top tier:*

- Habitat protection & restoration (C)
- Wetlands and waterways protection (H)

Second tier:

- Special area management (K)*
- Marine pollution (B)
- Coastal processes and geology (A)
- Environmental technologies (S)
- Invasive species (E)
- Open space protection (J)
- Endangered species (D).

* Indicates item not on corresponding staff's top-priority list.

Conservation Staff:*Top tier:*

- Habitat protection and restoration (C)
- Wetlands and waterways protection (H)
- Coastal processes and geology (A)
- Ecological landscaping (T)

Second tier:

- Land use planning (I)**
- Marine pollution (B)
- Invasive species (E)
- Endangered species (D)
- Open space protection (J)
- Stormwater management (V)**
- Coastal access (L)**
- Nitrogen loading, nutrient mgmt (R)**

** Indicates items not on the corresponding volunteer (commission) top-priority list

Coastal Board and Commission Members*First Tier:*

- Habitat protection and restoration (C)
- Wetland and waterways protection (H)

Second Tier:

- Coastal access (L)
- Open Space protection (J)*
- Marine pollution (B)
- Nitrogen loading, nutrient mgmt. (R)

Third Tier:

- Dredging (N)
- Fisheries, including shellfish (F)
- Coastal processes and geology (A)*

* Indicates item not on corresponding staff's top-priority list.

Coastal Employees*First Tier:*

- Marine pollution (B)
- Fisheries, including shellfish (F)

Second Tier:

- Habitat protection and restoration (C)
- Wetlands & waterways protection (H)
- Stormwater management (V)**

Third Tier:

- Port and harbor planning (M)**
- Dredging (N)
- Nitrogen loading, nutrient mgmt (R)
- Coastal access (L)
- Disaster response (X)**

** Indicates items not on the corresponding volunteer (commission) top-priority list

Formats

Key Question:

What delivery formats appeal to the respondents?

The questionnaire solicited preferences regarding formats by means of the following question:

15. Different people learn best in different ways. For the top-priority topics that you've named in the previous questions, which of these methods would be most useful to you? (Check as many as you like.)

Twenty-seven choices were listed. On average, respondents checked 8.23 items each. The percent of respondents who check each item is shown in the table titled "Format Preferences." In that graph, they are presented in four groups: in-person formats, reading matter formats, electronic and miscellaneous formats, and technical assistance. Within each of those four groups, the items are sorted according to the percentage of respondents who checked it.

Workshops and reading matter are the most popular formats. The items immediately below workshops suggest what types of workshop activities the respondents would prefer (not lecture or simulations). Computer-based formats were of interest to one-third of the respondents:

- Information by internet or web – 28%

- Web courses – 17%

- Either or both of these choices – 33%

Three different formats of technical assistance were proposed, and 40% of the respondents checked at least one of them. There was no preferred method for accessing technical assistance; each of the three choices was checked by 24% of the respondents:

- Technical assistance by e-mail or web

- Technical assistance in person

- Technical assistance by phone.

There are differences in format preferences between volunteers and employees. Differences with t-test $p < .05$ are reported here.

Employees are significantly more favorably disposed toward the following formats than are volunteers:

- "Hands On" training (ex.: computer software training) (51% vs. 31%)

- Simulations (24% vs 9%)

- Fact Sheets (45% vs.28%)

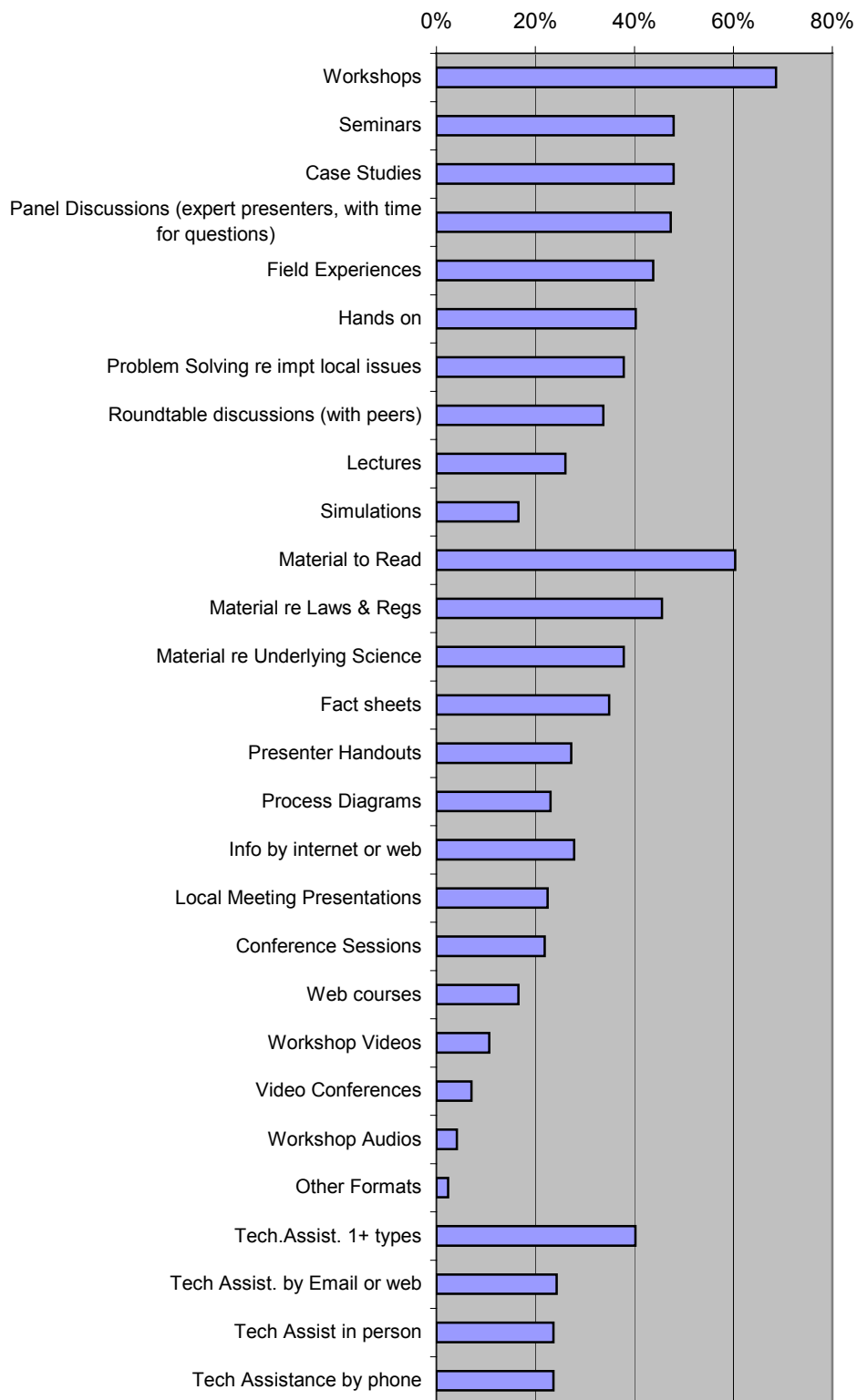
- Technical Assistance by phone (32% vs. 17%)

Volunteers are significantly more favorably disposed toward this format:

- Local meeting presentations (29% vs. 15%)

It may be that employees are more eager than volunteers to interact with peers from other communities.

Format Preferences



Timing and Location

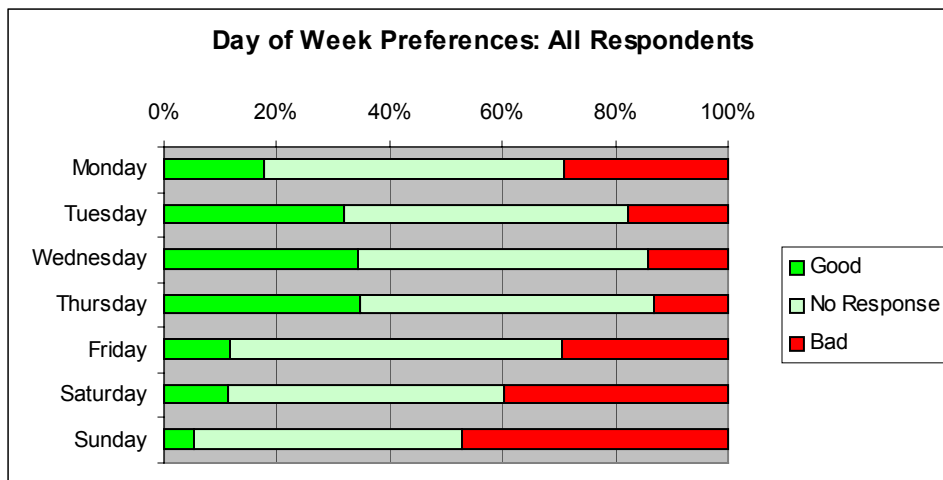
Key Question:

What are their preferences with regard to timing, location, and other details?

