

# **Distributing Congestion Management System Information Using the World Wide Web**

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## **Abstract**

The Internet is a unique medium for the distribution of information, and it provides a tremendous opportunity to take advantage of peoples innate interest in transportation issues as they relate to their own lives. In particular, the World Wide Web (WWW), with its ease of use and graphical nature, will allow us to better explain and illustrate transportation ideas and solutions.

To do this, a web site must be interesting, or at least informative. The Boston MPO has WWW site, and the Congestion Management System's First Annual Report is available there. Not simply a document available on-line, the Boston CMS site will attempt to stimulate this interest in the Boston area.

Three goals have been established for the CMS site. The first is to provide another vehicle to encourage public participation. Secondly, it allows people to search for only what interests them, to pursue threads, and to send comments to us. Lastly, it allows us to present background information for people who are interested in more details. This latter goal in particular is a work in progress - information will be made available on-line gradually, as we gain the knowledge and have the resources. The paper would further develop these themes, and the presentation ideally would illustrate these goals through a direct connection with the Boston CMS web site.

This paper briefly summarizes the justification and current state of the Congestion Management System World Wide Web page for the Boston MPO. The Web is being used as part of the larger public participation process of the CMS, but targeting a different audience and providing information in previously impossible ways. While this paper talks about how the site will distribute information, the best way to see and understand its use will be online. At the site (the address is shown below), an interactive version of this paper will be available, showing examples and displaying the evolving nature of the site.

## **Why the Web for Public Participation?**

Public participation in the Congestion Management System has three basic goals:

- To Inform;
- To Interest; and
- To Include.

Public participation will provide the information that we have, ask others to tell us what they know. It will seek to get transportation users, abutters, and residents interested in the transportation issues that affect them, in part by showing that we are interested in their opinion. And it will attempt to include all those who might be affected by the issues under study. The web offers some unique opportunities in each of these areas.

## **What Information Is Available?**

All CMS reports and products will be available online soon after they are published. This will include the CMS Annual Report, the scope of work for all CMS projects, and completed reports and technical memoranda. Meetings notices and agendas, handouts, and meeting minutes or summaries will be available online for all public meetings. Links to additional information at other locations on our site, or relevant sites anywhere on the web, are provided. Besides text and tables, maps and other useful graphics are also presented. All this information will be updated frequently, and some superseded information will be archived.

## **Why Is This Information Interesting?**

With preset internal links, and eventually, a searchable site, the content exceeds simple documents available online. An interactive, customized information tour is developed, focusing only on the information of interest, stored anywhere online. Users can focus on specific locations or topics of interest, follow a problem from identification through alternative analysis and project scheduling, or discover new and unexpected links. The site and its links form one giant database, searchable however the user sees fit.

To accomplish this ideal, information must be current, and outside links must be exhaustive. To date, we have been able to frequently update the CMS site, with new meeting notices and information as it becomes available.

Establishing links to the rest of the net has been more hit-and-miss. Some topics, such as ramp metering, have been the subjects of comprehensive searches because of project needs, but many useful links have not been established. Keeping current is an event more daunting task, although some new search engines will allow us to monitor sites for changes. The resource challenge here will prevent the ideal for the near future.

Nevertheless, it is these links which hold the key to establishing that transportation planning is fun. Someone interested in ramp metering, for example, can use our site not only to find out the cities where ramp metering is in operation, but to visit several of these cities online, and, in the case of Seattle, see actual snapshots of conditions on the ramps just a few minutes ago. Users could then send their comments on the idea for Boston, or ask about future meetings on the subject. While this may not be as interesting as live picture from Mars, it still represents a quantum improvement over traditional fixed-content, text-driven reports.

## **Who Gets Included?**

Certainly, our web site will be used by many who are currently involved in the planning process. Members of the Boston MPO, transportation agency representatives, local officials, consultants, and some members of the public all regularly ask for information that is now available online. For these people, adding links from the information they already access at meetings and through reports would be most important. The availability of additional information online, information traditionally contained in limited-distribution appendices, for example, is another benefit our site can provide.

