

## **CHAPTER 6**

### **COMMUNITY OUTREACH**

#### **6.1 OBJECTIVES OF OUTREACH PROGRAM**

One goal of MPW, as an organization of public servants, is to "build a great city" around core community values: seek consensus, avoid divisions, build-preserve-protect, improve the quality of life, and encourage informed, active, involved citizens. These values are reflected in broad community goals that relate to pavement restoration and preservation. One obvious goal would be to build, preserve, and protect the investment in the community's road and street system. Improving the quality of life in the community is a goal partially achieved through the pavement management program. However, the program must avoid decisions that create divisions in the community and must respond to community needs in all parts of the county.

To adhere to these values, certain specific objectives must be achieved in community outreach. MPW must first inform citizens that a pavement management program exists and explain what the program does. MPW then should provide a general understanding of the challenges of pavement maintenance and emphasize the strategic nature of the management process. Finally, the department needs to highlight the efficient use of tax dollars in the pavement management system in contrast to traditional paving programs. Communicating this information and effectively involving citizens in the process is best done through web-based means.

Appropriately, the approach the MPW has chosen for the adoption and deployment of a pavement management system fits well with the department's goals and values, as the proper implementation of a pavement management system both *requires* and *provides*:

- Objective, quantifiable data about the current conditions of the roadway network itself and of the component street segments, and the effects of varying approaches and budgetary levels on the ability to adequately maintain the network as a whole.
- Opportunities for discussion with council members, Mayoral committees, local businesses, and private citizens about the pavement management methodology that has been adopted.
- A means for MPW to proactively notify the public, utilities, and other governmental and regulatory bodies about planned work well in advance of its effect on transportation, traffic, business, etc.
- A means for feedback to be incorporated into the roadway rehabilitation process, and for stakeholders to make objective decisions and justify them to all parties.

#### **6.2 INFORMATION TO BE MADE AVAILABLE**

Citizens need to know that a pavement management program exists. The concept of a comprehensive analysis of street conditions using scientific and objective measures is a novel one for most citizens, regardless of background and experience. The knowledge that the program is in place and that it provides a process that is objective and non-political in nature is

significant. That knowledge provides citizens with a basic assurance that a rational and equitable approach to street maintenance is on-going.

The pavement management program should provide answers to basic questions as part of its public information process. For MPW, ten key questions have been identified. The ten questions and answers shown below will provide a basic introduction to the pavement management program.

**Question 1: What is a pavement management system?**

A pavement management system is a computer-assisted process that examines all public roads and determines the best means to preserve and repair each road individually and the road system as a whole. Decisions are based on pavement condition, ride quality, costs of treatment, benefits to the individual roadway segment, and benefits to the entire road system. Because maintenance funds are always limited, the management system recommends the optimum sequence of repairs to make the best use of taxpayer dollars. The system provides a fair and equitable way to compare repair needs in all the city's neighborhoods to ensure the decisions are in the community's overall best interests.

**Question 2: We have so many streets. How is the information collected and evaluated?**

Covering half the county's roadways per year, MPW uses specially-designed digital survey vehicles to photograph and collect roadway distress data on every street that is accepted for maintenance by the Metropolitan Government of Nashville - Davidson County. Trained technicians then view sections of a road to determine the amount of pavement damage, using a uniform scoring method. Finely-calibrated measuring devices mounted on the vehicle evaluate the ride quality and record the amount of rutting in the pavement. All this information is stored on a computer for processing using specialized pavement management software configured for Nashville's needs. This process results in the full analysis of the entire county's accepted roadways on a revolving 2-year cycle, with each half of the county's roadway data being updated for distress every other year.

**Question 3: How does all of the data help make repair decisions?**

MPW scores the streets in two categories – *pavement stress* and *ride quality* – to obtain an overall score for the street. Pavement distresses include cracks, potholes, and ruts. Ride quality is the measure of how "bumpy" a road is. The scores help public works officials determine the best strategy for each street. One location may need a complete overlay while another street may only need some cracks repaired and potholes filled. By tailoring the repair decision to the needs for each street, based on the data collected, MPW can stretch tax dollars further while making the best repair decision for each street. For further information on this topic, see Chapter 3, page 3-8 of the Long Range Strategic Paving Plan.

**Question 4: MPW never has enough money for street repair. What difference can a pavement management decision make?**

This is where a pavement management program makes a big difference. First, the right decision is made for each street using the field data and the strategy recommended for the particular condition of the street, saving MPW from wasting funds on repair strategies that may be excessive or unproductive at a particular location. Second, the scoring system helps set

priorities for repairs based on objective data. Third, the computerized system ensures that a particular street or neighborhood is not “forgotten” in the decision-making process.