Days of the Week

The questionnaire asked respondents to circle, from a list of days of the week, months of the year, and four possible times of day, any that are especially good or bad.

With respect to days of the week, Tuesday, Wednesday, and Thursday are the respondents' preferred days for training. This is true whether one judges by a high proportion of "good" response or a low proportion of "bad" responses.

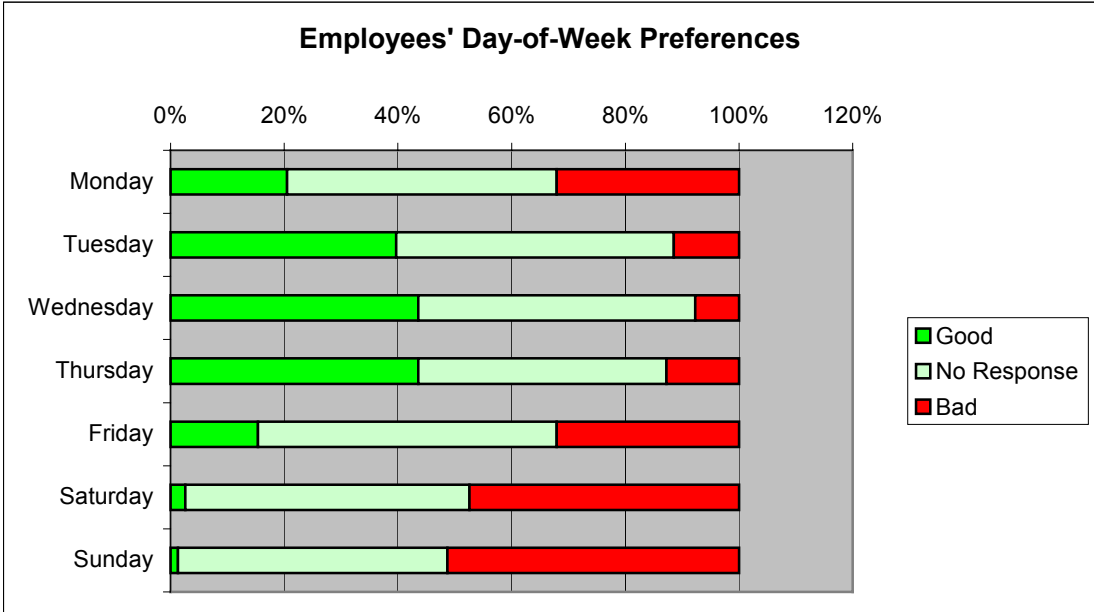
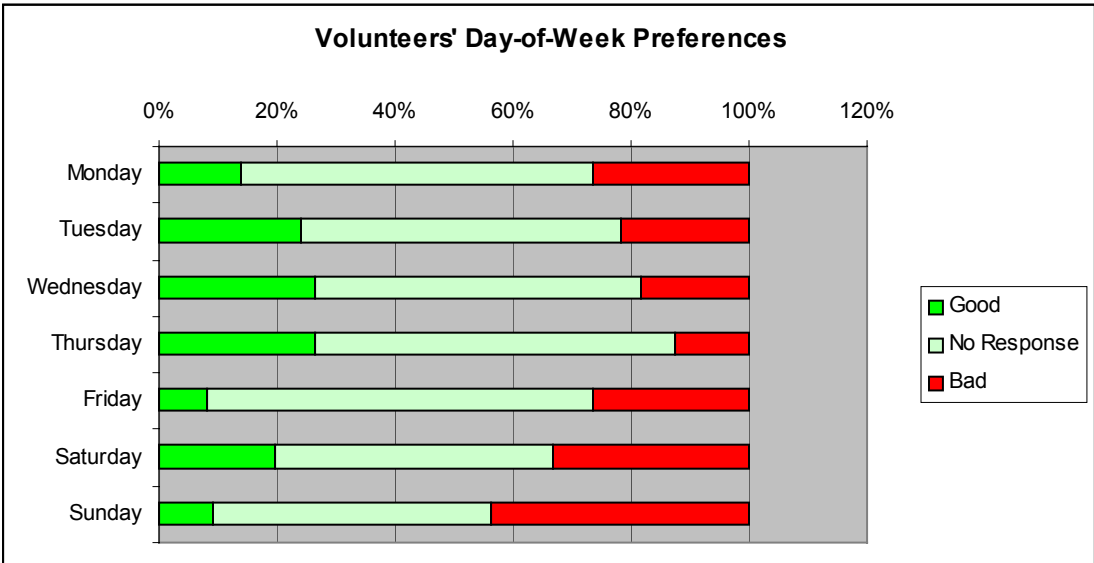


There are several significant differences between volunteers and municipal employees regarding day-of-week preferences:

- Tuesday, Wednesday, and Thursday are significantly better for municipal employees than for volunteers. (Ranking among these three is not statistically significant.)
- Saturday and Sunday are significantly better for volunteers than for municipal employees.

However, despite these differences, Tuesday, Wednesday, and Thursday are the best days for both volunteers and employees. (Wednesday may be marginally better for the employees in the sample, using the standard of minimal "bad" responses.) Saturday is the fourth choice for the volunteers who responded; Monday is the fourth choice for employees.

It is important to bear in mind that no day of the week (or month, or time of day) will be acceptable for the entire intended audience. Training opportunities at various times are needed in order to avoid consistently excluding segments of the possible audience.



Months

Preferences by month can be divided into three tiers, based on analysis of statistical confidence levels of the respondents' answers regarding good and bad months:

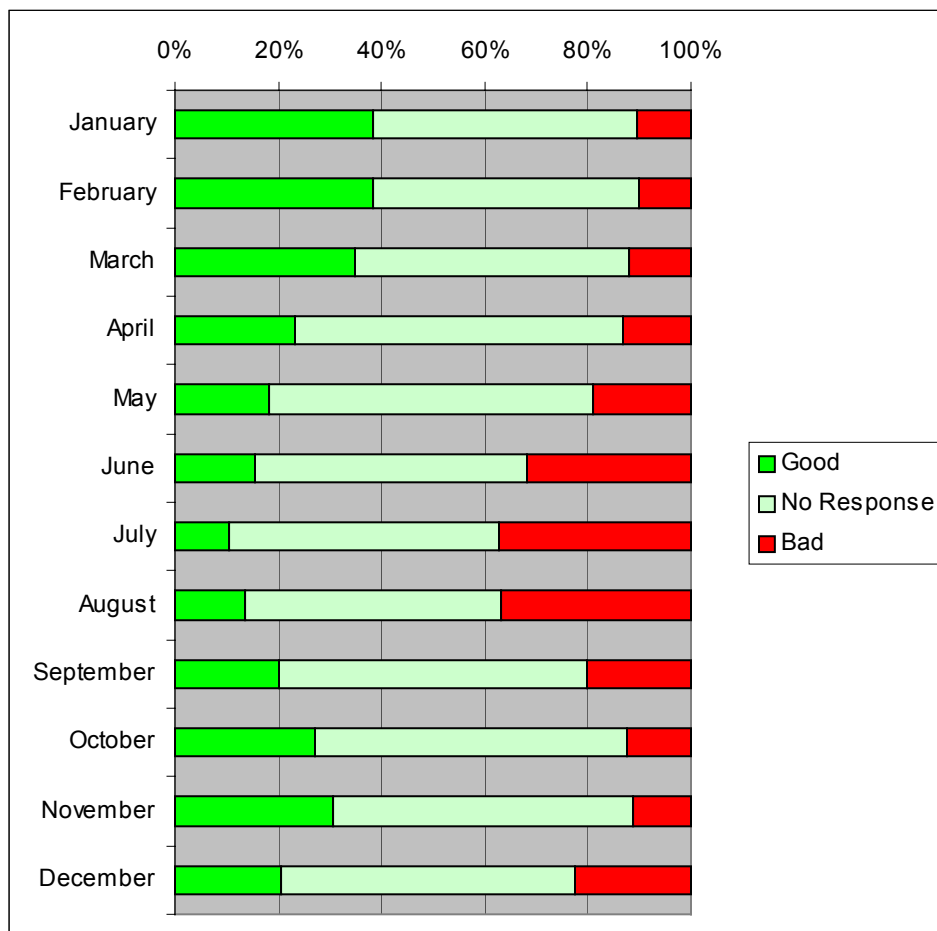
Top tier: February, January, March

Middle tier: November, October, April, December, September, May

Bottom tier: June, August, July

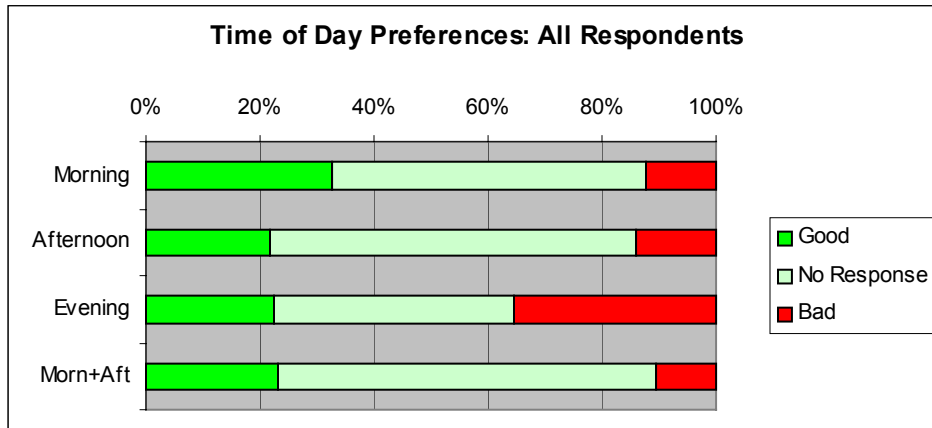
Within each tier, the months are listed above from best to worst, but these within-tier distinctions are not statistically significant. Between tiers, the differences are relatively strong. (although not all of them are statistically distinct at the 80% confidence level).

Volunteers and employees give very similar responses to these items. The strongest difference is that about 8% more of the volunteers than of the employees consider January and February bad months from training, but even those differences are not significant at the .05 level (t-test: $p = .07$ for January, $.11$ for February).



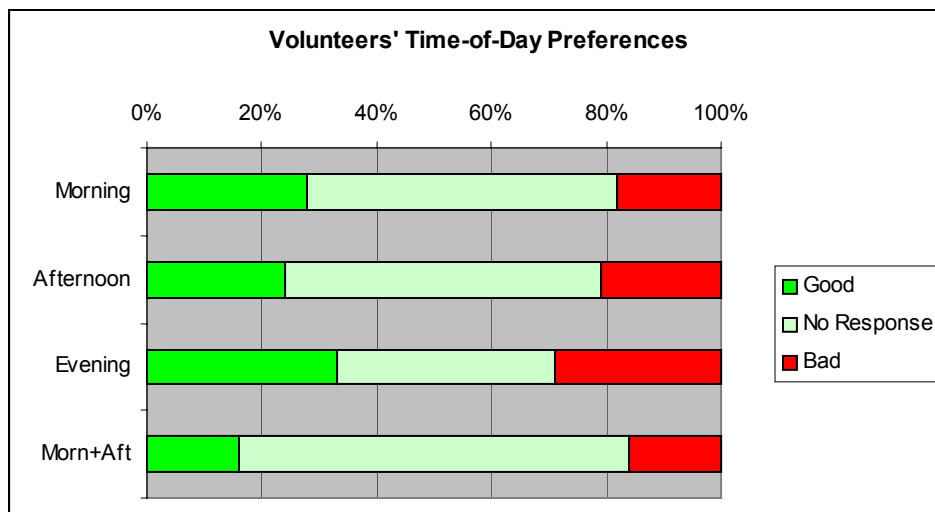
Time of Day Preferences

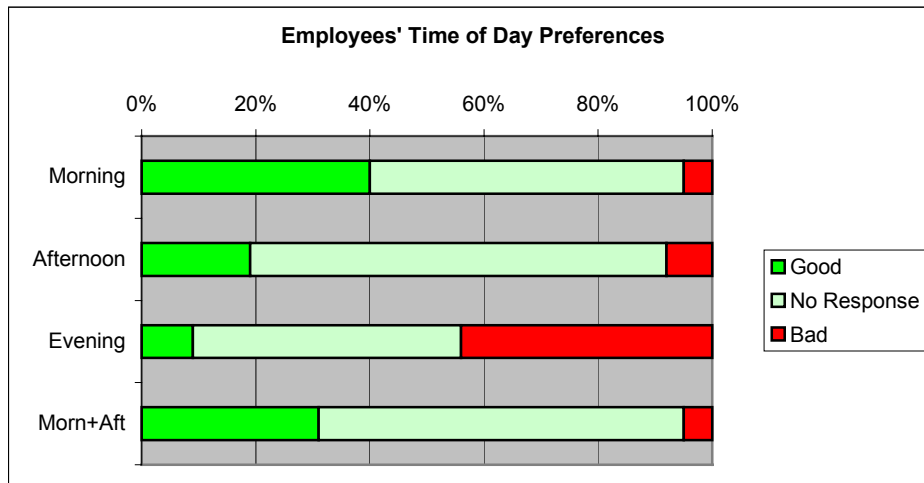
For all respondents, morning is most often identified as a good time of day (by 33% of all respondents) and evening is most often identified as a bad time of day (by 36% of all respondents).



Not surprisingly, volunteers have different time-of-day preferences than employees. In particular, more of the volunteers (33%) than of the employees (9%) consider evenings a good time for training; fewer of the volunteers (16%) than of the employees (31%) consider an all day (morning plus afternoon) time block to be good. Both of those differences are statistically significant (t-test: $p < .001$ and $p < .03$, respectively).

There is disagreement among the volunteers with regard to evenings: although evening is most frequently named by volunteers as a good time for training (33%), it is also most frequently named by volunteers as a bad time (29%). This may be due in part to the possibility that retired volunteers may prefer daytimes whereas volunteers with daytime jobs may have to use vacation days to attend daytime meetings.