At least as important from a participation standpoint is the new audience(s) we can reach. Those who can't easily get out (some of whom might currently have problems accessing our site as well). Those who don't attend meetings, for scheduling or other reasons. And those who are

unaware of our activities but regular users of this new medium. Younger citizens, for example, who traditionally don't take much interest in planning issues, can be reached if we can show them why they should be interested.

We are also hopeful that using the web will extend the number and range of comments. Certainly, commenting will be easy. The potential for anonymity will be attractive to some who might be shy at a public meeting. And, since comments need not be live, using the web allows for deliberation and reasoned responses. Even an exchange of information.

### **Let's Go Surfin!**

Examples of all these capabilities can be seen on our web site. At this point, if you have access, it might be best to visit our site at

[www.magnet.state.ma.us/bostonmpo/](http://www.magnet.state.ma.us/bostonmpo/)

Click on [Congestion Management System](#), or simply browse the Boston MPO site. Eventually, we hope to have a tour available to demonstrate the features and uses of our site - it may be online by the time you read this.

Once you have finished with the site, return to this page and we will talk about the future.

### **What's Next?**

This describes where we were with the site as of late May, 1997. The next section of this paper talks about where we plan to go in the future. Some of these extensions may be available on the site by the time these conference proceedings are published.

#### *Virtual Meetings*

Notices of public meetings for all CMS studies are posted, along with directions if they are available. Meeting notices for most Boston MPO activities are already published on the web site, representing simply another outlet for making information available.

But the idea of virtual meetings expands this simple concept to include all the information exchanged at public meetings. Tables, charts, and maps given out at meetings, and, in some form, the public presentation itself, can be posted online. Some software applications, for example, allow slide presentations to be saved and played back online as the user wishes. Meeting notes and summaries can also be made available in this way after the meeting. And after any user finishes reviewing this information, he/she can easily submit comments. Anyone who does submit comments can be added to our mailing list and automatically informed of future meetings as well as updated information available online.

This concept of virtual meetings has recently been implemented as part of our Route 20 Corridor Study. In conjunction with a public meeting held June 24, 1997, all of the information discussed above is now available through the Route 20 study portion of the CMS web site.

#### *Linked Maps*

Another extension recently implemented is the concept of "linked maps", i.e., linking a map to all the supporting information collected to prepare the map. Normally, if using a map results in requests for additional information, a phone call and searches through databases will be necessary. With linked maps, most of these requests can be answered online.

Recently, another CMS project led to the preparation of a Massachusetts Park-and-Ride map, showing the location of all lots where parking is available for carpool and transit users. This map included some information on available services, phone numbers to call, and directions to the lots.

As implemented online, clicking on a section of the Massachusetts map will provide a more detailed map of lots available in that area. Clicking on a particular lot will then produce a wealth of information about that lot. Besides the name, address, and number of spaces, a locus map showing detailed directions is available. A lot diagram is shown, and pictures of the lot are posted. Where transit routes stop at the lot, the route names, headways, and operator are listed. Some operators have their own web sites, and links are provided - the user can then check the schedule and find out the fare. In the future, when space availability is monitored and posted on VMS signs, links to this information will also be established.

So far, this information is mainly available online only for MassHighway carpool-oriented lots. In the future, we hope to expand the coverage to include the much larger network of transit-oriented lots run by the Massachusetts Bay Transportation Authority (MBTA).

### **And Further Down the Road?**

#### *Project updates*

Currently in the Boston MPO, we maintain a database tracking the status of a variety of transportation projects throughout the region. In the CMS, this database is used to determine if locations with identified problems are already on track for solutions. We hope to eventually have this information available online, allowing users to search to see if a project is already planned for their street, town, or area of interest. We cannot yet implement any online database, but we plan to have this capability in the near future.

#### *Chat rooms?*

At present, through email, anyone who wants to take the initiative can tell us about current problems or proposed solutions. We may formalize this approach in the future, to allow postings to a "Tell Us About Your Transportation Problems" site, which will include other persons comments as well - in effect, a Boston transportation newsgroup. Eventually, if this generates sufficient interest, we may take this a step further, and set up a Chat Room for an hour or two a week, where people can get feedback on their comments immediately.