**Question 5: What is wrong with just filling the potholes and overlaying the street every few years?**

Filling potholes and overlaying streets with a new asphalt surface will continue to be important and major parts of Metro’s maintenance program. Sometimes, though, other methods can renew the roadway surface quicker and cheaper than traditional resurfacing techniques. For instance, filling cracks with liquid asphalt can seal the roadway from the damage of water during the freezing and thawing of winter conditions that otherwise would severely damage the pavement. Not only is the cost of pavement replacement saved, the expense of raising gutter lines or milling the street down to make room for the new surface is also avoided. In the case of potholes, the damage may result from a weak base underneath the pavement, and that base material may be weak due to trapped water from a drainage problem or a leaking water line. Correcting these types of problems using base repair techniques can eliminate future pothole problems at that location., but just filling the pothole and overlaying the street will not.

**Question 6: If a street gets a very poor condition score, will it always be a priority for repair?**

Not necessarily, and this is where pavement management strategy gets tough. Sometimes a street is in such poor condition that only a complete reconstruction will make a difference. In that case, the best decision may be to use the limited maintenance funds to repair other roads that are in better condition by using less costly methods. If those roads can be fixed early (before they are in very poor condition), they will last longer and never reach the very poor condition of some roads. This approach stretches the repair dollars and gets more roads repaired faster. The roads in the poorest condition cannot benefit from the other pavement strategies, and will be scheduled for full reconstruction when they reach the end of their usable life.

**Question 7: That sounds like MPW will be fixing roads that are still in fair condition while letting the worst roads fall apart. How can that make sense?**

The secret to good pavement management is repairing roads that are still in “fair” condition but experiencing the early stages of pavement distress, reduced ride quality, and rutting. By keeping those roads in good condition with lower cost repairs, MPW will still have money for reconstructing a few roads each year that are in the worst condition. Industry studies have shown that a dollar spent early in road repair and rejuvenation can give the same improvement as four dollars spent later in the road’s life when repairs are more expensive because reconstruction is necessary. If funds are spent only on the worst roads, our community will stay in a cycle where we can afford only to reconstruct a few roads in very poor condition each year while neglecting simple, lower cost repairs on other roads. If we concentrate on the worst roads, we will never catch up. By spending wisely and strategically, we can continually improve the overall condition of MPW streets with the same amount of funds.

**Question 8: Then will we always have roads in very poor condition that we have to let go until they can be fully reconstructed?**

In the first years of a pavement management system, some roads in very poor condition have to be neglected until the very expensive repairs can be scheduled. Remember that the other roads in the system are receiving repairs earlier, and they never reach that very poor condition. As pavement management strategy is implemented over several years, the number of very poor roads drops to only a small portion of the road system.

**Question 9: Once the pavement management system has been in place for a few years, what can we expect to see?**

As funds are redirected to new maintenance and repair strategies, the community will see different methods used to improve roadway conditions. The performance of those methods will be monitored, since data on every road will be collected every 2 years. That fresh data will allow public works officials to see the results of improvements so that processes can be “fine-tuned” to be more effective. Receiving updated roadway distress condition data every 2 years also means that problem locations can be identified earlier. Just like a medical check up helps someone identify a health problem at an early stage, road distress data helps engineers identify and categorize repair needs early. Those repairs can be scheduled years in advance, with each year’s maintenance schedule constrained by the total funds available. The pavement management system can quantify and illustrate the impact of delaying repairs to future years will be reflected in those future budgets, giving policy makers an objective feedback to budget proposals.

**Question 10: If MPW can anticipate repair costs and strategy several years in advance, what other benefits can that knowledge offer?**

The pavement information that MPW will collect on every street every other year will be useful in many ways.

First, MPW can determine if policies and inspection services relating to acceptance of new streets from developers, repair procedures for utility cuts, and even the new maintenance strategies themselves are effective. The new pavement data will produce a regular “score card” of pavement conditions and a progress report on the effectiveness of the pavement rejuvenation and restoration treatments in use as part of the program.

Second, MPW and local utilities can coordinate future road work more efficiently, since the planned schedule and method of a future road repair will be more accurate and consistent. If the repair strategy is crack-filling rather than an overlay, a utility can proceed with a scheduled cut without having a major impact on Metro’s repair program. Likewise, MPW can determine the cost of delaying road improvements until a future utility project can be completed to be sure the delay will not result in more expensive and extensive repair.

Third, MPW officials can keep track of our many miles of streets more effectively, since a recent photograph of every section of roadway, along with all the pavement data for that location, is always available by computer. A public works official can “drive” a street from the computer screen, with each section of road appearing in sequence. That saves long drive times between sites in the field and enables MPW officials to examine more roads effectively.

Fourth, the pavement management system provides an accurate means for policy makers to measure how wisely tax dollars are being used, since the program can provide a road

condition score by street, by area, or countywide. Policy makers and legislators will be able to monitor progress by location or by year, and have a means to anticipate future budget demands.

Finally, questions about planned work on MPW roads can be answered objectively and fairly. Want to know how much money MPW would need to bring all roadways to a certain standard within 5, 10, or more years? Interested in the impact on roadways of a budget cut in repair funds? Just want to find out the condition of the road you drive the most? With an effective pavement management system everyone can “know the score.”