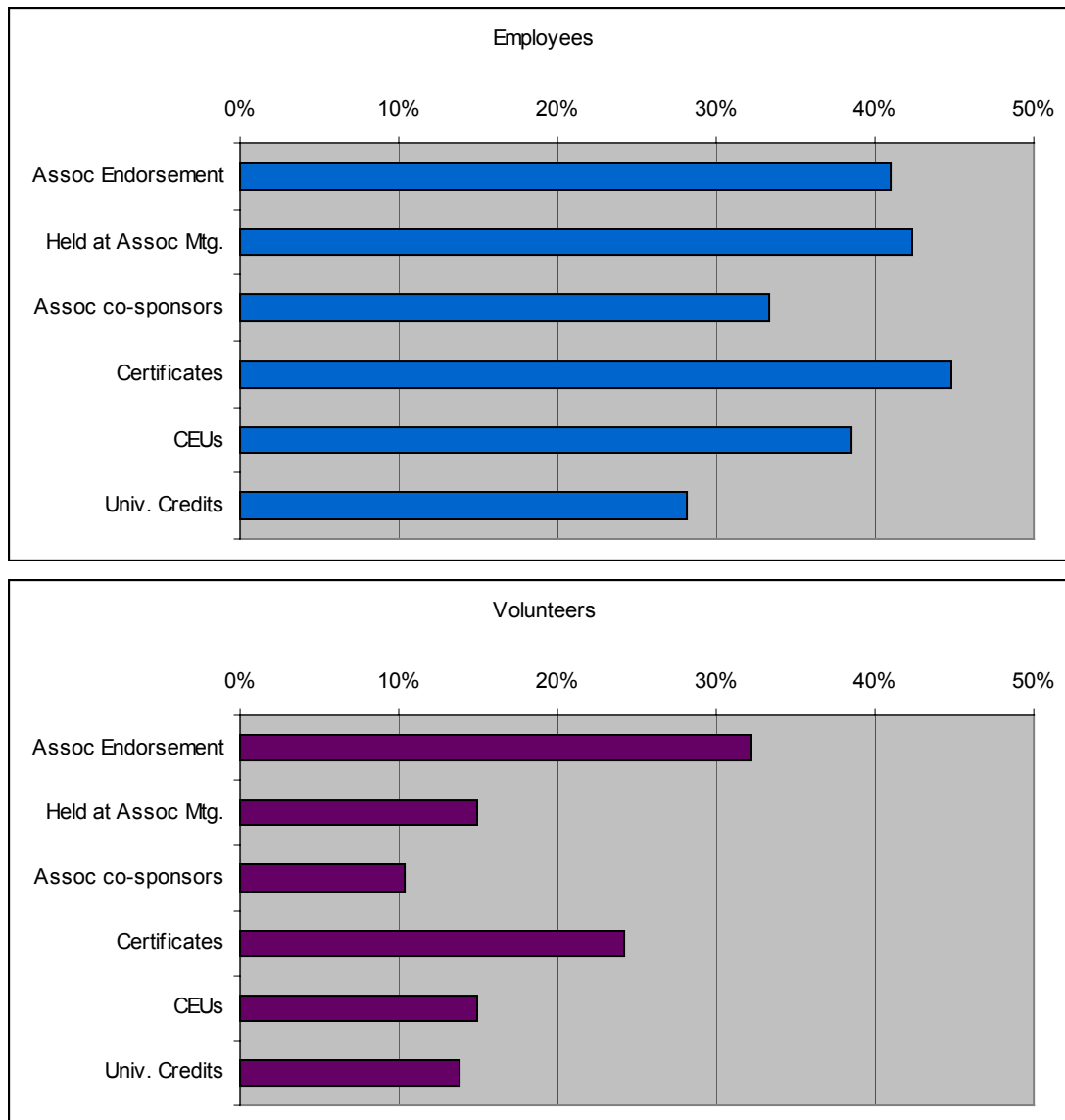
Incentives and Endorsements

In order to identify the most productive incentives and endorsements, the following question was included:

9. Check every item in this group that is true for you:
 I would be more likely to attend a training session if...
- ☐ ... Continuing Ed. Units (CEUs) were offered.
 - ☐ ... certificates were issued.
 - ☐ ... college or university credits were provided.
 - ☐ ... endorsed or approved by a professional association.
 - ☐ ... co-sponsored by my professional association.
 - ☐ ... it was part of a professional association's meeting.

There were significant differences in the responses of volunteers and employees for five of these items – all but association endorsements. In general, volunteers are less influenced by any of these incentives and endorsements than are employees: for each item, a lower percentage of volunteers checked it than did employees. Of the six items, only the one *most* frequently checked by volunteers (association endorsement) was checked more often than the *least* frequent choice of the employees. Also, the rankings of the six items are different for volunteers than for employees:

- For volunteers, the most productive single approach is association endorsement, and the second-most productive approach is issuing certificates.
- For employees, the most productive approach is issuing certificates, the second-most productive approach is holding sessions as part of a professional association's meeting, and the third-most productive approach is endorsement by a professional association.



The response, “endorsed or approved by a professional association,” leaves an open question as to which association’s endorsement would be influential for a particular individual. This led to an exploration of differences across categories. It appears that professional association endorsement may not be equally influential for all categories of employee (ANOVA: $p < .07$). The percentage of coastal and health personnel who checked “association endorsement” was higher than the corresponding percent for *all* employees. For volunteers, this distinction across categories does not approach statistical significance, so it should be interpreted with caution; only for health board members was the percentage that checked “association endorsement” substantially higher than the percentage for all volunteers.

Combinations of these approaches are worth considering. Considering volunteers and employees together, any two of the overall top four items – association endorsement, certificates issued, part of a professional association’s meeting, and CEUs offered –

would give 50% of the respondents at least one of their favored incentives. Three of the top four will give 56–58% of the individuals at least one of their favored incentives. Four of the six (which could include either “College or University credits” or “Co-sponsored by my professional association” but not both) will give about 63% of the individuals at least one of their favored incentives from this list. As another example, the four-way combination of association endorsement, at an association meeting, certificates, and either CEUs or University credits will give 63% at least one of their incentives (and will give most of those more than one).

However, considering the significant differences between employees and volunteers, it is more appropriate to examine the two groups separately. For employees, the combination of issuing certificates and holding the training session as part of a professional association meeting is the best two-way combination – providing at least one favorable influence for 67% of employees and two favorable influences for 21%. For volunteers, this combination offers at least one favorable influence for 36%.

A combination of issuing certificates and obtaining endorsement from a professional association is the best two-way combination for volunteers and the second-best for employees; for employees, it provides at least one favorable influence for 59% and two for 27%. For volunteers, it provides at least one favorable influence for 41% and two for 14%.

Computer Access, Use, and Confidence

Three questions were posed to assess the respondents’ access, use, and confidence:

17. Please write a number between 1 and 5 in the right-hand column below to respond to these three items. As before, 1= low, 5=high.,\

My access to a computer is ...	
The frequency with which I use e-mail is	
My ability to find material on the world wide web is:	

Both employees and volunteers ranked their computer access high – employees slightly higher than volunteers but not significantly so.

Email frequency was rated lower and with a similar relation between volunteers’ and employees’ ratings. Employees rated their ability to find material on the world wide web significantly higher than volunteers did.

	All respondents	Volunteers	Employees
My access to a computer	4.46	4.34	4.66
The frequency with which I use e-mail	3.81	3.60	4.02
My ability to find material on the world wide web:	3.73	3.43 (Significantly different: t-test $p < .01$)	4.04

Scheduling and Travel Distance

The questionnaire posed four possible scheduling options when more than one day of training is required, and requested one preferred option. These were rated as follows:

	All	Volunteers	Employees	Significance level
Consecutive days, within commuting distance	36.1%	25.3%	48.7%	.002
Consecutive days, with overnight lodging	17.2%	12.6%	19.2%	Not significant
Non-consecutive days, one week apart	32.5%	36.8%	28.2%	Not significant
Non-consecutive days, several weeks apart.	12.4%	12.6%	11.5%	Not significant

The subsequent question addressed acceptable travel distances:

19. What is the longest trip you would be willing to make for relevant, useful training?

Five options were provided for a one-day event, and the same five for multiple trips (for each session of a series).

The responses were as follows:

	Single trip	Multiple trips (series)
Up to ½ hour each way	41.4%	18.9%
Up to 1 hour each way	34.9%	47.9%
Up to 2 hours each way	3.0%	17.8%
Up to 4 hours each way	18.9%	3.0%
Longer	0%	0%

Surprisingly, more respondents indicated that trips of “up to one hour” *or longer* are acceptable for multiple trips in a series (68.7%, summing the bottom four cells of the right-hand column) than for a single trip (56.8%). Not surprisingly, long trips (2-4 hours each) were more acceptable for a single trip (18.9%) than for multiple trips (3%).

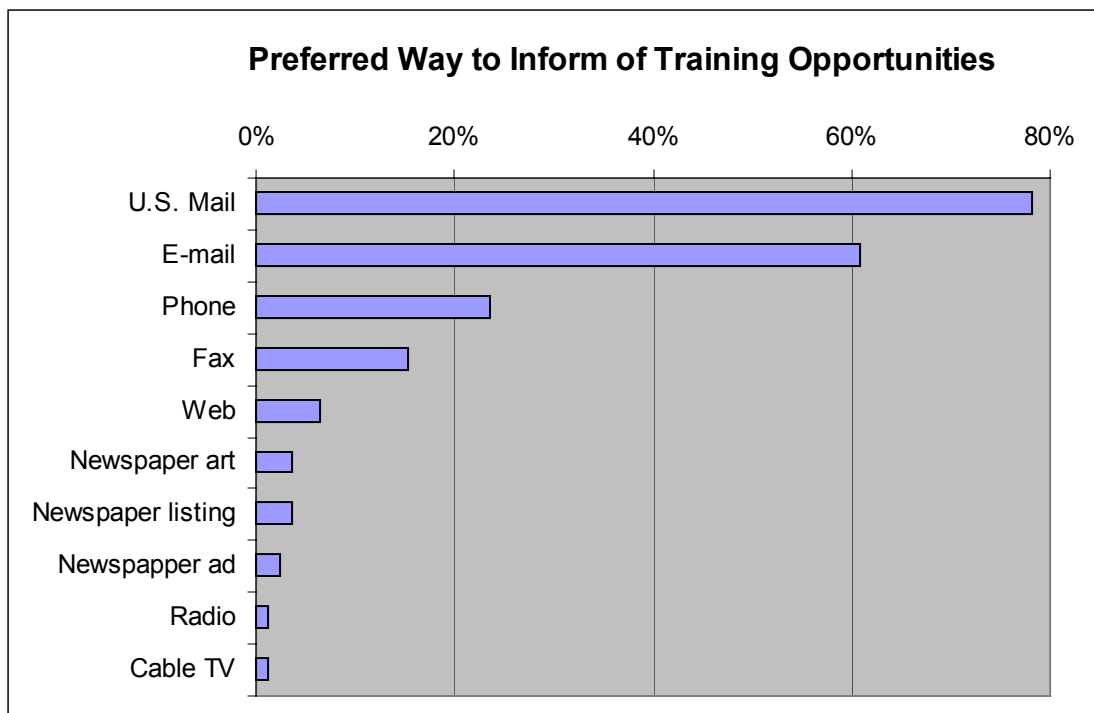
Preferred Way to Inform of Training Activities

The following question was used to identify preferred methods of publicizing training opportunities:

24. What are the most effective ways to inform you about training opportunities?

(Check one, two, or three.)

