University of Maryland University College Graduate Study:

From Community Involvement to the Final Product

Marketing Mega Projects and Public Trust

Course: TMAN 671
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Executive Summary

A business/marketing plan will be developed for use by the FHWA major projects group to help mega project managers with efforts in maintaining public trust and confidence. In theory, if a mega project is marketed properly, public trust and confidence should inherently follow throughout the life of the project. A mega project is a transportation construction project valued at $1 billion dollars or more, or one that becomes prominent to the national attention. As outlined by the "Graduate Study Proposal" by Professor Jay Shattuck (Spring, 2004), this study will focus on ways to market mega projects that will specifically lead to establishing and maintaining public trust and confidence in these projects. Specifically, this paper will be a culmination of communication, research, and market analysis from the combined efforts of two groups. The University of Maryland University College graduate study class group, as assigned by professor Jay Shattuck will work in conjunction with the FHWA major projects group.

The public sector customer will be defined and a market segmentation and positional analysis will be performed to help establish the target market for promoting mega projects. Marketing control and evaluation methodologies will be utilized to provide an accurate assessment of the target market. According to Mr. Thomas Sorel, the FHWA major projects group leader in conference with the University of Maryland University Study Team (March 04, 2004), paramount for the FHWA major projects group is what quantitative measures can be utilized to gauge public trust.

A business review will include lessons learned on current and past projects to ascertain what success or faltering past public involvement efforts have experienced. Those projects deemed as successful or unsuccessful in efforts to provide the public trust and confidence will be

examined. The public involvement will be examined from the beginning to the end of a project - to include the planning, environmental, design and construction, and operations stages.

Marketing goals and objectives will be examined to include a marketing/strategic plan, public awareness initiatives, and a SWOT analysis. An assessment will be made to determine what goals are necessary and relevant for public trust and confidence.

Strategies, action plans and implementation, and evaluation methodologies will be studied and media relationships will be examined. A proposed course of action for mega projects to utilize for establishing and maintaining good media relations will be recommended.

The combined efforts of the FHWA Major Projects group, essential contact resources from other projects, and the UMUC study group will provide a business/marketing plan that will provide a useful tool for mega project managers. Key factors will be identified to maintain public trust and manage risk with the public. Quantitative measures will be recommended to gauge public trust and marketing efforts will be utilized to define the customer base, marketing segmentation and positioning analyses. How marketing efforts are used to promote mega projects will be examined, and also the use of marketing control and evaluation and other conventions utilized to satisfy the goal to maintain public trust and confidence for transportation mega projects will be studied.

Introduction (Participants and Goals)

A. FHWA Mega Projects Overview

Introduction – Low Impact: Keeping the Community at the Forefront

Major (or Mega) projects are defined as projects with an estimated total cost of at least $1 billion or projects approaching $1 billion with a high level of interest by the public, Congress, or the Administration. FHWA senior management designates which projects will be considered major projects due to a high level of interest. By nature, major projects are especially complex and involved, both from a project management and financial management perspective. At this time, 15 mega projects are in some stage of design and construction across the United States – this number should double by 2007. Mega transportation projects can involve aviation (airport), rail (both light and industrial), transit, and highway projects.

Background - FHWA Strategic Plan

Before discussing specifics about mega projects further, it is important to understand the position of the senior-most transportation agency in the nation and its commitment to all stakeholders of the "American transportation system." Through its strategic planning process, the Federal Highway Administration (FHWA) has developed a sense of direction and priority for what is considered as its contributions to the future highways and transportation system for this country. The Plan "[...] sets out long-term programmatic, policy, and management goals and planned accomplishments." It also provides an opportunity to bring all the stakeholders together – government, industry, academia, and the public. The FHWA Strategic Plan sets the goals and strategies for FHWA's role within the Department of Transportation.

The FHWA has gathered input from customers and partners through extensive outreach efforts. Input has been garnered through notices in the Federal Register and on the Internet. The FHWA also held a series of focus groups on "[...] what objectives and indicators were most important [...]" for the FWHA to use to measure its progress. Its vision statement is epic in proportion – "to create the safest and most efficient and effective highway and intermodal transportation system in the world for the American people [...] where everyone has access within and beyond their community and to the world; where crashes, delays, and congestion are significantly reduced; [...] where freight moves easily and at the lowest costs across towns, States, and international borders; [...] where roads protect ecosystems and where travel on our roadways does not degrade the quality of the air; a system where pedestrians and bicyclists are accommodated; and a system where transportation services are restored immediately after disasters and emergencies."

There are five guiding principles to this 1998-2002 National Strategic Plan – two of these five principles specifically relate to "[...] maintaining stakeholder approval." These relate to assuring customer satisfaction, and building and strengthening partnerships.

Assuring customer satisfaction: The FHWA is "[...] committed to excellence in service to its customers and partners." Customers and partners include "[...] everyone who is affected by highway transportation such as the traveling public, business and industry, States and local governments, Metropolitan Planning Organizations, and other organizations and groups." The plan emphasizes the importance of continued dialogue in the "highway community."

Building and strengthening partnerships: This principle discusses the highway system as an integral part of the complex, intermodal, global transportation system. It assures the transportation community that the FHWA "[...] will work with the States and others in the

transportation community to develop a shared vision and goals for a national intermodal transportation system [...], will help recipients identify and adopt best practices that will lead to improved processes and procedures [...]," and "[...] we will seek to improve public and intergovernmental coordination through enhanced cooperative agreements and improved management practices."

Lastly, the FHWA has developed five strategic goals in support of accomplishing their mission and achieving their vision, and wants to find solutions that advance all objects, simultaneously. Obviously it is not difficult to understand that improving the infrastructure and operations of the highway system promotes productivity, safety, national security, as well as mobility. But, in some cases, work on one strategic goal could potentially impact the FHWA's ability to maintain the fifth goal - ability to improve the quality of the natural environment. The nature of this fifth strategic goal centers around the enhancement of community and social benefits of highway transportation. The FHWA is well aware that highway and transportation facilities are major contributors to the quality of life in communities and can be a major factor affecting the quality of the natural environment.

All told, as evident in its Strategic Plan, the FHWA has acknowledged the necessity of maintaining the public trust in each and every transportation project it oversees. By its willingness to promote programs and initiatives to enhance "[...] communities through public involvement, [...] a thorough assessment of impacts, and [...] creative approaches to mitigation and enhancement [...]," the agency shows its proactive nature. Even two of the Plan's seven Corporate Strategies stress "[...] to increase our customer and partner satisfaction, we will [...] actively seek and use customer input, adjust to a changing environment, and [...] we will receive and act upon feedback from customer surveys, listening sessions, focus groups, and other

learning techniques," and, "[...] we will use customer feedback and benchmark high performance organizations to continuously improve our overall performance for our customers."

Ordinarily, success or failure of a mega project is judged by whether the project is: completed on time, within budget, with appropriate quality, and in a safe manner. However, another aspect often overlooked is the community aspect – are these projects being completed and are public trust and confidence maintained by the agencies that are involved in the design and construction? Since the "high-watermark" of project waste and abuse of the 1950's and 1960's, the Department of Transportation and the FHWA have become ever vigilant on how projects are completed. Social upheavals were triggered by these early mega projects, which derailed a large number of projects in the late 1960's and early 1970's. Political impulses, plus the evolution of civic involvement in these projects have made governmental concern of maintaining public trust a mandatory issue in every project. As a result, there are many public and private entities the public can and will hold accountable for these mega projects. Of course, with the spiraling costs of these projects, so spirals the public interest – not only to account for judicious use of transportation funds from public taxes, but from perceived quality of life and consistency of life issues. The bottom line now becomes: How responsive to the public trust is the FWHA and their state partners? All stakeholders must now be included on equal footing - federal and state agencies and the public at large.

Theoretically, public trust and confidence will be initiated and followed through the entire course of the project, if "marketed" properly. This study will focus on how mega projects can be "marketed" to the public in such a fashion to properly establish and maintain that necessary quality of trust and confidence owed to the public that must tolerate such upheaval during the course of these projects. During the course of this paper, review of a number of mega

projects will be conducted – the Central Artery/Tunnel project in Boston, the preliminary phase for the Greater Mississippi Bridge Project in St. Louis, the I – 15 project in Utah, the TREX project in Utah, and the Woodrow Wilson Bridge project in the tri-state Maryland, Virginia, D.C. area. Both positive and negative attributes will be evaluated and "lessons-learned" recommended.

The success of a transportation project depends on more than just the quality of design and construction. Equally important is how it affects the people it is designed to serve. As populations grow and urban areas expand, transportation systems have the potential of altering the very fabric of the community by bringing people closer together or dividing them both physically and philosophically. Given the complexity of transportation projects and the numerous parties involved, agencies have often been reluctant to involve the community in the early stages of project development, trusting instead the expertise of planners, engineers, and designers. But lack of involvement can lead to community dissatisfaction and even public opposition strong enough to prevent project implementation. A perfect example of public rebuff for a major transportation project was the November 5, 2002 voter rejection of Referendum 51 in Washington State. Here voters were not queried about their interest in "other than new highway construction" options – e.g. light rail and community transportation. The "pave-our-way-out-of–it," as an approach to their transportation dilemma, was definitely not an option for the voters.

Recent developments in transportation policy are impacting early planning initiatives. Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) Environmental Policy Statements now require that federally funded transportation projects actively involve communities "in an open, cooperative and collaborative process, beginning at the earliest planning stages and continuing through project development, construction and operation."

On a state level, responding to the changes in emphasis as well as demographic changes and rapid population growth, the Florida Department of Transportation (FDOT) is at the forefront of developing and implementing community impact assessment. In 1996, collaborating with various other state DOTs and in consultation with the FHWA and the Office of Environment and Planning, FDOT helped develop the first guidebook for community impact assessment.

Once the decision is made to seek community involvement in the early stages of a transportation project, the real work begins. How do you define the "community?" What determines its interests? And how can the people of the community be most effectively integrated into the transportation project? "Community is a dynamic concept. Each community is defined by its own set of variables, which can include historic definitions, legal definitions, ethnic and religious ties, natural geographic features, neighborhood and business associations." Every community is unique and the only way to learn what defines it is to talk to the people who live there. You need to get to know the members of the community on a personal level.

B. UMUC FHWA Team (Roles and Responsibilities)

The UMUC team is comprised of six graduate students in the school of Technology Management – Ron Clark, team leader, and the team - Kalpana Hanumanthu, Lee Muth, Mark Zietlow, Victor Ehikhamenor, and Clinett Short-Horton. The team has interacted with the FHWA during formal weekly teleconference, conducted interviews with mega project administrators and other agency personnel, community relations and other public relations staff members, as well as private contractors responsible for keeping a "finger on the pulse" of the media and public relations.

The specific FHWA staff to which the UMUC team has interacted has been the Major Projects Team (MPT), which was created on the basis of an FHWA concept paper from April 2000. This team, comprised of Tom Sorel – team leader, John Broadhurst, Jim Sinnette, Chris Allen, and Phil Barnes, provided a focal point for addressing the FHWA's administration and oversight of all major projects. The MPT provided focus and contacts for the UMUC team. The FHWA Division Offices are responsible for project administration and oversight, including such activities as planning and environment requirements, design, right-of-way, project financing, construction, and contract administration. The MPT is responsible for providing program, and policy guidance for the administration of these major projects in support of the Division Offices and States.

Market Review – Public Trust and Confidence

A. Defining the Public Sector Customer

1. Target Market

The target market for any kind of construction projects varies from project to project depending on the type and location of the project. There are a number of stakeholders involved in these kinds of large projects, but most importantly it consists of -

- Area residents
- Property owners
- Commuters
- The traveling public
- Commercial vehicle operators

- Local and regional government officials
- Local and regional business owners
- Neighborhood associations
- News media
- Emergency response agencies
- Local community organizations
- Environmental and historic resource advocates
- Representatives from the disabilities communities
- Tourist Destinations

People from a large metropolitan area self select themselves and work as a group and involve themselves in the planning, design and construction phases of the project. This way a target population of the neighborhood represents the neighborhood and form user or activity groups.

2. Key Factors in Maintaining Public Trust and Confidence

In order to maintain public trust and confidence in the project it is very important to keep the public well informed about the project through out the project life cycle. To accomplish the same, the project should have a well-informed Public Information (PI) team in place. There could be more than one PI team for a project including the PI team the contractor might have. Mr. Gemperline & Joseph Walker of the I–15 project, in a personal interview with Kalpana Hanumanthu, April 12, 2004, state that the PI team should be proactive, honest, accessible and responsive to the public. It should communicate and keep the entire stakeholder groups informed about the project before and during the construction phases. It should be prompt in responding to

questions put forth by the stakeholders and it should encourage stakeholders to give input and feedback about the project.