#### *Multimedia games??*

Between the popularity of games like SimCity with the public and microsimulation models with transportation professionals, our ability to test scenarios and realistically display the results is evolving rapidly. Already we are using simulation packages to great effect at public meetings to display the results of different alternatives. As soon as the technology to support it is available to us, this too will be available online for individual studies.

Further in the future, users could be able to test alternatives themselves. By tapping into the more detailed knowledge of regular users of an intersection, for example, and combining it with realistic traffic engineering evaluations of alternatives, we could allow citizens to suggest and test solutions. Regardless of whether or not the best solutions emerge from this process, testing alternatives would give users a better understanding of the possibilities and constraints of the planning process. Combine this with budget and resource constraints, projections of future popu-

lation and employment, open it up to a regional forum online, and we have the public participation process for the TIP of the next century.

### **What Have We Learned?**

Stepping back from this future online transportation planning utopia, what have we learned so far in setting up our web site?

#### *Publicize, Publicize, Publicize*

While we are excited about the information available and the improved abilities of our web site, response to date has been disappointing. We have received a few email requests for documents and additional information, but few comments on alternatives or suggestions for improvements. We do not track hits directly, so we cannot tell if people are viewing without commenting.

Some of this lack of interest is undoubtedly the result of an overall lack of interest in transportation planning. As we discussed above, we hope the site can stimulate some interest -- if we can overcome the second problem, the lack of publicity. The CMS paper documents all refer to the site address, and many MPO documents also point to the MPO site. At most public meetings the web site is mentioned. And a brochure explaining the CMS process will soon be widely distributed in all the cities and towns of the region, with the web site prominently mentioned. With time, word should get around to traditional interest groups.

All this publicity utilizes paper avenues. If we are to interest the online community, however, we will have to become known in other ways. Typing in "Boston MPO" or "transportation planning in Boston" into a search engine will find our site, but most of the new audiences we are looking to attract won't know that this is what they are looking for. What we are trying to do is to establish links to high volume, transportation-oriented sites. For example, the Smartraveler site, which is promoted on TV and radio, provides up to date traffic information for the Boston region. A link on this site could allow people to send comments or complaints about traffic to our site. We are currently investigating establishing such links.

#### *Searchable Site Better than Set Links*

Establishing links internal to our site allows us to direct users from problem to study to solution, for example. But it only provides the path and links that we predetermine are appropriate. Users may well want to follow a different path, which they may still be able to do, with difficulty, manually. We cannot currently provide a searchable site, but we plan to have this capability in the near future. At that point we will have both set links and a completely searchable site, which is the ideal.

#### *Need Commitment*

Establishing this CMS web site, and the Boston MPO site in general, has been an intensive effort. Converting documents to HTML is an easy task with new software packages, but establishing links requires careful consideration of paths, how many links are appropriate, and how many external links are needed. Converting maps and other graphics to images that are both legible and small enough not to require long download times is another issue that requires some technical expertise. Perhaps most importantly, once online, the site must be kept current, and additional content will likely be added.

CTPS is a large enough agency to have expertise in computers and GIS in addition to transporta-

tion planning. Even so, a variety of new skills were needed as we tried to accomplish this work in-house. Several person-months of effort were needed to establish the site, and at least one day a week on average is devoted to keeping the site current. Special projects, such as the online park-and-ride map, can also take many months of resources. The point is, establishing a web site requires an ongoing commitment from any agency, and it must be maintained over several years before its true usefulness can be evaluated.

*But...Still Need to Leave the Cave*

We believe using the web is an effective way to distribute information and encourage public participation. But it is only one of several methods that must be used to ensure that all citizens have the opportunity to participate. Virtual meetings cannot replace public meetings, only supplement them. Paper copies of reports are still necessary. Phone calls may still be the best way to answer some questions.

Many of us using the web tend to seek all our information online, and it is a very effective way to communicate with like-minded individuals. But not everyone is connected, and the effort to reach these citizens must be just as intense. CMS is leading to more public participation than many transportation professionals have been used to. We must not allow use of the web to provide us with one more excuse to sit at our computers, but rather use our site as an information resource while we get out more to the real world.

Next time you're out, Visit Us at [www.magnet.state.ma.us/bostonmpo/](http://www.magnet.state.ma.us/bostonmpo/) We're always open!