Ten options were provided. The results are as follows:



If e-mail is the method of preference because of its negligible cost, then U.S. Mail is the best way to reach those who do not prefer email; this combination will give 95% at least one of their preferred methods. Using only e-mail for those who prefer it will save 61% on postage costs (assuming that accurate email addresses are available for them), but using *both* e-mail and U.S. mail may provide added benefits by reducing the chance that the message will be ignored and by reinforcing the message via a

second communication method. For the remaining 5%, there is no single method that will give more than one-fourth of them their preferred method.

Mass media should not be totally discounted in that they may provide legitimation for events that may be influential even to “insiders” who learn of them through direct mail or email. Mass media also provide the possibility of recruiting participants who are not on existing mail and email lists. Note that organizational newsletters were not listed as an option. For any particular individual, the combination of two or more favored incentives may be especially influential.

Pricing

The questionnaire asked about how training costs might be covered:

20. If there is a fee for training, who is most likely to pay?

- ☐ Local government ☐ Myself
☐ Split between local government and myself
☐ Some other party: _____
☐ None of the above; a fee would prevent me from participating

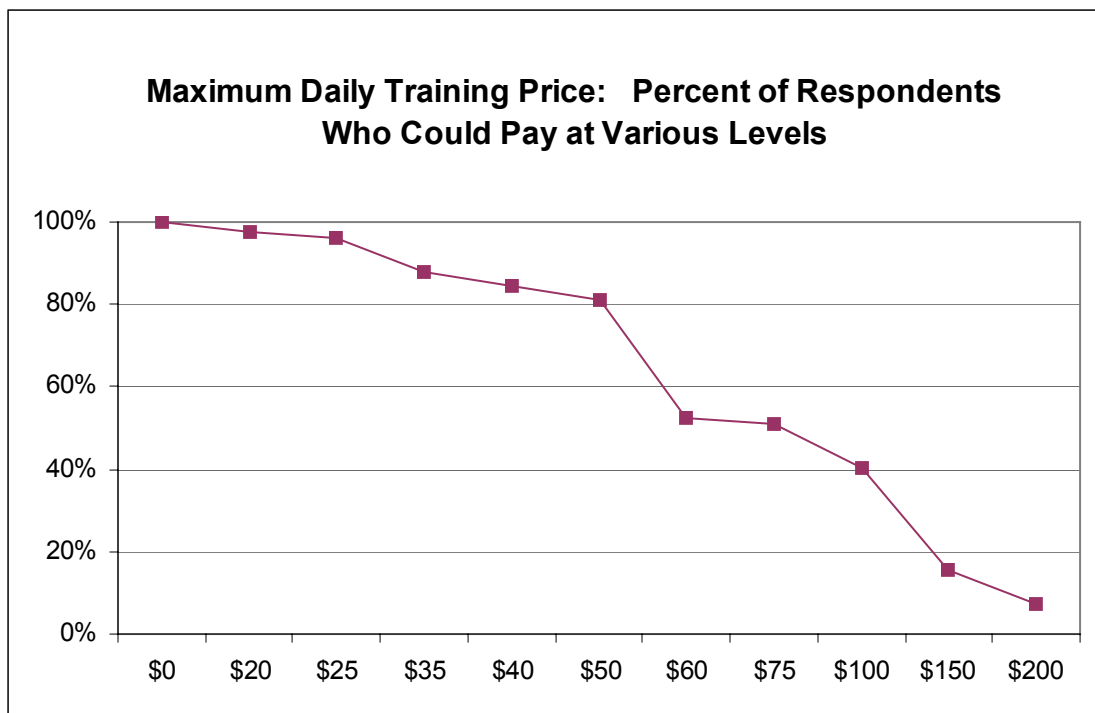
Volunteers' responses indicate that they are many more of them cover their own training costs than do employees:

Response category	Volunteers	Employees
Local Government pay	28%	87%
Myself	49%	5%
Split between local government and myself	18%	11%
Other	6%	–
None of the above; a fee would prevent me from participating	6%	7%

The following question was posed regarding pricing:

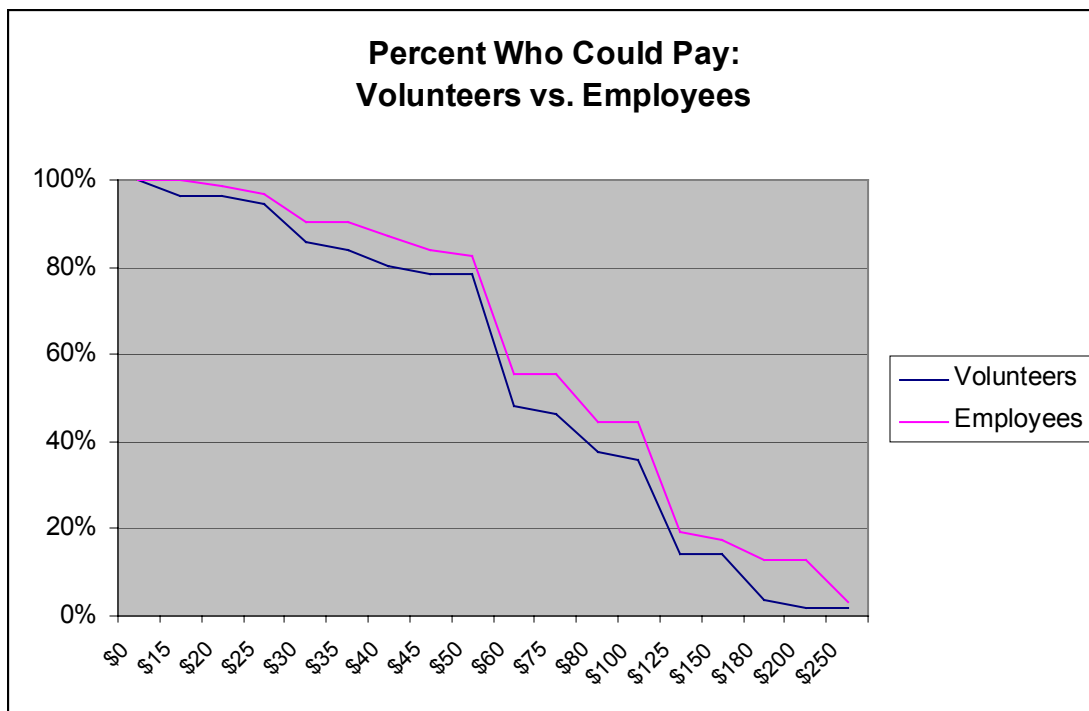
21. What is the maximum amount you believe would be paid for a one-day training session of good quality?

The overall mean response is \$81.80 and the median is \$75. However, an unusually large proportion of the respondents (28%) left the item blank. If their responses are treated as \$0, the mean response is \$59.05. The line graph below shows the percentage, out of the 122 who did respond to the maximum price question, whose maximum amount was at or above various price levels.