Effective communication being the most important aspect throughout the life of the project, the Southeast Corridor Transportation Project developed the "duologue" strategy, which focuses on what the stakeholders would want to know and how they feel at the various stages of the project, and communicate with them with all the relevant information. The "duologue" strategy consists of two components; track one lays the foundation every day through proven public relations communication techniques to constantly have factual information in the marketplace and track two consists of communicating effectively to the emotional and more human needs of stakeholders (Strategic Plan, 2001).

Citizens should be involved early in the design phase meetings and their input should be considered in the final design. To encourage public participation meetings and work sessions should be scheduled regularly at convenient time in the nearby community location or the project office where there is access to resources like the maps, plans, diagrams etc. The meetings should be designed in a way to encourage communication with the people. It should include illustrations and text that is informative, but not too technical or overly simplistic to match stakeholders' understanding. The Woodrow Wilson project team handled public involvement effectively by establishing public comment periods at more than 30 coordination committee meetings, 14 town hall meetings, 25 open houses, and four public hearings. Eight citizen work groups collaborated with study staff to develop recommendations that were then presented to the Coordination Committee. A Study and Design center was open to the public five days a week where citizens could obtain project information and have their questions answered by knowledgeable staff persons (Lynott, 2000).

Stakeholders should be provided with regular updated information about the construction locations, timely and current information on road or lane closures, alternate traffic patterns, the status of the project, and the project goals accomplished till date. The Contractors' PI team should be responsible for announcing sequencing/phasing, road or lane closures, cut-through traffic issues, traffic delays, business access, noise issues, commercial vehicle restrictions and emergency response agency issues.

Residents would prefer timely recurrent information recurring at the same time of the day or the week through various sources like, the newspaper, radio, television, websites, direct mail, flyers, and electronic signs.

3. Key Factors in Managing Risk with the Public

One of the greatest challenges of effective public participation is encouraging and involving group of people representing a broad section of participants encompassing the different sections of the community. The public outreach tools and methods might change depending on the section being covered (city vs. neighborhood level). The reasons for low public participation are; people are too busy, belief that their participation and input wouldn't make a difference to the project, and the "technological transformation of leisure" (Lynott, 2000).

Citizens show lesser interest to participate in regional and corridor planning, as the results of their efforts will not be visible for years. At this early planning stage, the dominance of interest groups is relevant and they tend to manipulate and re-direct efforts in their favor. So, special attention has to be paid to such scenarios and changes made to the planning phases that would result in proper decision-making.

Citizens typically get involved most actively in the design phase when projects affect their property values and neighborhoods directly (Lynott, 2000). The challenge at this stage of

the project is to get the public interests to the table so that mobility interests can be balanced with neighborhood interests.

Consensus is generally difficult to achieve in the planning phases than in the design due to the preponderance of value-oriented discussions and numerous stakeholders. As projects move to design, the site-specific geographic boundaries focus discussions on more tangible, less value-driven outcomes. However, many of the public involvement techniques can be involved with the various phases of the project with modifications made to few of the techniques to overcome the challenges unique to a particular project.

4. Quantitative Measures to Gauge Public Trust.

The public expects to receive accurate, good, straight forward, and concise project information in a good period of time from the concerned authorities. Public trust can be measured by conducting public opinion surveys. These surveys should be conducted every year to judge the public trend and their responses. Surveys should be conducted at the end of every phase and at the end of the project with businesses, media, and local government to assess the progress and job done by the project authorities.

Public meetings and business seminars should be conducted. These meetings should aid in responding to the questions raised by public. A public information hotline, website, and some flyers consisting project information has to be delivered to the businesses and homes.

During the project life cycle, measures have to be taken to evaluate the effectiveness of various communication channels and their impact on public involvement. By doing so, the PI team will be able to –

- Track public opinion on the progress of the project.

- Judge the effectiveness of various communication channels and make changes to them if necessary.
- Judge the changing stakeholder needs and come up with ideas to mitigate them and prevent future inconveniences through better public information efforts.
- Gather a general opinion of the project on how the public involvement efforts have played a role in creating a positive impact on the project.

One can track the effect of communication channels on projects by conducting (Strategic Plan, 2001) –

- Large-scale telephone surveys
- Series of focus groups with each stakeholder group
- One-on-one interview with key stakeholders, both among the general public, the media and the owner and contractor teams.
- By asking the participants to fill out an assessment form to determine the success of the project and to identify the strengths and areas of improvements if any.

Some less formal, qualitative research results can be gathered through some of the normal day-to-day public information activities, which includes community forums, web-site feedback, project hotline feedback and general comment tracking (Strategic Plan, 2001).

Public trust can be measured by the –

- Tone or content of feedback
- By attendance (or lack of) at meetings
- Demonstrations (or lack of)
- Media portrayal of the project and team (either the public is unhappy and the media catches it or the media starts it and the public largely believes it)

- Response rate to surveys (people having low trust will tend to ignore them)
- Various community behaviors (for example, do the people make more use of the car-pooling programs once offered? Do they follow instructions given to them?)

B. Market Segmentation and Positional Analysis

1. Market Segmentation

Promoting a mega project within its market segment requires diligence and planning from a network of partners representing the community and industry. The network of partners within the marketing campaign to promote public trust and confidence will ultimately consist of government officials, contractors, engineers, designers, architects, administrators, suppliers, crafts people, policymakers, and community members, all creating synergy so that the goals of both the public and the industry are met. One of the first steps in marketing a mega project involves identifying the group(s) that will benefit the most from the overall planning and construction process of the project. This involves learning about the market segments that will be served most effectively. A market segment consists of a large identifiable group with common attributes such as similar wants, geographical location, attitudes and habits (Kotler, 2000). When pinpointing relevant segments, it is important to examine the levels of segmentation, such as patterns of segmentation, market-segmentation procedures, and bases for segmenting markets.

2. Patterns of Market Segmentation

Examining patterns of segmentation identifies the type of group preference in a given segment. A mega project's campaign will want to consider the homogeneous preferences approach when identify a market segmentation. For example, in identifying the preferences of

individual groups within a mega project, creating a list of stakeholders and organizing their relationship is useful.

Community Segment

- Schools
- Civic Organizations
- Property Owners
- Area Residents

Business Segment

- Area Businesses
- Employees
- Suppliers/Delivery Services
- Local & regional governments

  Public services and facilities

Traveling Public Segment

- Commuters
- Motorists
- Tourism
- Public Transportation

Each of these segments in their own significant way is important in the overall marketing effort of a mega project. The breakdown and grouping of the segments can identify how best to target the market segment and promote public trust and confidence to each particular group. The marketing strategy needs to identify what factors play an important role in marketing to the each segment: community segment, the business segment, and the traveling public segment.

3. Market-Segmentation Procedures

There are several effective procedures that can be used to identify market segments for mega project market initiatives, such as surveys, analysis, and profiling. These steps will help in the strategic marketing process of identifying the objectives, i.e. marketing opportunities, positioning of product and services, and setting quantitative goals (Brock, et al., 1996).

Table 1. Effective Procedures to Identify Market Segments

Survey Stage	Analysis	Profiling
Researchers conduct exploratory interviews relating to transportation and construction issues to gain insight into the segment group's attitudes, motivations, and behavior. The researcher prepares a questionnaire and collects data on attributes of the product or service.	The researcher applies factor analysis to the data to remove highly correlated variables built on the implementation of the project's relevant issues. It then applies cluster analysis to create a specified number of maximally different segments.	The researcher creates a profile establishing a summary of the history, preset conditions, and anticipated future of an area. It provides an overview or series of snapshots of the area and is used as a basis for identifying potential impacts of a proposed transportation action.

4. Bases for Segmenting Markets

The bases for market segmentation in a mega project deals explicitly with understanding the profile of the effected groups. This would involve researching the profile of the community segment, the business segment, and the traveling public segment. Breaking down the population and demographic characteristics; the economic and social history characteristics; and the physical characteristics is important (Brock, et al., 1996). Since the development and implementation of a mega project involves a significant impact on all the stakeholders involved

in the process, care and attention must go into understanding the type of effects that the project will have on the environment and also understanding how each proliferate group will be affected by the whole process. This is where examining the major segmentation variables is essential, such as:

Population and Demographic Characteristic

- Trends in population growth and demographics
- Ethnicity and race
- Age and gender distributions
- Income level
- Educational attainment
- Employment status

Economic and Social History Characteristics

- Community historical background and context
- Community values and issues
- Property values
- Tax base

Physical Characteristics Relating to Community Activities

- Land-use plans and zoning
- Future development goals
- Community focal points and meeting places (e.g. playgrounds, parks, churches)
- Infrastructures (e.g. water and sewage systems)

This market segmentation analysis phase plays an important role in formalizing how best to market the attributes most significant to the public's needs. For instance, identifying the

concepts that are important to the business segment and understanding why it is important is a valuable tool. A marketing scheme can be created to outline all the components significant to that business group. Whereas, identifying the concepts that are important to the community is just as useful in understanding that community's needs. In the past, the consequences of transportation investments on the market segments involved have often been ignored or introduced near the end of the planning stage. By introducing the proposed marketing tools in the overall marketing plan, the developers, architects, and planners can effectively use the segmentation analysis to create a plan optimum to the public's goals.

5. Positional Analysis

Positioning is the act of designing an offering and image to occupy a distinctive place in the target market's mind. Because mega projects are specialized in market segmentation, positioning a mega project is unique and not typical of most commercial marketing campaigns and positional analysis strategies. One way to create a successful positioning strategy in a mega project marketing campaign is to highlight the benefits, needs, and solutions of the improved roadway. By defining the need for the project, the public is able to perceive the project as an identifiable concept, which gives the marketing campaign a sustainable advantage in its public- and community-relations objectives. Promoting a marketing strategy before the public is prudent to the success of the overall project. How the project is seen in the beginning, middle, and end stages is what eventually creates added value and customer appreciation. One of the goals of the campaign will be to increase awareness of the effects of transportation actions on the human environment and emphasize that impacts deserve serious attention in the project planning and development stages.

Finding the right attribute to promote in the positioning process is key to the success of the whole marketing scheme. This involves understanding the needs and the wants of the project from the public. At this stage of the marketing process, significant segmentation research and market analysis should have already been conducted, thereby giving the marketing campaign relevant material on the groups that will be affected by the mega project initiative. In the case of the community segment, business segment, and the traveling public segment, the focus will be on how to satisfy and meet the needs of the community during the construction process. How will the quality of life be affected? Again, each segment will have different expectations and will need to be differentiated. This is the difference that delivers a highly valued benefit to a sufficient number of people. When analyzing how the impact of the project will affect the existing structure and life of the people, which is ultimately how solutions will be proposed, it is good to keep in mind the following guideline:

- Be cognizant of both positive and negative impacts.
- Consider both temporary and long-term impacts as well as secondary and cumulative effects.
- Keep the stakeholders goals in mind when identifying impacts.
- Recognize the public's perception of impact. If the public identifies issues, then review and research the particular issues (Brock, et al., 1996, p.5).

Understanding what is the perceived impact on the quality of life can help in creating the final solutions and positioning the project in such a way it can overcome negative issues associated with previous mega projects in the public's eye. Distinguish the impact categories when deciding on the type of problems that can be significant in the scope of the project. The

impact categories can sometimes be used for each of the market segments in the plan, or the categories can be developed specifically for each segment's situation (Brock, et al., 1996).