### **6.3 ORGANIZATION OF THE WEB SITE**

A web-based public information campaign is fundamentally different than other publishing or knowledge-based systems. The differences are key to understanding how to present public information on the web in contrast to information via print, television, or radio.

Historically, public information programs use a linear, controlled approach. A brochure or television program is organized on a step-by-step basis as determined by the operating agency providing the information; readers can skip a page or turn back, but the text follows a single outline. The television program provides no choice at all; the viewer is fully captive to the broadcast format. Newspaper articles or radio talk shows may concentrate on a topic of interest, but the information is not organized and may not be easily retrievable later.

In contrast, a well designed website enables the reader to explore the accumulated information at his or her own pace. The reader can investigate a topic in more detail, or skip over to something else. Hyperlinks permit the reader to quickly divert to a reference, then return. Alternatively, the reader can continue to explore the new topic. Because the reader controls the exploration, he or she is more likely to keep reading. Comprehension is improved because explanations are embedded in a hyperlink, and the reader can move at his or her own pace.

To be effective, the web site must present information in a manner that anticipates the reader’s reaction. The “home page” will introduce the topic and provide the broad areas of information as well as a means to search the site. Each broad area of information will provide access to more specialized areas. Links back to the home page and other central pages should be provided on every page. Short-cuts should be provided for experienced users.

A mix of text, graphics, and video should be presented. Consideration should be given to the different means of learning: reading, visual, etc., so that the site can be useful to a range of readers and viewers.

### **6.4 USE OF THE WEB BROWSER**

All information on the web site will be produced in Hypertext Markup Language (HTML), a method of producing text and links on the web, and will be accompanied by images rendered in cross-platform file formats (eg. JPEG, and GIF). In the web design, consideration should be given to maintaining a balance between speed and accessibility. More advanced web browsers and faster access speeds can permit specialized presentations, but such programming may limit access to the site for other users. The need for non-standard plug-ins should be avoided, but it should also be noted the Davidson County web design standards do permit the use of Macromedia Flash and Adobe Acrobat . While personal digital assistants (PDA’s) are now being used to access the web, the web site will not be designed to accommodate PDA browsers at this time.

## 6.5 DESCRIPTION OF WEB SITE

The entry point to the pavement management website will be through the Metro Nashville Department of Public Works: <http://www.nashville.gov/pw/index.htm>. However, a more direct link from the Metro government home page would be desirable. Citizens do not necessarily associate “paving” with “public works” and are not likely to go through a list of Metro departments. Additionally, the Transportation on the government home page would likely lead citizens to look there first.

The department home page will provide a link to three transportation-related public works program categories: bikeways, sidewalks, and paving. Clicking on the paving icon will link the viewer to the paving home page. The paving section will follow the general format of the successful sidewalk program website.

The paving homepage should have some appealing photos, including a video link, and some general information. The pull down menu will offer links on how to use the web site, access to the full Paving Master Plan, frequently asked questions, project types, pavement cuts, a project search/road viewer option, and a list of paving program contacts. Return links to public works programs and the public works home page will be provided as well.

The page offering guidance on using the web site should provide users simple instructions on accessing information, especially use of the project search/road viewer module. This page should assume the user has very limited knowledge of pavement management or public works functions.

The Paving Master Plan page will provide an electronic version of this report. The page presents an outline of the report, and each chapter can be downloaded independently. A separate link that offers the option of a single download should also be provided. The report will be offered only in Adobe™ PDF™ format so that any it retains the appearance and content originally defined by its authors once downloaded and in the hands of the general public.

The frequently asked questions (FAQ) list will be the questions and answers described in Section 6.2. This page should be updated in the future as new questions are asked that merit inclusion in the list.

The description of project types will focus on asphalt resurfacing, crack sealing, and pavement preservation programs. Links to information on details of each process will be offered. Those links could include photos, videos, sketches, and more detail on each process.

The page on pavement cuts will provide detailed information for private contractors who need to know specific procedures for applying for street cut permits and a description of the street cut policy. Graphics from Chapter 8 of this report should be provided so that contractors and citizens can understand how repairs to new cuts and the effect of nearby old cuts will be made.

The project search/road viewer module will be the most ambitious portion of the pavement management website. Users will have a choice of using the project search function to look for specific pavement projects by keying in attributes such as Street Name, Project Type, Project ID, Paving Group, Council District, Status, etc., or to use the point-and-click map viewer to visually “drill down” to the segment level using pan and zoom tools. Either approach will allow the user to select the segments of their choice, to view project-related data for the selected segments, to and use the roadway viewer to access the video of that segment to virtually “drive”

a street and see the amount of visual damage, if any. (Bear in mind that, since only the segments that are accepted for maintenance by MPW are analyzed and photographed, it is only these segments that can be viewed by the roadway viewer.)

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