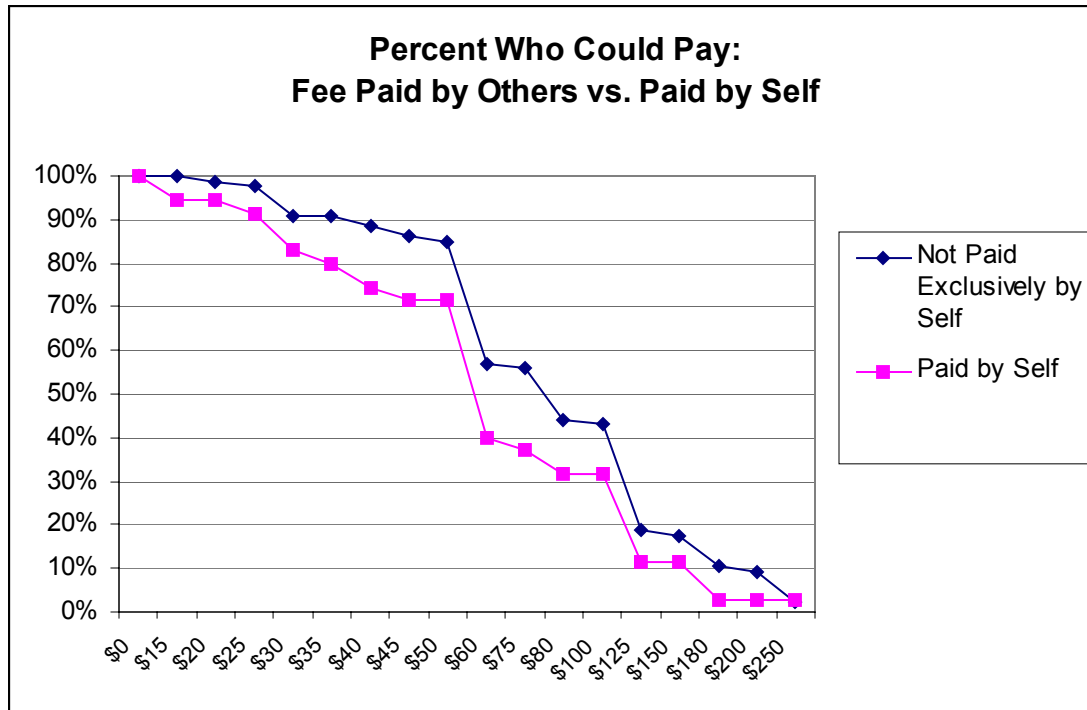
A \$50 fee is at or below the amount that 82% of employees and 78% of volunteers indicated that they could pay. However, 90% of employees could meet a \$35 fee whereas it would take a fee of about \$27 to be acceptable to 90% of volunteers.

The problem arises in considerable measure because volunteers are much more likely to believe that they would be the ones to pay for training.



Of the 169 respondents, 26% indicated that they would pay for training personally; 91% of these are volunteers. Their ability to pay, compared to those whose fees would be paid by local government, is shown in the chart below. A \$50 fee would exclude only 15% of those whose fees would be paid by others, but would exclude 30% of those who would pay their own fees. Eighty percent of those paying their own fees would find a fee

of \$35 or less acceptable, whereas 80% of the others expect that they could meet a fee somewhat higher than \$50. Similarly, 90% of those paying their own fees would find a fee of \$25 or less acceptable, whereas 90% of the others expect that they could meet a fee of \$35.



It should also be noted that 36% of the volunteers compared to 19% of the employees did not respond to the question about a maximum fee. If their non-response means that they are uncertain about how much could be paid (or perhaps even who they would ask for financial support for training), then this may reflect an even greater differential between volunteers and employees in their ability to participate in training.

The distinction between paying oneself and having one's expenses paid by local government may provide an acceptable basis for a fee reduction. For example, for a one-day training event with a \$50 fee, a \$15 discount could be offered to those paying their fee from personal funds (and not expecting reimbursement). Such a fee reduction could be limited to volunteers paying with their own funds; this would exclude a small number of employees who expect to have to pay their own fees.

Regional Differences

Analysis of variance was used to test the prospect that there are differences on the items of the questionnaire across the five coastal regions of the state. The highlights of this analysis are summarized here; a more detailed table of results is provided as Appendix J.

The items reported in Appendix J and discussed here were those that met the criterion of ANOVA $p < .2$. This is a much less stringent criterion than the customary hypothesis-testing criterion of $p < .05$. This is an exploratory approach: the criterion is set high so as not to miss *possibly significant* results.

The North Shore region's respondents were not unusually high on any of the responses. The Boston Harbor region is omitted from the discussion because of the low number of respondents.

The South Shore region had high averages on these topics:

- 10S. Environmental technologies

- 10T. Ecological landscaping

... and on these format options:

- Seminars

- Panel discussions

... and this timing preference for multiple sessions:

- Non-consecutive days, several weeks apart.

The Cape and Islands region had high averages on these topics:

- 10R. Nitrogen loading, nutrient management

- 10S. Environmental technologies

- 10T. Ecological landscaping

- 13AA. Explaining coastal issues, laws, and regulations to an individual citizen

... and on these format options:

- Seminars

- Lectures

- Panel discussions

The South Coastal region had high averages on these topics:

- 10C. Habitat protection and restoration

- 10G. Aquaculture

- 10I. Land use planning

- 10S. Environmental technologies

... and on these format options:

- Workshop videos

- Presenter handouts

Appendix J should be reviewed for more complete comparisons and ANOVA probability levels.

Preferences of Those Who Rarely or Never Attend Training

The responses of those who answered “Never” or “Rarely” to Question 11 (“How often have you been to training or professional development activities that address one or more of the topics above (A-Z)?”) were analyzed separately, to see whether they would yield insights about how to generate broader participation in training.

Those who never or rarely attend such training have disproportionately high representation from:

- Volunteer board and commission members (Employees attend training more frequently than volunteers.)

- Select boards and planning boards and staff .

They have disproportionately low representation from:

- Employees

- Health staff and conservation staff

- The Cape & Islands Region

They are proportionately represented among those who are in a leadership role (planning director, DPW director, etc.) as well as those who are not.

They have lower average scores across all content items (the 24 items of Question 10) and all process items (the 11 items of Question 13) than the other respondents.

Those who report that they rarely or never attend training gave significantly lower ratings ($p < .05$) regarding these topics:

- 10B. Marine pollution

- 10C. Habitat protection and restoration

- 10D. Endangered species

- 10P. Water resources (supply, quality)

- 10R. Nitrogen loading, nutrient management

- 10S. Environmental technologies

They gave nearly identical but slightly lower ratings (compared with those who regularly attend training) on these topics:

- 10F. Fisheries (including shellfish)

- 10J. Open space protection

- 10L. Coastal access

- 10O. Boat/marina management

- 13DD. Processes for involving the community in extended planning

- 13II. Ways to work together with other cities and towns

They gave slightly higher ratings (not statistically significant) than those who regularly attend training regarding these topics:

- 10G. Aquaculture

- 10I. Land use planning

- 10M. Port and harbor planning

- 10X. Disaster response

- 13GG. Ways to help a board or commission work well with its professional staff.

Formats

Among those who never or rarely attend training, a significantly smaller-than-expected proportion expressed interest in these formats:

- Panel discussions
- Case studies
- Simulations
- Materials to read regarding the underlying science
- Technical assistance in person
- Technical assistance by phone

Among those who never or rarely attend training, a smaller-than-expected proportion (but not significantly smaller) expressed interest in these formats:

- Seminars
- Lectures
- Conference sessions
- Presenter handouts
- Fact sheets
- Information by internet / world wide web
- Technical assistance by email or the web

Those who never or rarely attend training responded similarly to those who do with respect to:

- Workshops
- Roundtables
- Field experiences
- Problem solving
- Hands-on training
- Local meeting presentations
- Videoconferences
- Material to read
- ...regarding laws and regulations
- Process diagrams
- Web courses