Table 2. Community Impact Segmentation

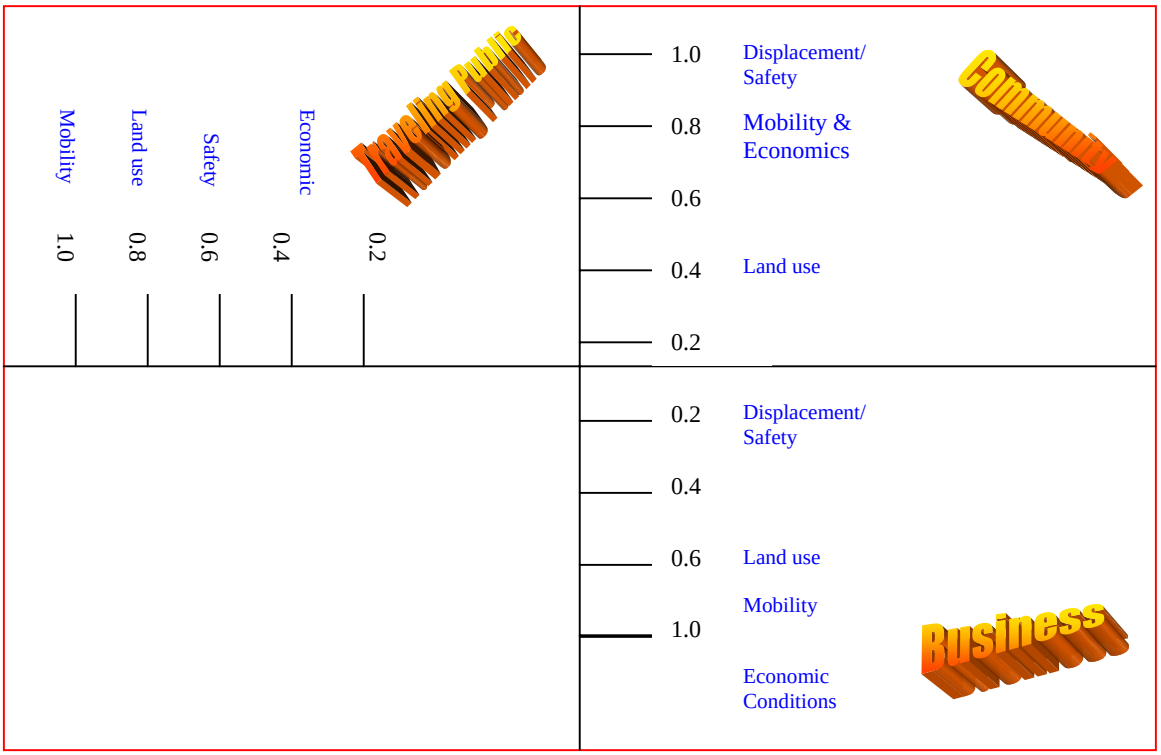
	Economic Conditions	Mobility and Access	Land Use	Displacement and Safety
Community/Traveling Public/Businesses	Business and Employment Impact	Pedestrian and Bicycle Access	Land-Use Patterns	Effect on Neighborhoods
Traveling Public/ Businesses	Short-term Impact	Public Transportation	Compatibility with Plans	Residential Displacement
Businesses/Community/ Traveling Public	Business Visibility	Vehicular Access	Use of Public Facilities	Pedestrian and Bicycle Safety
Community/Business	Tax Base			Crime
Community	Property Values			Emergency Response
Community/Traveling Public				Displacement of Public Facilities

Some of the issues to study based on the level of impact includes "Land Use" and how the construction process would affect farmland, the environment's eco system, or will it have adverse affect on changes in land use and density. In the "Economic Conditions" category, issues that may be relevant are: Will the proposed action encourage businesses to move to other areas or close? How will the local economy be affected by the construction activity? Or homeowners may want to know what the effect of the project will be on increased or decreased property values. In regards to "Mobility and Access," there may be concerns with how the project affects

non-motorist access to businesses, public services, schools, and other facilities and how will the project affect access to public transportation. These are all adequate questions that will be posed by concerned citizens. And finding the solutions and communicating those solutions effectively is all part of the overall marketing strategy. Once questions have been raised and solutions have been resolved, the mega project can be positioned in a proper arena to promote the goals and objectives.

A way of measuring issues in the positioning stage deemed high in priority, which could be shown by creating a perceptual map. This could also help outline the focus of the marketing plan. A perceptual map is a statistical analysis used to find out what the most important attributes are, or in the case of a mega project, issues relevant to the identifiable segments involved. The measurements involved in the map places the most weight at 1.0 and the least significant weight at 0.2. The scale model demonstrates how certain factors can be rated.

Figure 1. Marketing Positioning Perceptual Map



Market segmentation and positioning analysis are part of the procedures that help identify impact assessment processes, which involve problem-solving and generating solutions. Developing the impact assessment that responds to the public's concerns is one of the most important steps in the marketing strategy. There are four primary methods for dealing with how the mega project will impact the public (Brock, et al., 1996). Shown below are examples of specific solutions that can address a particular market segment's concerns.

Avoidance – Do not apply so an impact does not occur.

- Change an alignment so that there are no displacements.
- Redesign a road plan to avoid cutting off access to a facility.

Minimization – Modify the project to reduce the severity of an impact.

- Reroute or shift a highway plan to reduce displacements.
- Limit interchanges to minimize incompatible land-use development.
- Alter an alignment to increase distance between destinations and minimize noise.

Mitigation – Undertake an action to alleviate or offset an impact so that it replaces resources.

- Set aside land for a park or add to public recreation areas to replace lost facilities.
- Erect sound barriers to mitigate noise to surrounding communities.
- Provide pedestrians or bicyclist properties overpass or underpass to travel.
- Provide compensation for properties acquired (a mandatory measure under the Uniform Act Amendments).

Enhancement – Create attractive features for the project that fit within the environment.

- Provide dedicated plaques to recognize specific cultural or historic resources.
- Develop bike trails or hiking paths adjacent to roadways.

- Plant trees and add park benches.
- Add public artwork or façade to transportation facilities to match aesthetic design and beautification projects.

Although, project design options are typically based on engineering standards, the marketing process of mega projects is to understand the relevance of integrating the concerns and issues from the inception of the project. The public's involvement is playing a critical role in their support for the project. A consensus on the qualities of projects and the characteristics of the highway development process can integrate transportation facilities with communities and the environment.

C. Promoting Mega Projects

Projects are classified, as mega projects only when there is a dire need of it, as they involve a lot of research, time and money. From its conception to its completion it could take over a decade. Mega projects get their funds from Federal Highway funds, Congress and from the respective State Departments of Transportation.

D. Marketing Control and Evaluation Methodologies

As the project proceeds through its life cycle, the communication methods used in the beginning might not be pertinent anymore and so are required to be updated for effective communication. The PI team should constantly monitor and oversee the communication plan to achieve the anticipated goal. The PI team should (Strategic Plan, 2001) –

- Track stakeholder opinion
- Assess the effectiveness of communication efforts and tactics
- Track economic impact
- Pre-test campaign messages and materials

- Provide platforms for constant consumer input

The public expects to receive accurate and concise information from the project officials and have no interest in frivolous government spending on various advertising campaigns. Informational advertisements on television would be preferred over "feel good" campaigns. The SATCH advertising campaign started by the Utah Department of Transportation (UDOT) for the I-15 project was a failure as it was a "feel good" campaign as opposed to an informational one. The regional public disliked it and the officials received a lot of negative feedback from them. This advertising campaign was halted immediately and from then on only the informational (project-related) advertisements were televised.

It is important to involve the public in the project at the beginning of the planning stage. During the Woodrow Wilson Bridge (WWB) planning stage, there was information gathered concerning whether a draw-type bridge would be desirable versus other types of bridges, such as a span bridge. Out of the public response of over 350 ideas, the main alternatives were delineated and then examined. Those ideas formed the basis for creating the proposals leading to the creation of the drawbridge that is currently under construction.

One of the ways to involve public is through meetings that could be like the town hall meetings, which are typically very informal. They give out more general information to the public than specifics. The meetings could be conducted close to the neighborhood so that they are at a walk able distance to the public. Public can be informed about the meetings through flyers in the mail. The basic concepts of the plan could be discussed and public can be asked to opine on the same. Open Houses can be another form of meeting to gather public opinion. For the Woodrow Wilson Bridge project, FHWA was the leading agency for the open houses along

with two other contractors. Public attendance at the open houses will be driven by the topic. After the meetings, surveys should be mailed out to the public to check their satisfaction levels.

The construction office location could have exhibits on walls, physical models, and 3D models that could be changed if need be as physical models are more static and cumbersome to change. These offices can remain open to the public on few days of the week for walk through traffic. Handouts with project logos can be given out to the public to increase their project awareness. It is important to have a great facilitator to facilitate things and resolve public raised issues immediately.

The committee dealing with the public must be very reactive, more proactive, more engaging and more responsive, and involved with the public. There could be one person or a group of knowledgeable people assigned to respond to the public calls that come through the telephone or the website. They could be answering the phone calls to give out precise project specific information. Email messages can be sent out to the public with project updates.

Stakeholder participation is very important in the whole process. It is important to identify stakeholders beforehand itself and involve them in all the stages of the project. The WWB had four stakeholder participation panels in their design phase. Each of these panels consisted of members from various communities like the ADA, disability, bicyclist, minority, elected officials etc. Each panel had about 15 to 20 members and one PR person. Depending on what the topic was at the time, the appropriate people were there to respond to concerns. They agree on the charter and met twice every month. They had about 90% of their panel member participation in their meetings.

Business Review

A. Current and Past Projects, Issues and Problems

In a recent interview with the UMUC Study Team (February 11, 2004), the FHWA Major Projects group identified some projects that have been able to sustain a high level of public trust and confidence, such as the Denver Transportation Regional Expansion (T-REX) project and the Woodrow Wilson Bridge (WWB) project. The Central Artery project, also known as the "Big Dig" in Boston, has been identified as a project with a less than successful level of public trust and confidence. Although a much smaller project, the Springfield Virginia Interchange project was also cited as a project that is less than successful in handling the public. Does this mean that the so-called successful projects have done everything right? This study indicates that is not the case. There are varying opinions about what is working and what is not working from different partners involved in the projects.

Mr. Thomas Sorel, the FHWA Major Projects Group Leader in a March 11, 2004 interview, remarked that a mega project could last as long as 20 years and the need to focus on the project life cycle that includes the planning, environmental, design and construction, and operations stages.

- Planning stage – This is the introductory and conceptual stage, with public meetings that discuss design and construction aspects, but not public involvement for the project.
- Environmental stage – This is where you begin to see public outreach when reviews are conducted on impact studies, wetlands, etc.

- Design and Construction stage – This is where the FHWA seems to lose touch with the community and where there needs to be a focus on the proposal activity. Public trust starts to shift as this stage.
- Operations stage – This is where post-construction maintenance and potential for improvements on designs/construction exist.

B. Lessons learned, things that worked

T-REX

1. Setting the Right Goals

T-REX set reasonable goals early on in the project.

- Minimize inconvenience to the public
- Stay within the project's $1.67 billion budget
- Design and construct a quality project
- Complete the project on or before June 2008

It was no accident that the first goal was putting the community first. While cost, schedule and quality are all very important – T-REX recognized early on that goals are meaningless if the project brings the metro area commuter traffic to a standstill. They also realized that the most effective way to handle the number one goal "to minimize inconvenience to the community, motorists and the public" is through extensive communications. There's no denying that construction activity affects traffic, but T-REX does their best to make it as painless as possible.

T-REX dedicated itself to address public information issues through the life of the project, not just at the planning stage. The SECC Public Information Plan (Section 1.8.2 Public

Information Role Definition) defined this role: "The contractor's public information staff will deal with coping issues throughout the life of the project. For example, road or lane closures cut through traffic issues, traffic delays, business access, commercial vehicle restrictions and emergency response agency issues."

2. Construction - Design Build

According to the T-REX Fact Book (2004), the majority of the T-REX project is being constructed using the design-build delivery method. Design-build allows for a single contractor team to design and build the entire project for a predetermined price, under the oversight of Colorado Department of Transportation (CDOT) and the Denver Regional Transit District (RTD). If the traditional design-bid build approach was utilized, this large and complex project could take 20 years or more to build. In a traditional approach, the design plans would be completed first, and then contractors would bid on and build sections one at a time. This type of arrangement does not allow for fluid direction and control when obstacles and changes are eminent. Above all, it allows for little public input.

With the selected contractor Southeast Corridor Constructors (SECC), the design-build approach created a faster and less expensive project, with many opportunities for innovation. Another benefit is that it is somewhat open ended and more easily allows for public input and possible mitigation and therefore public acceptance and buy-in. CDOT and RTD provided preliminary engineering design and requirements as part of the Request for Proposal. Southeast Corridors Constructors (SECC), the design-build contractor, used the preliminary plans to complete the design. Construction and design now take place simultaneously. For example, SECC can demolish a bridge and order construction materials, while completing the final design for the new bridge structure. Examples of previously successful design-build construction

include the Hudson-Bergen Light Rail Line in New Jersey, the Foothills Transportation Corridor in Santa Ana, Calif., the Alameda Transportation Corridor in Los Angeles, the E-470 toll road in Denver and the I-15 reconstruction project in Salt Lake City.