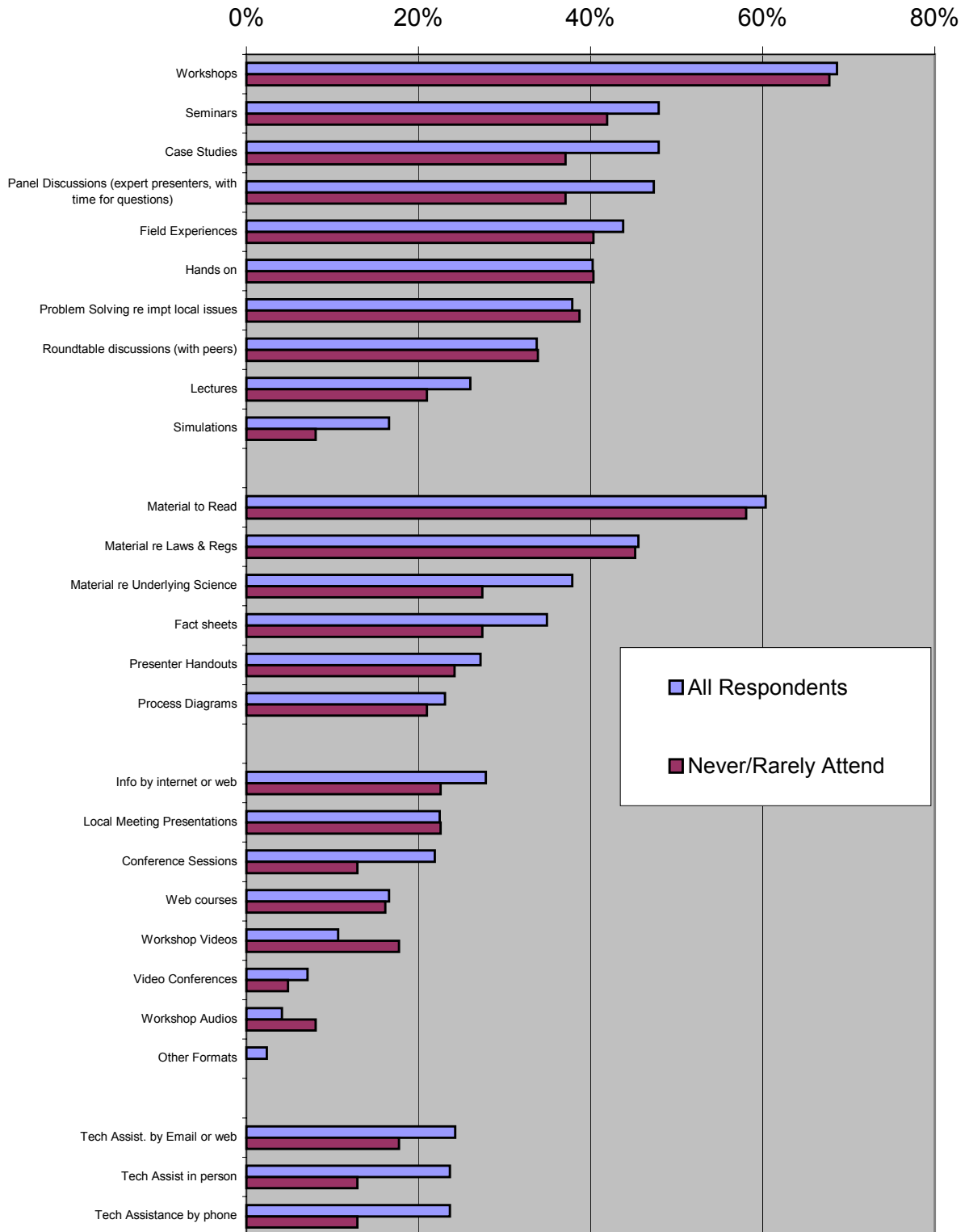
Those who never or rarely attend training responded in slightly *higher*-than expected proportions to these formats:

- Workshop audiotapes

Those who never or rarely attend training responded in significantly *higher*-than expected proportions to these formats:

- Workshop videos

Format Preferences



Recommendations

The implications of this needs assessment regarding format and logistics are clear and straightforward. The implications regarding training content are more complex.

Formats

Recommendations:

- ☐ Use workshops and reading material as the primary formats for CTP.
- ☐ Make reading matter available both in-print and on a web site.
- ☐ Offer technical assistance to provide situation-specific support regarding the topics addressed by training and reading matter.
- ☐ If feasible, experiment with providing training or information sessions as a component of local board or commission meetings, or at special one-town or neighboring-town gatherings. (This will be especially appreciated by a some of the volunteers, more so than by employees.)

Workshops are the preferred format of two-thirds of the respondents for addressing the topics that they are interested in. Workshops can mean many different things; the respondents' ratings of other "in-person" formats suggest which specific workshop formats will be more or less acceptable. Seminars, case studies, and panel discussions each were favored by about half of the respondents. Hands-on approaches, problem solving regarding important local issues, and roundtable discussions (with peers) were rated slightly lower (but simulations were substantially lower, with some specific comments about dislike for role plays). Lectures were favored by only about one-fourth of the respondents.

Materials to read are favored by about three-fifths of the respondents, making them a close second choice, after workshops.

Web-based courses are of interest to about one person in six – probably not enough to justify the preparation time and expense, unless it is for very specific topics well-suited to that medium. Employees rate their ability to find material on the world wide web significantly higher than do volunteers, and it may be that employees check their e-mail somewhat more often than do volunteers.

Workshop videos are of interest to only about one respondent in ten, and workshop audios are only of interest to 1 in 20 (even though they, unlike videotapes, could potentially be used while driving a car). If production time and distribution costs are an issue, a similar level of effort directed toward capturing the handouts, computer graphic presentations, and other key elements of a workshop in a print or web-based form may be more valuable than either workshop audio and video or developing full-fledged web-based courses.

Local meeting presentations were favored by about 30% of volunteers (but only 15% of employees).

Timing and Travel Distances

Recommendations

- ☐ Offer workshops mostly on Tuesday, Wednesday, and Thursday.
- ☐ When a half-day is sufficient, favor morning times.
- ☐ Treat January, February, and March as the prime months for training; avoid June, July, and August (unless a program's content actually requires it). All other months are acceptable.
- ☐ Hold some evening and Saturday sessions to allow for the involvement of those who can't attend mid-week morning sessions (especially volunteers with other employment).
- ☐ If two days are required, schedule consecutive days (especially for employees), or else one week apart but not further apart. If more than two days are required, one week apart may be the better approach.
- ☐ Whenever possible, locate events so that no more than one hour's travel (each way) is required – less if possible.

Incentives and Endorsements

Recommendations

- ☐ Seek the endorsement or approval of relevant professional associations, and make it known to participants.
- ☐ Offer certificates.
- ☐ Whenever possible, offer Continuing Education Units (CEUs) or college or university credit, or both.
- ☐ Consider offering some sessions in conjunction with professional conferences.

Endorsement by a professional association appears to be the single most influential incentive or endorsement of the six listed on the questionnaire; it would reportedly make a difference for slightly more than one in three participants.

Certificates are a close second; one-third of the questionnaire respondents report that certificates would make them more likely to attend a training session. CEU's and College or University credit will matter to 20 to 25%.

A well-chosen combination of incentives and endorsements will do the most to encourage attendance. Carrying out all four of the incentives and endorsement recommendations listed above would make a difference to almost two-thirds of the questionnaire respondents.

Event Publicity

Recommendations

- ☐ Develop a database of local officials, including mail and e-mail addresses. Update it periodically – preferably after April elections. Provide ways for those listed to update their information or to ask to be removed from the list.
- ☐ Use E-mail and/or U.S. mail to publicize events. The most economical approach will be to use E-mail only (without U.S. mail) for those who provide an e-mail addresses, but

the combination of e-mail and U.S. mail might reinforce the message or prove more reliable in securing responses.

☐ Use organization newsletters and/or mass media to reach those who aren't in the database.

☐ Involve past and current participants in recruiting other local officials from their communities.

Pricing

☐ Charge no more than \$50 for one-day training sessions .

☐ Offer a reduced rate of \$35 for one-day training sessions for those volunteers who are paying from personal funds and do not expect to be reimbursed.

☐ Consider similar discounts for three or more sign-ups from the same community (to encourage developing a "critical mass" of participants) and multi-event sign-ups by a single person. Develop ways to manage this that do not encourage delaying sign-ups until the critical number have committed: "Please register ASAP to guarantee a place; if two others from your community register, you will receive a partial refund."

Training Content

The key strategic choices for the Coastal Training Program have to do with training content. This needs assessment has powerful implications for those choices, but the information from the needs assessment will inevitably be filtered through the mandates and organizational values of the CTP partners. The intention of this discussion is to clarify the choices and the possible implications of the needs assessment information for those choices. This will be done by presenting several different approaches to training content decisions.

Approach 1: Address the top interests of the participants.

The needs assessment has identified four tiers of interest; this approach would suggest addressing "content topics" Tiers 1 and 2 plus "process topics" Tier 2 (since it lacks any Tier 1 items). The resulting CTP curriculum would include:

	“Content” Topics	“Process” Topics
Tier 1 (Avg > 3.75)	Wetland & waterway protection	–
Tier 2 (3.25 – 3.75)	Land use planning Marine pollution Open space protection Habitat protection & restoration Environmental technologies Stormwater management Nitrogen loading, nutrient management Special area management Water resources (supply & quality) Coastal access Coastal process & geology Wastewater management Fisheries (incl. shellfish)	Explaining coastal issues, laws & regs to an individual citizen Using computer mapping (GIS) Ways to work together with other cities and towns Processes for involving the community in extended planning Processes for negotiation & conflict resolution

The detailed information in Appendices C and D provides suggestions as to the specific sub-topics that may generate particular interest.