3. Branding

Figure 2. T-REX logo

To minimize the possibility for the media or special interests to provide terminology that can be less than flattering to a project, the T-REX project used a "branding" strategy that provided a moniker or handle the public could easily remember and associate with the project. The Southeast Corridor Public Information Plan (n.d., Section 1.8.1.1.1 Strategies) for T-REX made branding preeminent for one of the three objectives: "To brand the project in a manner, which will resonate with the community as a project with which they can identify and understand its benefits. The T-REX name was well thought out before the project was even underway that helped to provide a catchy name the public could use before they thought of one themselves that could be a lot more negative. Additionally, the logo (Source: http://www.trexproject.com) was provided to the media even before the contractor was selected. It also helped the public identify with it and kept other negative type of images from being likely to replace it.

4. PR Staffing

The T-REX Public Information Team and representatives from SECC (contractor) public information staff work together as a single unit to assure consistency of communication and approaches. The T-REX PI team provides the oversight and communicates the broader

construction picture and long term philosophies, as well as the vision and progress issues raised by the public, media, government officials, business owners, etc. However, the SECC PI team deals with the day-to-day "coping" issues for the public. They address issues with road/lane closures and other traffic issues as well as commercial vehicle restrictions and emergency response agency issues. Together, the T-REX and SECC PI Teams convey the following strategies:

- Communications Framework - identifying all stakeholders, projects, types of communication key messages, a timeline for detailing deadlines for communicating with stakeholders and methods of communication
- Crisis Communication Plan – to detail response mechanisms for dealing with any incident that could adversely impact stakeholders or the project.
- Data Collection and Management Plan – to gather information during the construction for the purpose of informing the various stakeholders and the general public.
- Stakeholders Impact Mitigation Plan – To address the public information mitigation requirements outlined in the Record of Decision for the Environmental Impact Statement.

Co-location of the staff of PR persons that are involved with the project cited as an important factor in helping to keep communications with the media and public accurate and consistent. SECC and the Transportation Expansion Project team are co-located in several buildings along the project. Engineers, designers and other staff members from the contractor's team and the T-REX Project team shared office space throughout the life of the project. This

facilitates better communication and faster problem solving and conflict resolution. The PR staff of CDOT and SECC is also in the same location that allowed for face-to-face communications.

C. Lessons learned, things that didn't work

Central Artery

1. Setting the Right Goals

In a February 24, 2004, interview with the University of Maryland University College (UMUC) Study Team, Carl Gotschall, the Central Artery Tunnel (CA/T) Project Administrator indicated the Massachusetts Highway Department started the Central Artery project in 1982 – but was not properly prepared and somewhat overwhelmed by the complexity of the task. Performance measures went awry at first and were not handled right. Consultant groups were hired, but they lacked the experience to correctly manage the situation as well. The CA/T was not forthcoming about projecting the scope of the project and informing the public of what obstacles had to be overcome. At one point the project was sold as the solution to fix everyone's problems. One website, the History Channel.com (retrieved April 21, 2004), cites that the original elevated six-lane highway, known as the Central Artery, was built in the 1950s as a state highway that ran through the center of downtown Boston. Homes and businesses were demolished to make way for the highway, displacing more than 20,000 residents. The highway had no breakdown lanes, too many sharp curves, and too many points of access and exit. The structure of the artery created a 40-foot-high divide between Boston's North End and the downtown commercial and financial districts.

Even before it was finished, officials realized that the artery was a mistake and halted construction to study the best way to complete it. Eventually, the last leg of the artery was turned

into a tunnel. The artery was quickly choked beyond capacity. Today, traffic sits at a standstill for up to ten hours a day, making it one of America's most congested highways.

2. Construction - Public Involvement and Truthfulness

To try and find a solution to the worsening traffic condition in late 1969, the Boston Traffic Commissioner pursued the idea of widening the tunnels that fed the Central Artery. By 1982, the planning started for the Big Dig and funding first came available by 1987. Construction began in 1991 and by 1995 the first milestone for the Big Dig, the Ted Williams tunnel, was completed. Today, Boston's Big Dig is the most complex and expensive highway project ever undertaken in the United States. The city is replacing an outdated highway infrastructure with a new state-of-the-art highway system, most of which will be underground or underwater. The re-estimated eighteen-year, eleven-billion-dollar project consists of two major components: the new eight-to-ten-lane underground expressway and the extension of I-90 (the Massachusetts Turnpike) from its current end-point south of downtown Boston, through the Ted Williams Tunnel, to Logan Airport. Five major new highway interchanges and a two-bridge crossing of the Charles River are also being built. When it is completed, the Big Dig (officially known as the Central Artery/Tunnel Project) will reconnect downtown Boston with its waterfront neighborhoods and the historic North End.

Although the Massachusetts Highway Department (MHD) is the nominal recipient of federal-aid highway funds, state legislation in 1997 creating the Metropolitan Highway System transferred responsibility for the CA/T Project from the MHD to the Massachusetts Turnpike Authority (MTA). The state's CA/T Project Management Team is a blend of MTA staff and personnel representing Bechtel/Parsons-Brinckerhoff (B/PB), the joint venture overseeing day-to-day operations. In all there were over 50 turnpike employees working

with over 1,100 venture employees and over 5, 000 other employees working at the same time. This approach, combining the two entities to form an integrated team, may have assisted in the delivery of the CA/T Project, but also contributed to problems in oversight at the federal and state levels and raises serious questions about the acceptability of such private/public management teams. Misplaced public trust occurred in early 2000, when the Division Administrator did not take steps to correct financial irregularities, resulting in embarrassment to the FHWA and a loss of public trust and confidence.

Since 1916, the FHWA has developed a long history of relying on a strong federal/state partnership in carrying out its oversight role. FHWA's oversight approach to state transportation is through developing relationships based on mutual trust, fairness, respect, cooperation, and communication. Although the FHWA makes federal-aid highway funds available to the States, each state is responsible for managing and developing its projects, subject to federal oversight. According to a Federal Task Force on the Boston CA/T Project, the FHWA's long history of strong federal/state partnerships failed. On the one hand, the FHWA failed to maintain an independent enough relationship with the state to adequately fulfill its oversight role. On the other hand, the state breached its trust with the FHWA and others by intentionally withholding knowledge of the project's potential cost overrun.

As reported in the Federal Highway Administration Federal Task Force on the Central Artery/Tunnel in early 2000, the Chairman of the Massachusetts Turnpike Authority (MTA) had reported to the FHWA a total cost of the CA/T project as $10.8 billion. Later in the same day the MTA informed the media of a potential $1.4 billion cost overrun, bringing the total CA/T Project cost to $12.2 billion. The MTA Chairman informed the Task Force that he acted in response to an anticipated inaccurate press account of cost exposures expected later that week. According to

the FHWA Division Administrator, the state had not directly forewarned the FHWA of a potential cost overrun of such magnitude in any document provided to the Division Office, in the Plan, or in discussions prior to the conditional acceptance of the Plan.

The Central Artery was not realistic when the first $2.6 billion funding was approved. Now the budget for the Big Dig is approaching over $14.6 billion. Just accounting for inflation from 1982 could account for several billion dollars, according to Carl Gottschall, the Project Administrator. Also, cost overruns were not accounted for. For example, the environmental costs were not estimated correctly as the following examples indicate:

- Mufflers on construction equipment to contain noise
- Air conditioning provided for some buildings because the windows had to stay closed to keep noise out. Some windows were replaced as well for poor insulation.
- Commitments to keep traffic moving in the city
- The time of day construction takes place
- Vibration concerns – even some bedsprings had to be replaced.

3. Branding

Even today, the moniker of "Big Dig" does little to convey a sense that this project is something to be proud of. To most, the term has replaced the "Central Artery/Tunnel." One report from the Boston Forum (2000) titled "Boston's Money Pit, the Big Dig" has less than favorable remarks that cites the enormous cost of the Big Dig could take as many as 50 years to pay back, with the responsibility resting squarely with the commuter and other taxpayers. The branding of the Central Artery is evident, as it has become synonymous with the Big Dig.

4. PR Staffing

Having an adequate and proactive PR staff is essential, but is still not always forefront in the projects' goals. The FHWA takes the lead in oversight for PR staffing, but there is some cause for concern. The state DOTs mainly control the project and provide for the PR staffing. However, some DOT PR staffs can fall victim to the following:

- Inadequate personnel
- Lack of funding
- Poor communication with the public, media, or other PR partners
- Not being proactive with the public, media, or other PR partners

In an April 8, 2004 interview with the UMUC Study Team, Rick Capca, the FHWA Deputy Administrator, considered the public relations staffing at the Central Artery adequate to the job. However, in a separate interview with the Central Artery Project Administrator Carl Gotschall in February 2004, it was brought out that the PR staffing is much less than for example the T-REX project, and that the press was handled very poorly. The public relations staff is not proactive as it should be. For example even now, in the midst of a public concern for a bulging $14.6 billion budget, when detours have to be made, there is no convention utilized to alert the public.

Some projects labeled as successful in handling the public, can actually be teetering towards problems. The Woodrow Wilson Bridge (WWB) project just has two full time PR staff members and two part time staff members to handle all the media and public relations. Even though some established DOT guidelines suggest that the DOT should take the lead in public relations, the WWB public relations staffing for DOT is not represented. Although not now seen as a daunting task, the potential to be overwhelmed can be seen, as demonstrated in a March,

2004 media blitz concerning falling ceilings for an apartment complex called Hunting Terrace, located adjacent to the bridge construction. In this case, the residents of this complex were told to move out within 2 days so that the contractor can survey the situation and make repairs. As it turns out, the PR staff was unaware of that decision. The residents were outraged and the incident made the 6 o'clock evening news. The residents were later well compensated and given 2 weeks notice so that repairs could be made. The Virginia Department of Transportation (VDOT) has now provided a liaison figurehead to help coordinate issues specific to that problem. Although things are going well now, in an interview with Ms. Noreen Walker, the Communities Relation – Construction Point of Contact person, it was pointed out that there is not really the staff to do comprehensive evaluations of consumer complaints and there was not an adequate fund to help with a better website for public information.

Public Involvement at Stages of the Project

A. Planning stage

For mega projects, planning for public involvement does not start at the beginning of the project Notice to Proceed or at the writing of the Request for Proposal. Before those events take place, a considerable amount of research needs to be performed in community impact assessments, and how public needs and awareness are met throughout the life of the project. This information is not only relevant to assess actual public needs, but is relevant to plan how the project should fund, assign, organize, and coordinate their public relations staff. This is not limited to the staff of the DOT, but also to the other partners that can be involved. For example, the Colorado Department of Transportation involved with the Denver Transportation Regional Extension (T-REX) project coordinates with the PR staff of the Colorado Regional

Transportation District (RTD), and with the project owner (Southeast Corridors Construction). In an interview with Ron Clark of the UMUC Study Team on March 5, 2004, Ms. Toni Gatzen, the Colorado Department of Transportation Public Information (PI) person for the T-REX, indicated that setting a goal early through careful market research is essential. For the TREX project, the number one goal was "minimizing inconvenience to the public." T-REX has been very successful so far due to the amount of planning that was performed to ascertain what public issues the project would face and how problems would be minimized.

The T-REX project recognized a reasonable budget was necessary and established funding in the budget early on in the planning stage for an independent contractor to handle public relations in cooperation with the Colorado State DOT (CDOT). In an interview with Ron Clark on February 11, 2004, Mr. Craig Actis, of the T-REX public information staff, related how the contractor went out to meet the neighborhood groups and local politicians to obtain information about the citizens' desires into the project. Instrumental to planning an appropriate public relations budget was the research performed by independent consultants that reviewed other projects that were successful in handling public concerns. One such project was the Salt Lake City project in Utah. This project effectively established a PR plan that was made part of the Request for Proposal in the contract. This made public relations a responsibility to uphold by the winning contractor.

Public involvement can serve as a source of information to identify community values and needs, to explore the importance of community facilities and resources, to identify those facilities not previously noted, and to validate information collected from other sources.

Table 3. What are some data sources? (Source: http://www.ciatrans.net/CHAP4.html)

Source	Contact Points	Primary Uses

Metropolitan Planning Organizations (MPOs)	Economic base, land-use and zoning plans, and area planning history
State and local government planning and social service departments/agencies	Economic base, land-use and zoning plans, taxing districts, social and economic programs, and business and marketing information
State employment agencies or labor departments	Employment trends, unemployment rates, and economic base
State, local, and university libraries (for local newspaper clippings and other local sources)	General information, community historical background, economic base, and business and marketing information
Local historical societies and State Historic Preservation Officer (SHPO)	Community historical background, and location of historic structures, landmarks, and districts
Other relevant data collection organizations, such as Chambers of Commerce, religious institutions, American Automobile Association (AAA), Meals-on-Wheels, American Association of Retired Persons (AARP), social agencies, and other associations.	Special populations and needs, businesses, community issues, etc.

Table 4. What data should be requested?

Data Collections and Activities	
Source	**Primary Uses**
Census Bureau publications and statistical abstracts	Population trends and demographics, economic indicators, and housing
Aerial maps and road maps	Community boundaries and physical characteristics; location of activity centers, infrastructure, houses and businesses
Field or windshield surveys and reviews	Locations and numbers of structures, and activity patterns
Yellow Pages or city directories	Businesses and community facility locations and type
Dun and Bradstreet (D&B) databases	Business location, type, and number of employees
Donnelley Directory (available on CD-ROM)	Business location, type, and number of employees
Tax records	Property values
Building-permit records	Approved or built development
Real estate market surveys, regional real estate journals, and interviews with realtors	Housing prices, trends in sales, age or characteristics of structures, and neighborhood compositions
Interviews and public involvement with businesses, community leaders, and residents	Community values and issues

As part of the planning stage, it is also important to perform a community impact assessment. Not knowing the concerns of the public can have a detrimental affect that can be carried throughout the project. It is important to get community buy-in early to develop the

necessary public trust. It then becomes just as important to stay in touch with the community to sustain a good level of trust and confidence.

One guide (Brock, et. al., 1996) prepared for transportation professionals to help determine the community impact for transportation projects is the "Community Impact Assessment: A Quick Reference for Transportation." This guide was written as a "[...] quick primer for transportation professionals and analysts who assess the impacts of proposed transportation actions on communities." It outlines the community impact assessment process, highlights critical areas that must be examined, identifies basic tools and information sources, and stimulates the thought-process related to individual projects. There are both practical and legal reasons for assessing community impact as indicated in the table below.

Table 5. Practical and Legal Reasons for Assessing Community Impact

Practical Reasons	Legal Reasons
Quality of Life: A high-quality standard of living for all American means we must protect the essential elements of existence, including neighborhoods and community values. The assessment of community impacts supports sustainable, livable communities; promotes community values and thriving neighborhoods; and contributes to general well being.	**Legal Backing -- What are the legal requirements and guidance?** In addition to the practical reasons for community impact assessment, it is legally required and supported by major federal regulations, statutes, policies, technical advisories and Executive Orders, including: • Inter modal Surface Transportations Efficiency Act of 1991 (ISTEA) • National Environmental Policy Act of 1969 (NEPA) • Title VI of the Civil Rights Act of 1964 and related statutes • 23 USC 109(h), Federal-Aid Highway Act of 1970 • 23 CFR 771, Environmental Impact and Related Procedures (1987) • TA 6640.8A (1987), Guidance for Preparing
Responsive Decision Making: The assessment of community impacts helps ensure that transportation policies and investments embrace the concerns of neighborhoods, communities, and society as a whole. Understanding the relationship between transportation actions and community life leads to conflict minimization and the resolution of potential problems. Active involvement of affected parties leads to better decisions and greater acceptance of projects, while creating a sense of community ownership and enhancing agency credibility.	

Coordination: Community impact assessment helps coordinate and integrate independent plans for land use, economics, and transportation to achieve common goals. This process helps communities meet state and local regulations and policies, such as zoning ordinances, environmental quality regulations, growth management and adequate facilities legislation, and comprehensive planning.	and Processing Environmental and Section 4(f) Documents • Executive Order (EO) 12898 on Environmental Justice (1994) and proposed Department of Transportation Order on Environmental Justice (1996) • Farmland Protection Policy Act (1981), as amended in 1994 (7 CFR 658) • Uniform Relocation Assistance and Real Property Acquisition Policies Act (1970, referred to as the "Uniform Act,") as amended in 1987 • FHWA Environmental Policy Statements (1990 & 1994) • Recommendations of the President's Council on Sustainable Development
Nondiscrimination: Community impact assessment ensures that we act on our obligation to achieve environmental justice through practices and procedures that do not discriminate. It alerts decision makers to the effects on all segments of society and the potential for disproportionately high adverse effects on specific populations.	

The following table includes examples of the types of impacts that might be identified and analyzed. The inquiries under the impact categories highlight some of the relevant questions to answer to understand how the proposed action affects the community. This is an iterative process. Analysts will need to return to the community profile to obtain detailed information about the proposed project and to collect additional data about the community in order to answer the questions posed. The questions in this table should lead to others based on the specific circumstances of the project.

Table 6. What questions help identify community impacts?

Impact Category		
Social and Psychological Aspects	**Physical Aspects**	**Visual Environment**
Changes in Population Will the project cause redistribution of the populations or an influx or loss of population?	**Barrier Effect** Is a wall or barrier effect created (such as from noise walls or fencing)?	**Aesthetics** Will the community's aesthetic character be changed?
Community Cohesion and Interaction	**Sounds** Will noise or vibration increase?	**Compatibility with Plans** Is the project consistent with local land use plans and zoning?

How will the project affect interaction among persons and groups? How will it change social relationships and patterns? **Isolation** Will certain people be separated or set apart from others? **Social Values** Will the project cause a change in social values? **Quality of Life** What is the perceived impact on quality of life?	**Other Physical Intrusions** Will dust or odor increase? Will there be a shadowing effect on property?	

Impact Category (Continued)		
Land Use	**Economic Conditions**	**Mobility and Access**
Land-Use Patterns Will there be loss of farmland? Does it open new areas for development? Will it induce changes in land use and density? What changes might be expected? **Compatibility with Plans** Is the project consistent with local land use plans and zoning?	**Business and Employment Impacts** Will the proposed action encourage businesses to move to the area, relocate to other locations within the area, close, or move outside the area? **Short-term Impacts** How is the local economy affected by construction activities? Are there both positive (jobs generated) and negative (detours and loss of access) impacts? **Business Visibility** Will the proposed action alter business visibility to traffic-based businesses? How will visibility and access changes alter business activity? **Tax Base** What is the effect on the tax base (from taxable property removed from base, changes in property values, changes in business activity)? **Property Values** What is the likely effect on property values caused by relocations or change in land use?	**Pedestrian and Bicycle Access** How does the project affect non-motorist access to businesses, public services, schools, and other facilities? Does the project impede or enhance access between residences and community facilities and businesses? Does it shift traffic? **Public Transportation** How does the project affect access to public transportation? **Vehicular Access** How does the project affect short- and long-term vehicular access to businesses, public services, and other facilities? Does it affect parking availability?

Impact Category (Continued)		
Provision of Public Services	**Safety**	**Displacement**
Use of Public Facilities Will the proposed action lead to or help alleviate overcrowding of public facilities (i.e., schools and recreation facilities)? **Displacement of Public Facilities** Will the project result in relocation or displacement of public facilities or community centers (e.g., places of worship)?	**Pedestrian and Bicycle Safety** Will the proposed action increase or decrease the likelihood of accidents for non-motorists? **Crime** Will the proposed action increase or decrease crime? **Emergency Response** Will there be changes in emergency response time (fire, police, and emergency medical)?	**Effect on Neighborhoods** What are the effects on the neighborhood from which people move and into which people are related? **Residential Displacements** How many residences will be displaced? What type(s)-- multi-unit homes, single family, rural residential, others? Are there residents with special needs (disabled, minority, elderly residents)? **Business and Farm Displacement** How many businesses and farms will be displaced? What type(s)? Do they have unique characteristics, such as specialty products or a unique customer base? **Relocation Sites** Are there available sites to accommodate those displaced?

Although the community impact is a recognized component that helps to form and develop public trust and confidence, the Community Impact Guide (Table 3) makes an interesting distinctive statement: *"Throughout project decision making activities and until construction, the community impact analyst assures that consequences to the social fabric of an area are given consideration with other environmental impacts."* It has been made clear by the FHWA for our study group there is concern that the public trust and confidence is sometimes lost at the design and construction phase of the project. This guide implies the issue faced by transportation projects is the lack of community involvement at the beginning of the planning stage, contending that the involvement doesn't begin for many projects till the end of the planning stage. That implication follows the concerns of the FHWA Major Projects group

(UMUC, TMAN 671, 2004) that "Another key factor this is becoming increasingly more important to the success of these (mega) projects is the ability to maintain public trust and confidence in the project from start to finish."

There has to be a new awareness of transportation project endeavors that concern the public trust and confidence throughout the project. Involvement cannot stop at the planning stage. Although full of useful information, this guide stops short of creating a mindset that does not go far enough to accomplish the desired effect of maintaining public trust and confidence throughout the life of a mega project. It not only is important to note this but to emphasize that there has to be a new awareness for all projects including mega projects, and to make commitments to integrate this into their project planning.

Public involvement is not meant to be just an integral part of the community impact statement, but should be fully integrated within the planning of the project. Early in the planning stage, analysts need to identify how the public relations is to be handled throughout the project and how the different PR staffs will partner and work together to ensure good communications between the project, the PR staff, and the community.

Public involvement is integral to the assessment process. They can provide vital information to the community impact assessment process, and can help validate the following:

- Development of the project's purpose-and-need statement and identification of alternatives.
- Development of the community profile.
- Identification and investigation of transportation impact to the community.
- Identification of avoidance, minimization, mitigation, and enhancement opportunities.

The planning and project development process must provide for an open exchange of information and ideas among the public, community impact analysts, and the entire project-development team. It should provide opportunities for early and continuing communication between the community and key project staff.

B. Environmental stage

The US Department of Transportation website (April 22, 2004) recently posted an article on President Bush's issuance of Executive Order 13274 on September 18, 2002. This Executive Order was issued to enhance environmental stewardship and streamline the decision-making process in connection with major transportation projects and instructs DOT to select priority projects and establishes an interagency Task Force to coordinate expedited decision-making across the federal agencies. While this EO advances current DOT and interagency streamlining efforts, it also brings high-level officials to the table to address immediate issues and track the progress of particular projects. "Establishing an interagency task force will further foster interagency coordination and collaboration. By working together in partnerships, agencies of the Federal Government can improve upon the decision- making process while safeguarding the environment."

On January 1, 1970 the National Environmental Policy Act of 1969 (NEPA) was signed into Law. NEPA established a national environmental policy intentionally focused on federal activities and the desire for a sustainable environment balanced with other essential needs of present and future generations of Americans.

NEPA established a supplemental mandate for federal agencies to consider the potential environmental consequences of their proposals, document the analysis, and make this information available to the public for comment prior to implementation. The environmental

protection policy established in NEPA, Section 101, is supported by a set of "action forcing" provisions in Section 102 that form the basic framework for federal decision making and the NEPA process.

While NEPA established the basic framework for integrating environmental considerations into federal decision-making, it did not provide the details of the process for which it would be accomplished. Federal implementation of NEPA was the charge of the Council on Environmental Quality (CEQ), which interpreted the law and addressed NEPA's action forcing provisions in the form of regulations and guidance. The CEQ requires the FHWA to report significant human environmental issues with an Environmental Impact Statement (EIS). The types of actions that would normally require an EIS are:

- A new controlled-access freeway
- A highway project of four or more lanes on new location
- New construction or extension of existing highways
- New construction or extension of fixed rail transit facilities
- New construction or extension of a separate roadway for buses or high occupancy vehicles not located within an existing highway facility

The purpose of an EIS is to provide a full discussion of significant environmental impacts resulting from a proposed action. It provides the public and decision makers with reasonable alternatives that meet the project's purpose and need and that could avoid or minimize adverse impacts or enhance the human environment. The EIS must be clear and concise. The focus of the discussion is on significant environmental impacts. Other impact categories are discussed only in enough detail to document why they are not considered significant. All discussions of potentially significant impact categories must be to the point and supported by technical information.

Following is a broad overview of the steps in the Environmental Impact Statement process:

1. FHWA issues the Environmental Determination.
2. DOT and Project Facilitator prepares the Draft Environmental Impact Statement (DEIS) and FHWA approves it.
3. DOT and Project Facilitator revises the DEIS and prepares the Final EIS after comments from public and agencies.
4. FHWA approves the final EIS.
5. FHWA issues the Record of Decision (RoD).

The Federal Highway Administration (FHWA) and NEPA requires, to the fullest extent possible, that the policies, regulations, and laws of the Federal Government be interpreted and administered in accordance with its environmental protection goals. NEPA also requires federal agencies to use an interdisciplinary approach in planning and decision making for any action that adversely impacts the environment.

NEPA requires and FHWA is committed to the examination and avoidance of potential impacts to the social and natural environment when considering approval of proposed transportation projects. In addition to evaluating the potential environmental effects, we must also take into account the transportation needs of the public in reaching a decision that is in the best overall public interest. The FHWA NEPA project development process is an approach to balanced transportation decision-making that takes into account the potential impacts on the human and natural environment and the public's need for safe and efficient transportation.