A variation on Approach 1 would be to study the preferences of each category of municipal official and address the top-priority interests of each category.

Approach 2: Address the topics where there is interest that is not fully met by current training offerings.

In the presentation of findings, above, data from CTP’s market analysis study was used as a rough indication of the presence or absence of training opportunities regarding a particular topic. The topics that are suggested by that analysis include:

- Storm water protection and management
- Special area management
- Nitrogen loading and nutrient management
- Coastal access
- Disaster Response
- Port and harbor planning
- Renewable energy
- Global warming and climate change
- Process topics (not specified)

Further analysis of existing offerings would undoubtedly lead to refinements of this list. For any of the topics to be considered under Approach 2 that have non-coastal as well as coastal dimensions, it would be important to identify what the uniquely coastal aspects of the topics are and how well those coastal aspects are being addressed by others’ offerings.

In cases where there is existing training of good quality but that does not address the coastal dimensions, CTP will want to consider whether to offer stand-alone training on the coastal aspects of a topic or collaborate with the other training provider to see that the coastal aspects are well addressed. Regarding that point, comments during the small group interviews indicate that many of the local officials from coastal communities do not want to travel a considerable distance for training that fails to address the coastal issues they're concerned about. A nearby training that addresses their concerns would be their preference. However, there may be instances where a well-crafted collaborative effort is beneficial to all.

Approach 3: Develop a curriculum based on expert judgments about training needs.

The current study did not survey scientific or legal experts in order to develop a “third party” judgment about the priority training needs of local government officials in coastal municipalities. CTP’s presenters will undoubtedly have such judgments, and CTP could gather those judgments in a systematic way. If this study’s list of 24 content topics and 11 process topics were used, the expert respondents would almost certainly have a different set of top-priority topics than do the local officials themselves. As one specific example, experts might believe that it is important for local officials to begin to address the likely implications of global warming, such as increased coastal flooding due to a rise in mean sea level and an increase in the frequency and severity of extreme weather events. In such cases – high expert ranking and low local official interest – CTP would need to consider whether to:

- Persuade local officials that the topic is important
- Embed the topic within other topics that are of interest
- Provide training and encouragement to those who see the topic as important, with the hope of gradually building a critical mass of trained and committed local officials

...or in some other way work with the disparity between what local officials may need to know and what they are interesting in learning.

If one of these Approach 3 variants is selected, the contribution of this needs assessment would be to distinguish the topics that will find eager audiences from those that are not likely to. The graph titled “Percent of ‘5’ and ‘4’ Ratings: Content and Process Items” offers the most straightforward way to envision the level of interest that any particular topic will generate.

Approach 4: Identify an ideal local mix of skills and knowledge, then work toward it.

This approach would take the expert opinions of Approach 3 one step further. CTP would understand its challenge to be imagining an ideal distribution of knowledge and skills within local government. For each priority topic, and probably for specific sub-topics, CTP would consider what the ideal would be ...

- ...for one or two people on the right board (and/or affiliated staff) to have the knowledge and skills in question?

- ... for everyone on a specific board (and related staff) to have the knowledge and skills in question?
- ... for one or two people on a number of boards and commissions to have the knowledge and skills in question?
- ... for a substantial percentage of people on a variety of boards or commissions, and roles to have the knowledge and skills in questions;
- Etc.

For any particular topic, recruitment would be focused according to those choices.

Approach 5: Build a network of “Coastal Partners”

This approach assumes that CTP cannot precisely target, recruit, train, inspire, and support the particular people that it might like to reach through Approach 4. Instead, a more realistic alternative would be to accept that the level of interest in coastal issues will vary widely, even among individuals on a particular board or in similar staff roles, but that any municipal official who has interest can come to see themselves as ongoing partners with CTP in building a broad and enduring base of knowledge and skills that will enhance the capacity of coastal communities to competently address coastal issues. Approach 5 could be grounded in both participant interests (similar to Approach 1 – perhaps with further assessment of the specific needs of participants as they sign up for events) as well as expert judgment about needs and priority topics (Approach 3). However, the distinctive feature of Approach 5 would be to seek an ongoing relationship with participants that extends beyond individual training events and which is built on a shared commitment to address coastal issues.

This approach could be furthered by the following measures:

- Encourage participants to attend multiple training events on coastal issues, perhaps by offering multi-event discounts to a single individual who over time enrolls in three or more events. For example: “If you have attended two or more previous CTP training events, check here ☐. Your fee for this event will be \$35.”
- Encourage participants to think of themselves as having an ongoing role in addressing coastal issues, perhaps by creating a “Coastal Partner” status that is more than a “frequent flyer” program for regular program participants, and is in fact a network of people, known to CTP and to each other as being committed to learning about and addressing coastal issues. Consider what additional benefits and incentives could be offered to these ongoing participants.
- Plan events that draw multiple boards and multiple towns into shared efforts.
- Treat the “Coastal Partners” concept as a framework for CTP collaborators to work with other training organizations.

Approach 6: Priority Issues

This approach would be focused on a short list of timely issues. The list of issues would evolve slowly, over a number of years. Although CTP would provide training on content and process topics, local officials would think of CTP as the organization that helps build the capacity to address whichever of the issues from CTP’s short list are of concern to any particular community. CTP’s offerings for any particular season or year would be

based on an analysis of the knowledge and skills that are essential for addressing those issues.

An implication of this approach is that CTP would prefer to treat a limited set of training topics thoroughly, in depth, and with sufficient “market saturation” that a critical mass of individuals and communities all along the Massachusetts coast are addressing those issues. The potential benefit is that a well-focused set of training offerings would offer the highest chance of practical local benefits as a result of CTP’s efforts.

The major risk involved is that CTP could come to be seen as an advocacy organization. This concern could be addressed by carefully choosing and publicizing *non*-advocacy “positions” (in favor of widely shared information and democratic processes) regarding key issues.

This approach could be combined with Approach 5, to clarify the nature of the Coastal Partner approach. In a way, Approach 6 is most closely related to Approach 1, if the 24 content topics are seen not just as possible training content but as issues to be considered as possible CTP priorities. Approach 6 would suggest that CTP should choose a very short list from among the content preferences identified by this study and focus there – for example:

- Wetlands and waterways protection (10 H)
- Land use planning and open space protection (for coastal areas) (10 I & J)
- Marine pollution; habitat protection and restoration (10 B & C)

Some of the other content and process topics of this study would fall in place as sub-topics of those three. Most of the others would be deferred indefinitely as possible future topics.

The key choice implied by Approach 6 is how much focus – how much concentration of CTP’s efforts – will be needed in order to show a meaningful benefit to the coastal communities of Massachusetts. That is a question that goes beyond needs assessment and requires the best judgments of the CTP curriculum planners.

It will probably be productive for the CTP partners to identify their preferences for Approaches 1 through 6, and to identify their organizational limits and constraints, if any, that might guide the content selections. However, the six approaches described above are not mutually exclusive. The best approach regarding training content will be guided by a synthesis of the six, honoring the core principle of each:

- Heed the participants’ preferences.
- Avoid duplicating existing training offerings if they sufficiently address the coastal dimensions of the issues in an acceptable way.
- Seek the opinions of presenters and other experts about important program content.
- Envision an ideal mix of knowledge and skills regarding coastal issues within the local community.
- Build an enduring commitment to training and to addressing coastal issues.

- Focus CTP's offerings sufficiently to be able to show tangible impacts.

An additional guiding principle is this: Continue the needs assessment process. It needs to be understood as an ongoing process.

Needs – and the participants' understanding of their needs and interests – will change over time. Event registration forms provide an opportunity to pose a question about program content preferences or about local situations related to the event's theme that are problematic. Reaction forms at the end of the event provide an opportunity not only to gather opinions about the event just ended but also about remaining, unfulfilled training needs.

Comparing the level of enrollment for specific events will itself provide useful data about the levels of interest in particular topics. It will be valuable to tabulate enrollment by role and category, by community, and by region.

It is highly appropriate to use such data to update a needs assessment report such as this one. In this case, the information on each specific content area (Appendices C and D) can be updated, so that program planners and presenters have the best possible insights about what will advance the capabilities of local officials with regard to coastal issues.