It is FHWA's policy that (23 CFR § 105):

- To the fullest extent possible, all environmental investigations, reviews, and consultations be coordinated as a single process, and compliance with all applicable environmental requirements be reflected in the environmental document required by this regulation.
- Alternative courses of action be evaluated and decisions be made in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of the social, economic, and environmental impacts of the proposed transportation improvement; and of national, state, and local environmental protection goals.
- Public involvement and a systematic interdisciplinary approach be essential parts of the development process for proposed actions.
- Measures necessary to mitigate adverse impacts can be incorporated into the action.

According to the T-REX 2003 Fact Book, there was an aggressive public involvement program, which included a series of public open houses, provided information to the public while giving them the opportunity to participate in the project's environmental planning process. Four rounds of public open houses, in addition to numerous presentations to public and civic groups, took place during the environmental planning process, as required by the National Environmental Policy Act (NEPA). The T-REX team and the Southeast Corridor Constructors (SECC) team used every means available to minimize the project's impact on the environment, including wildlife. Measures included working with local municipalities and state and federal agencies to comply with all established local ordinances and state and federal laws.

SECC, recognizing the need to minimize the impact of noise on residents during the demolition of bridges in the City and County of Denver, devised an innovative temporary noise

wall using freight trailers modified with special noise-dampening skirts. The trailers proved to be an effective means of mitigating noise during the demolition of bridges. The contractor also implemented a hotel voucher program that provided residents living closest to the demolition projects the opportunity to stay in hotels. To ensure the success of the noise mitigation program, SECC representatives and the City and County of Denver continuously monitored noise levels on the project. Residents also have access to a telephone hotline to report excessive noise levels.

The T-REX Project team and the contractor worked closely with local, state and national agencies to ensure environmental impacts are minimized during construction. Measures include:

Air quality

- Suppressing dust through watering or other methods
- Covering trucks hauling soil
- Stabilizing and covering stockpile areas
- Replanting exposed areas
- Washing construction equipment to minimize tracking debris from construction sites
- Monitoring air quality during construction

Water Quality

- Adhering to local and state erosion control requirements
- Treating contaminated trench water
- Avoiding impacts to wetlands and other sensitive habitats
- Developing storm-water practices required for the Colorado Department of Transportation's Municipal Storm-water Permit
- Adhering to U.S. Army Corps of Engineers limits regarding filling in wetlands and streams

Noise / Vibration

- Where necessary, building temporary noise barriers during construction
- Minimizing the length of construction in residential areas
- Minimizing nighttime construction in residential areas
- Routing truck traffic away from residential streets, where possible
- Combining noisy operations to occur simultaneously
- Accomplishing high-noise construction activities during the day, whenever possible.

Transportation planning and project development must reflect the desires of communities, and take into account the impacts on both the natural and human environments. Transportation projects are closely looked at to see how they might impact the community, the natural environment, and our health and welfare. Before any project can move forward to construction, the FHWA must address and comply with laws related to the environment. These laws cover social, economic, and environmental concerns ranging from community cohesion to threatened and endangered species.

C. Design and Construction Stage

The FHWA Major Projects Group identified the design and construction stage of the mega project as the stage where the publics' trust and confidence begins to wane. As demonstrated by earlier snafus with the Big Dig, it is imperative that mega projects take note of public concerns early in the planning stage to avoid issues later. T-REX used a design-build philosophy of construction that allowed for a better use of resource planning and public involvement. Could this have worked for the Big Dig at the time? That may be hard to answer since there are so many distinguishing differences.

- The Central Artery / Tunnel project is vastly more complicated and had an existing structure that needed vast improvements beyond the normal realm of transportation demands.
- The infrastructure around the Boston area was more urban and complicated by an older existing infrastructure that made it strategically difficult to isolate for construction.
- The planning was sorely lacking compared to some other mega projects now underway that included more public input.
- The culture of the community itself and the demographics are different (Midwest vs. Northeast)

The CA/T is seen by the many in the public sector as "a poorly managed project." However, the final product is far from a failure and in fact has viewed as an engineering marvel as measured by the unique ways construction was conducted. To do highway improvements in a city like Boston has amounted to one of the largest, most technically difficult and environmentally challenging infrastructure projects ever undertaken in the United States. The project spans 7.8 miles of highway, 161 lanes miles in all, about half in tunnels. All told, the CA/T is placing 3.8 million cubic yards of concrete – the equivalent of 2,350 acres, one foot thick – and excavate more than 16 million cubic yards of soil.

The Central Artery/Tunnel Project is public works on a scale comparable to some of the great projects of the last century -- the Panama Canal, the English Channel Tunnel (the "Chunnel"), the Trans-Alaska Pipeline. Each of these projects presented unique challenges: The Panama Canal confronted earth slides, malaria, yellow fever, and Central American jungles. The Channel was dug from either end, 31 miles apart, meeting at a precise point under the channel

floor. The Alaska Pipeline contended with vast distances, freezing temperatures, and major environmental concerns.

The Central Artery project's unique challenge has been the fact that it is being built in the middle of a city. Work of the CA/T project's magnitude and duration has never been attempted in the heart of an urban area, but unlike any other major highway project, the CA/T has been designed to maintain traffic capacity and access to residents and businesses – to keep the city open for business – throughout construction. Highway projects of the 1950s and 1960s, when the interstates were first built, gave very little consideration to the communities in the path of the new roads, with disruption and dislocation the rule of the day.

Recognizing that failing to maintain Boston's economic viability during construction would damage the city's competitive position for years to come, project planners worked with environmental and other oversight and permitting agencies, community groups, businesses, and political leaders to create consensus on how the project would be built.

With the enormous task of the mega projects comes the responsibility to maintain the public trust and confidence as well. It cannot end once the planning, and the community and environmental impacts have been decided and mitigated. There is the responsibility to respond to construction delays, residential noise and vibration concerns, right of ways that included businesses and communities, emergency response entities and others. The state DOTs and the project team need to come to the table and plan early how to incorporate public input into the project and have it effective at the design and construction stage as well. If already underway, then there should be a research effort to determine if all public concerns are being heard and acknowledged. This could mean increasing and improving the public information staff to properly respond to public concerns with the appropriate key figureheads of the project

represented to show good faith. With community "buy in," there can be effective mitigation and improved public trust and confidence.

D. Operations stage

According to the Volpe National Transportation Systems Center, in a September 2001 report on highway funding, there is a tendency for major construction projects to concentrate on the planning, environmental and construction stages of the project, with less concentration on the operations stage of the project. Some highway officials have realized that providing transportation infrastructure is not enough, if the infrastructure doesn't provide a reasonable level of service. Transit agencies and the Federal Aviation Administration have recognized this for decades, as evidence in their investment in maintenance and operations systems such as control towers and switching systems to control traffic. However, it is an approach not yet supported by federal transportation policy, which is still, despite some evolution, rooted primarily in the 20th century pattern of providing federal-aid money for highway construction, not highway operations. For highway agencies to realize and carry out a more operations-oriented mission, a corresponding change in federal highway funding policy and accompanying changes to supporting institutions and organizations will be necessary.

Operations on all roads and highways are affected by several entities that include public-safety agencies, as one example, who perform services related to accidents and safety that are vital to the smooth operation of transportation systems. Emergency response teams also are critical when an incident occurs, stopping traffic in all directions. These separate players each report to different entities and each has its own federal, state, and/or local funding source that is usually different than any made through transportation legislative and funding decisions. They are consequently difficult to coordinate, even if one group decided that it was important to do so.

For instance, state highway patrols are not typically included in the transportation planning, funding, and administrative decisions usually spearheaded by state DOTs. And local police and emergency-response communities are usually not included in decisions about public-works operations. Better management of road and highway congestion is needed to ensure commuter confidence.

In recent years, the state DOTs have been placing new emphasis on operations and maintenance planning. Incorporating environmental stewardship goals into operations and maintenance activities helps DOTs achieve continuous improvement in environmental performance. Maintenance and operations activities encompass all areas of a highway system. So improvements in these areas, even seemingly minor ones, can have far-reaching impacts.

- Great Potential: Maintenance and Operations are the center of some of the most significant environmental impacts and also offer great opportunities for improvement.
- Dual Benefits: More consistent, integrated systems can improve efficiency as well as environmental performance.
- Broad Base: Maintenance and Operations often comprise the majority of a DOT's work force.
- Showcase Opportunity: Advancements in these two areas can demonstrate system and stewardship commitment.
- Crosscutting Impacts: Tools for environmental improvement in these areas can often be shared with other DOT functions, such as construction.

Intelligent Transportation Systems (ITS) represents the next step in the evolution of transportation. As information technologies and advances in electronics continue to revolutionize all aspects of our modern-day world, they are also being applied to our transportation network.

These technologies include the latest in computers, electronics, communications, and safety systems. T-REX has incorporated ITS technologies into its project. During construction, ITS technologies monitor traffic on the interstates and roads most likely used as alternate routes by drivers. ITS technologies also provide a crucial connection in helping appropriate agencies respond to emergencies on and off the highways, both during and after construction.

During T-REX construction, a number of ITS elements are being used to minimize inconvenience to the public. Elements include:

- Expanded ramp metering to regulate traffic entering onto I-25
- An enhanced courtesy patrol in the T-REX construction zone to help stranded motorist
- An enhanced network of closed-circuit cameras and vehicle detectors to monitor traffic on the interstates and on major feeder roads
- Highway advisory radios and variable message signs to provide travelers with up-to-date construction and traffic information
- An interim traffic operations center operated by the T-REX contractor, Southeast Corridor Constructors, to monitor traffic conditions and coordinate response with state and local agencies

The completed T-REX project includes ITS components to:

- Monitor freeway incidents (congestion, crashes, etc.) to better manage traffic flow
- Regulate traffic entering the highways (ramp metering)
- Provide travelers with traffic updates
- Provide transit riders with real time bus and train arrival information
- Make service announcements at major bus and rail stations

- Support the operation of a parking management system at major rail stations
- Provide priority movement to buses at selected park-n-Rides

In delivering funding assistance to the national transportation system, the U.S. Department of Transportation forms partnerships with non-federal agencies to administer aid and to ensure that transportation projects and programs are carried out. For highway programs, the federal partners are the fifty state DOTs. The state DOTs generally do not view their primary role as "highway operations," although they have major mission responsibility for Maintenance and Operations (M&O). In sharp contrast, for transit programs the federal partner is typically a regional or local transit agency, whose principal job is the operation of transit systems as well as providing the rolling stock.

This difference highlights one of the institutional issues that must be addressed if there is a shift to more federal assistance for highway operations. Only rarely does the FHWA form a local partnership with the fifty state counterparts. Even when they do exist, partnerships between local and federal highway agencies are likely to be with an FHWA division office, not FHWA headquarters.

Defining "operations" is critical to deciding where, how, and in what form to fund its component activities. Moreover, some consensus must be achieved on what constitutes a level of congestion that warrants federal attention. According to a paper prepared for FHWA's Operations Core Business Unit, (Lomax and Turner) concern about congestion is relative to expectations and perceptions of what is normal. These expectations and perceptions naturally differ from place to place. An intolerable level of congestion in Fargo, North Dakota, where traffic customarily flows relatively freely, would be completely different than an intolerable level in Los Angeles, Seattle, or Washington, DC, which are among the most congested in the country.

Reaching national agreement on a definition of the level of performance required to meet criteria for eligibility for funding for operations will require extensive outreach, information and idea sharing, and consensus building. As a follow-up, informational and professional capacity-building initiatives will be required.

In terms of public trust and confidence, a compelling case can be made that it is time to address the issue of congestion, that it is recognized that the present piecemeal approach to congestion is not the answer. A policy shift to direct funding targeted at operations to reduce congestion is required – even overdue. Operational strategies and tactics, if implemented, can be effective, efficient ways of managing congestion and making maximum use of the transportation system's capacity. According to Transportation Secretary Norman Mineta, the number-one transportation problem for the U.S. today is congestion. The national press agrees:

> *"If all the plans, programs and problems of the Department of Transportation could be boiled down to one word, it would be: CONGESTION. [...] [T]here is general consensus that it simply will not be possible to keep building new highways, particularly in the near-gridlocked areas of the East and West Coasts."*
> (*Washington Post*, May 15, 2001)

There is a concern that ignoring public influence and concerns, in line with the statement from the stated goal of the T-REX mega project in Colorado. "[...] to minimize inconvenience to the public," can ultimately fuel politicians and impact groups to pledge support to other modal areas of transport. It would be practical to consider funding for public involvement at this stage of the mega project construction that is encompassed within the framework of the total project in the beginning stages of the project funding effort.

Marketing Goals and Objectives

A. Marketing-Strategic Plan

A marketing strategic plan is developed to incorporate all concepts that are important throughout the decision-making process and until construction is completed. The plan is designed to help define the business goals and develop activities to achieve them. In positioning a mega project to effectively promote public trust and confidence throughout the life cycle of a project, a marketing strategy that focuses on public information and awareness initiatives should be implemented. Marketing the mega project will depend on the specifications of the project and the welfare of the community within its parameters. The strategic plan must take into consideration how the construction process will affect the public. Today, the public is extremely knowledgeable, know their rights, and know how to fight for them. If the concerns of the public are not reflected in the project planning stages, then projects can be delayed due to negative media attention and lengthy litigation. There is a need for more and better communication within the industry and with the public. Above all, quality and the components to implement it should be reflected as a hallmark in the marketing strategy.

The implementation of the mega project should recognize the importance of disseminating public information in all phases of the project. Also important is the need to identify and resolve issues and concerns impacted by the citizens, which is explored in the beginning stage of market research –market segmentation and positional analysis. The reason for the emphasis on the importance of public information throughout the marketing plan is that the public information effort concentrates on minimizing inconvenience to the public, which creates a sign of trust and confidence in the system. The primary public information goal is to develop and maintain a high level of communication that creates and informs public, of the project

relevant issues. Consensus building techniques and process improvements must also be promoted so that communities can gain a sense of confidence that the standard procedures of the nation's highway builders will meet their needs and concerns.

An effective partnership with the various stakeholders and general public will be critical in developing a successful transportation system responsive to the needs of affected entities and potential users. In fact, stakeholders are the key in the relationship marketing, which is important in managing communication throughout the project system. Stakeholders must be identified in the pre-planning stage of the mega project analysis, which may consist of the following:

- Government Officials – Know the names of these key project members and who will oversee the project initiatives and development planning process. Establish relationships with them. Create a communications connection so that these officials can rely on the information promptly. Keep the communication channels open.
- Industry contractors and consultants – It is best to find out about the bidding process for securing the best contractors. Once contractors have been selected for the project, you will need to research the contractors and consultant's business history. Find out about their track records through previous customers. See if they did their best at getting their jobs done.
- Local businesses – One way to involve the public is through generating business input and help in the overall development process. Use local business to find businesses that can help in the construction of the mega project. This will put revenue back into the community, and show the community that the project is investing in businesses they trust and are familiar with.

- Grassroots Organizations – These types of organizations are usually created as the "voice" of the mega project's community. They typically voice their concerns of the development and construction process so that it does not adversely affect the community. Effective research and due diligence can help identify the major organizations that a mega project will have to interact with.
- The Public – Since mega projects will have a major impact on the public's welfare, it is best to keep the public updated on all relevant issues, even if the issues deal with problems in the development and construction process. Explain the pros and cons of the project in the beginning, so the public will be able to adjust to changes that have an effect on them. Not only does the plan have to be explained to the professionals, but a simplified version of the plan should also be made available to the public. Do not blindside or keep the public in the dark, this is one sure way of alleviating negative public perception.

The central components of the marketing-strategic plan, which is dedicated to communicating the goals and objectives of maintaining and promoting public trust and awareness, should include elements that can be implemented throughout the life cycle of the plan. Each category placed in the plan has to be a proponent of what the project represents. The plan itself will be a blueprint to the public that it can and will accomplish the tasks outlined. The plan will represent the research that has been achieved through market research and statistics, the plan will represent goals that will be accomplish, the plan will represent good faith in achieving milestones to accomplish the project, and the plan will represent the unity and accomplishment of the work generated by all the stakeholders. An overview of a mega project marketing strategic plan should include the following elements in its outline:

1. Vision Statement

The vision statement represents the organization's beliefs. It encompasses the organization's goals as well as the community's goals. It's a state of values and it declares to the public the expectations that it has and strives to accomplish. The statement should be precise and practical, and it is written to guide the actions of all involved. It is a major component in the process of strategic planning. The following is an example of a good vision statement presented by the T-Rex Transportation Expansion Project, and created for the projects Public Information Strategy Plan.

"The vision for the Southeast Corridor Public Information Team is to minimize the inconvenience to commuters, residents and businesses by building trust between the Transportation Expansion Project Team, the Community and all Stakeholder groups during the course of construction."

This statement is responsive and accessible. It provides accuracy and sustainable goals and does not portray objectives that cannot be accomplished.

2. Mission Statement

Once the vision statement has been defined, it is time to create a mission statement that builds on the vision providing a statement of purpose and function. A mega project's mission statement must be future oriented and focus on one common purpose. The statement should be specific to the organization's goals and not generic. Here is an example of a mission statement that shows a specific purpose.

"By providing quality education, we empower individuals to become caring responsible citizens who value education as a lifelong process."

3. Goals and Objectives

Setting goals and objectives will build on the previous steps of visioning and taking stock, goals are simply a clearer statement of the visions, specifying the accomplishments to be

achieved if the vision is to become real. The target objectives are clearer statements of the specific activities required to achieve the goals, starting from the current status. Another example of creating effective goals based on the project initiative is seen in the Strategic Plan developed Southeast Corridor Public Information Team.

Goals

"1. To keep all stakeholder groups informed about the project prior to and during construction.

- *(a) Build awareness of the project, its vision, goals and benefits with all stakeholder groups.*
- *(b) Build awareness of the project, its vision, goals and benefits with all stakeholder groups.*
- *(c) Work with and oversee the design-build contractor's public information program for designing an extensive public information program.*
- *(d) Brand the project in a manner that resonates with the community as a project with which they can identify and understand its benefits.*

2. To provide opportunities for stakeholders to give input and feedback about the project.

- *(a) Assure that stakeholders are aware of the opportunities for input and feedback.*
- *(b) Develop a system for documenting, quickly responding to questions and concerns. "*

4. Situational Analysis

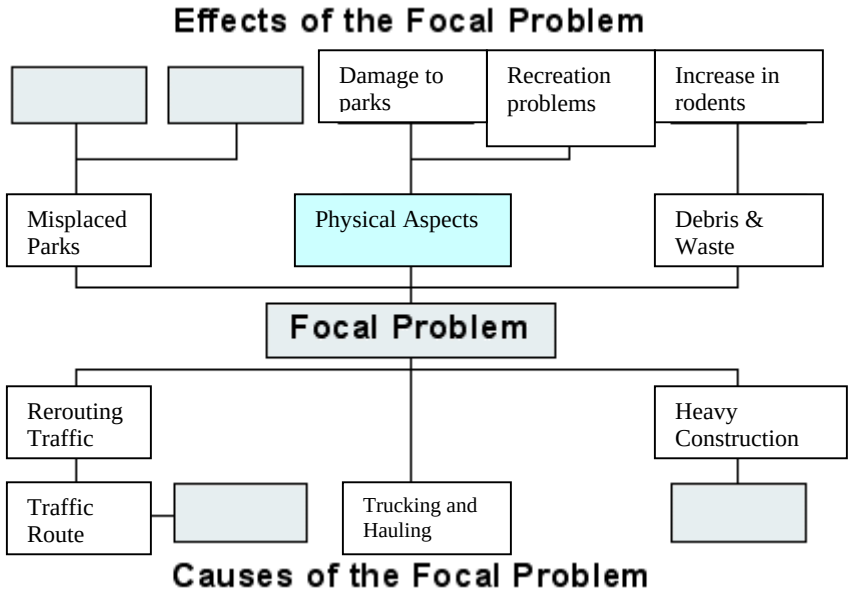
A situational analysis helps determine real development needs in a market plan. It helps to bond program participants together by identifying a variety of issues that may need to be dealt with, such as the roles of different partners in resolving those issues, or the milestones and resources needed to achieve a given solution. Sometimes, an analysis for a proposed activity may reveal issues that need to be tackled before the apparent development activity can take place. Some of the core concepts for creating a situational analysis involve:

- Building a better understanding of the underlying causes of the issues.
- Building a stakeholder consensus.
- Identifying potential constraints.

- Aiding the analysis of the real causes of the problem.
- Helping establish meaningful relationships with other implementers.
- Helping establish the actual size of the problem and the resources needed to tackle it.

There are several types of decision analysis tools and methods that are effective when trying to focus on the main aspect of problems related to the subject. These can include brainstorming, various decision tree analysis tools, SWOT analysis, focus groups, utilizing cause and effect relationships, and problems trees as shown below.

Figure 3. Structure of the problem tree showing causes and effects



5. Communications and Promotion

The communications and promotion strategy will emphasize that an effective level of communications will be maintained throughout the life of the project. This includes immediate attention of the stakeholders and gaining feedback by building one-on-one relationships with group representatives, also known as relationship marketing, which is essentially how the project

will develop. Other elements that are also part of the campaign are further outlined in the Strategies Section.

6. SWOT Analysis – Strengths, Weaknesses, Opportunities, and Threats

The SWOT Analysis is a very effective way of identifying the strengths and weaknesses, and of examining the opportunities and threats that organizations can possibly face. Carrying out an analysis using the SWOT framework helps focus activities into areas, which are considered weak and discover areas that have the greatest opportunities. To carry out a SWOT analysis, it is best to draft questions that focus on the primary issues relating to the project.

Strengths:

- *What advantages will the project have?*
- *What dose the project accomplish?*
- *What relevant resources dose the project have access to?*
- *What do others see as the projects strengths?*

Weaknesses:

- *What could the project initiative improve?*
- *What is the project doing badly?*
- *What should the project avoid?*

Opportunities:

- *Where are the good opportunities facing the project?*
- *What are the interesting trends that are apparent?*

Threats:

- *What obstacles are relevant?*
- *Are the required specifications for the services provided changing?*
- *Is changing technology threatening the projects position?*
- *Could any of the weaknesses seriously threaten the project's goals?*

Responses to the proposed questions can identify what is relevant and what situations need to be improved. The T-REX Strategic Plan was good in determining factors in the area of strengths, weaknesses, opportunities, and improvement (given below):

Strengths:

- A clearly defined Strategic Plan for all project components.
- The construction schedule and planning will reflect public input.
- The project will result in increased mobility and safety for the traveling public.

Weaknesses:

- Approval of the project through passage of Referendum A was not unanimous.
- There is significant impact on the public during the construction process.
- Construction is taking place along already highly congested corriders.

Opportunities:

- Continue the successful partnerships that have been established with stakeholders.
- Develop innovation for both the approach to construction and public information.
- Forge strong relationships with new media outlets and businesses.

Threats:

- Concerns that the project might increase unwanted growth.
- Impact on area's ability to attract new business or expand.
- There are Right-of-way and property acquisition issues.

A successful communication plan based on the prime marketing strategy entails that the project team be prepared to respond to public comments and concerns in an accurate, consistent and timely effort. It will consist of all the primary categories as outline above. It will further require implementing a communications strategy system that conveys the following:

- Inform and respond to relevant feedback from the public.
- Help the community through involvement initiatives and create pride in the final project.

- Use mitigation strategies to counter impacts and create effective relationship with the design-build contractor.

Stress the completion of the final mega project market plan, so that key project milestones are met in a consistent and timely fashion.

B. Public Awareness Initiatives

Creating public awareness initiatives is vital to the communications foundation plan of the mega project. The public information team will deal with situations throughout the project and keep the public abreast of pertinent changes in the information strategy plan which is significant to the life-force of maintaining public trust and confidence in the publics' eye. Public awareness strategies will vary. There will be issues dealing with mitigation control and planning, such as road land closures, cut-traffic issues, traffic delays, business access, noise issues, commercial vehicle restrictions and emergency response issues. Realizing that the community will sometimes experience high levels of inconvenience throughout the construction process, the project's success will be measured largely by how effective the communication plan is and how responsive it is towards the publics' issues. Therefore, a number of public awareness initiatives should be implemented within the communications framework. These may consist of:

- Education Outreach – Develop and implement a targeted program to effectively communicate the project's identify, vision, and benefits through publications, media, workshops, questionnaires, and other written resources.
- Research – Develop and implement a strategy that tracks feedback from the public, such as using surveys, Kiosks at fairs, parks, or key events, interviews, promotional materials, telephone banks, etc.

- Meetings – Establish meetings to gain informative feedback and involve the community in the communications process by placing the meeting at convenient locations, such as area libraries, community centers, schools, offices, and other public buildings.

These are just a few of the methods that can be used in promoting public awareness. A mega project will require different communication needs at various stages of its life cycle. It is very important that the overall strategic communications plan is well developed and incorporates all fundamental concepts relevant to the planning process.

Strategies

A. Distribution

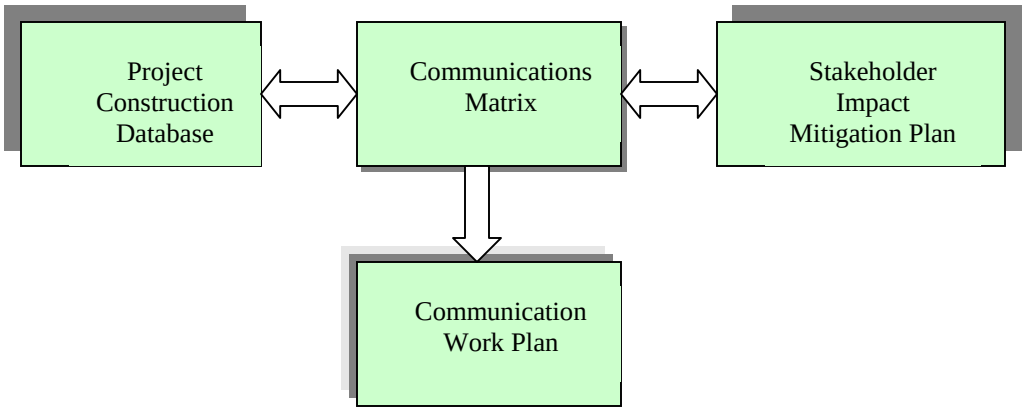
There exist various stakeholders having an interest in or being affected by a mega project. These stakeholders have different information needs and different distribution format preferences. For example, a general U.S. citizen outside the affected region would mainly be interested in the resources spent on it with tax dollars. Citizens want to assure themselves that the government is using tax dollars wisely or they will question why taxes should be paid. On the opposite side of the spectrum, there are citizens who live right next the construction areas of the project. While general citizen expectations will still apply, their main concern will be the minimization of inconveniences, such as high noise level, reduced visual aesthetics, restricted road access, environmental damage, safety issues, etc. As an example, for a business, important issues would be worker retention and productivity, as well as public access and customer retention.

To identify all actual stakeholders and determine their exact concerns and information needs, the services of a research firm should be employed. While members of the project team might do the work themselves, the research organization likely has more experience, but more importantly provides for a more independent assessment. The latter serves the dual purpose of accurately informing the project members and improving public trust in the outcomes. In T-REX's case, the National Research Center was used to make the stakeholder assessments with a confidence level of around 95% (Southeast Corridor Constructors, 2000).

To make sure everyone's concerns are addressed, distribution has to be tailored to the various stakeholder groups. A good way to do so is to use communication matrices and communication work plans—part of T-REX's Southeast Corridor Constructors (SECC) public information strategy (Southeast Corridor Constructors, n.d.). For each specific project activity, be it lane closure XYZ or a periodic project update, a unique matrix should be constructed. The rows of such a matrix could list all the possible stakeholder groups affected, and the columns could list all the possible information dissemination tools to use. In SECC's case, all items are included without regard to who is ultimately responsible for implementation to promote their one team, one vision, and one voice concept. A checkmark is then made in each field that constitutes an appropriate communication match for the activity at hand. It should be possible, for the sake of saving time and resources, to determine generic activity requirements to use as baselines.

The communication matrix should be tied to the project's activity schedule largely based on the project plan and the stakeholder impact mitigation plan initially based on the outcomes of the environmental planning process. In case of the project's activity schedule, the relevant information might be located inside a construction database. This process could be depicted as shown in Figure 4.

Figure 4. SECC's public information strategic planning process



Source: (Southeast Corridor Constructors, n.d., Figure 4.3-3)

Based on the communication matrix, a high-level communication work plan could then be formed, which may include the following:

- The relevant facts about the construction activity
- Key messages for each stakeholder group (stakeholders as identified in the communication matrix)
- Public information tools to use (tools as identified in the communication matrix)
- Question and answer section
- A timeline detailing the sequence of communication with stakeholders
- Activation of project tools

(Southeast Corridor Constructors, n.d.)

Such a work plan, in turn, would serve as a reference for the detailed work plans to be performed by those responsible for implementation. Regarding the determination of timelines, a timing matrix might be used in identifying the speed at which certain information (e.g. hotel voucher programs, road closures, other pathway closures, utility work, construction delays, budget problems, accidents, etc.) should be communicated to the various stakeholders. For

example, emergency agencies need to know about information involving access restrictions sooner than most anybody else.

To provide for a more focused information dissemination effort, the mega project and public information personnel could be divided into various segments, where each segment has one or more predominant stakeholder groups that will be affected by similar construction work issues. For example, the SSEC responsible for the T-REX project has a communication matrix, public information team, and public information zone leader for each of its three construction segments. One segment is primarily a residential and small business neighborhood, another mainly a commuter area, and the other largely a business-based area which includes several Denver Tech Center facilities. Messages can be tailored to the principal stakeholders of each segment.

B. Communications/Promotion

Apart from information dissemination there is also the matter of how to best bring the message across that the project constituencies are honest and committed to the project, any problems during the project will be dealt with in a reasonable manner, and the project and support for it is important. Here, the employment of independent parties for making assessments on various aspects of the project would serve as one aspect of promoting honesty. Apart from using one or more research organizations for stakeholder information collection and processing, there should also be independent agencies for construction work reviews, environmental mitigation reviews, information dissemination review among the project constituencies etc. The public wants to know that there are enough checks and balances in place so that honesty and commitment is accounted for.

In addition, communication leaders should be identified with whom stakeholders can interact and who they can hold accountable. Providing people in charge to the public is a good way to improve their trust. Unfortunately, the leader might be faced with problems out of his/her control or not be able to address all concerns due to other/higher powers. Because of that, there should also be a source of contact to the other/higher powers in question available to the public. The key message here is to make the project constituency interaction process transparent to the public. When something goes wrong, the public should be able to get at the source(s) of the problem. To that end, there should, at least, exist a project organizational chart (or charts, as there will be many people and organizations involved) with individual names and all inter-organizational links for all to see. In some sense this will aid to put everybody in the spotlight.

Other strategies to follow are as follows:

- Take a proactive rather than reactive approach to information sharing. Nobody likes being left in the dark and having to probe for information, and giving information early tends to send the message that there is nothing to hide.
- Be accessible to the public. Try to give people anytime, anywhere access to project information. Also consider giving them through formal channels only, as is reduces the possibility for message inconsistencies or unintentional slip-ups to the delight of spectacle-hungry media. Regarding the latter, promote civic journalism, but throw the media a colorful bone from time to time, such as fun facts regarding the project (the T-REX team does that from time-to-time).
- Give the communities important information well in advance of actual implementation. For example, there could be road signs with the following on them:

  - "Road ahead will be closed on [date] and be expected to reopen on [date]. Please take [such and such alternate routes] for the time being. For more information please visit [project Website address] or call [hotline number]."
  - "Road ahead will undergo construction on [date]. X lanes will be closed as a result. For more information please visit [project Website address] or call [hotline number]."

  Since road sign messages should not be too long, in order to allow drivers to safely read them, they might have to be shorter than the above. But it would be good to get information across on where further information can be obtained.

- Advertise important information sources that are not known to the majority of citizens (the Website, for example) on popular information sources (e.g. TV or signs). For example, in the Executive Summary of the I-15 Public Information Survey Update of March-April 1999, it was revealed that 8 in 10 drivers were unaware of the I-15 Website, even though an increasing number of people were using it (Executive Summary, 1999).
- Incorporate public feedback into the project, as much as possible. Individuals give feedback with the expectation that it is acted on in a major way; minor changes will produce feelings that a half-hearted approach to information incorporation was taken. Yet, there might be instances were no significant changes can be made. In those cases, it is important to inform the audience why the situation exists in an easy to understand point-by-point fashion (no vague or general statements).
- Show that the project is worth the investment--a piece of advice given by members of the I-15 team (Andrew Gemperline & Joseph Walker, personal communication with

Kalpana Hanumanthu, April 12, 2004). Get as much information out, as possible, showing that the end-result of the project will be worth all the hardship gone through. In that respect, consider laying the way for other aspects outside the project itself in solving what the project is supposed to do. If the ultimate goal is in reducing traffic congestion, consider partnering with businesses to provide flexible come-and-go schedules, offer telecommuting, relocating employees, etc. Also consider working with the state in improving public transit, by expanding service, offering discounts, implementing seamless car tolls, etc.

- Avoid the conventional marketing wisdom of advertising the product (project) with bells-and-whistles on. The I-15 project team, in initiating their feel-good SATCH advertisement program, found out that the public tends to view such initiatives as frivolous spending (Andrew Gemperline & Joseph Walker, personal communication with Kalpana Hanumanthu, April 12, 2004).
- Have informed, open, and outgoing project members pay the various community groups that are directly affected by the project, such as businesses, neighborhoods, or emergency crews, a visit for one-on-one communications concerning the project. Also consider compensating them for their hardships, by offering temporary office space or hotel vouchers (make sure their costs are all planned for in the budget). As any knowledgeable marketing specialist will tell you, it is important to avoid angry customers, because of their tendency to spread the bad word.
- Meet or exceed customers' (the public's) expectations. Unlike the boss who may question whether you are taking enough risks or being fully burdened, the public will appreciate it when expectations are exceeded. At the very least, they want

expectations to be met. To that end, avoid communicating to the public the most aggressive project plan figures you are going for (which may not even be met and incur the public's wrath).

No matter what strategy is chosen, it is important to tell the truth. (In case of the aggressive plan being withheld, the public can be told as to why that is.) While it may not prevent public disappointment or fury, the consequences of the public knowing that they have not been told the truth are more serious. It could lead to the public having no trust in the current and future project constituencies whatsoever; apart from greater levels of disappointment or fury. Along with any bad news (honest good news is no problem) there should also be an explanation for it. A long version of the problem and its explanation would be preferable, as giving simple explanations may cause the public to think that there exist simple solutions. Making people realize that the problem is complex, will not make the demand to have it fixed go away, but will disappoint them less if it the solution takes longer than expected or it turns out be less than optimal. It also raises public confidence considerably if it gets solved to most everybody's satisfaction.

Action Plan and Implementation

A. Media Relations/Media Plan

Media Relations

"The media is like the wind, a force of nature. You can either fight it, like the Serbian nationalists did, or you can harness it. You harness it by being kind to reporters, figuring out what they need and getting it to them" (Orwell, 2002). The media can duly affect the success or failure of a mega project. Media serves as the information conduit between the public and the

executor of the project. Since the media can sway anyway depending on who is feeding them information, whether right or wrong, there has to be a strategic media plan in place at the planning stage and during the execution of the mega project. Below are two examples of media view on Boston's Central Artery/Tunnel Project, also referred to as "Big Dig." One is as follow:

"Some call the Central Artery/Tunnel Project in Boston, Massachusetts, the 'largest, most complex and technologically challenging highway project in American history.' [...] What does it take to dig a tunnel like this? A lot of hard work and a handful of engineering tricks." (PBS)

While the above media review of the project raves about and praises the project, lets look at another media review of the same project given below.

"Boston's Big Dig could take up to 50 years to pay back. That's the word from Massachusetts Governor Paul Cellucci if the debt on the Big Dig is refinanced. It is a debt that has grown significantly since the original plans and cost estimates were released 1990.

If 50 years doesn't seem like much, consider the amount. The project, originally estimated at $2.6 billion, may cost $12.2 billion by its completion. And that's just an estimate [...] The Big Dig is Boston's money pit.

The federal government is now investigating the project. Details were widely reported in the Boston newspapers. Turnpike Chairman James Kerasiotes is under fire but seems unfireable. Some suggest that he has blatantly lied about the project and its expected cost overruns. Even under pressure, Governor Cellucci is sticking by his King of the Roads, Kerasiotes.

In newspaper reports, Mr. Kerasiotes says that costs would have been even higher right now had it not been for his aggressive controls on the Dig, the largest highway project in American history. Ironically, it was in 1993 that the project was projected to cost no higher than $10.8 billion by the same man. In 1993, Massachusetts Turnpike officials had some interesting

insights on what they called the 'home stretch' of the project. Even so, Wall Street apparently isn't phased by the overages and there may be no unfavorable change to the state's bond rating according to the Boston Herald.

With such excess, discussion is already underway to recover funds. And guess who is going to pay? Right. Commuters" (Maihos, 2000).

While the media cannot be caged, it can be managed. And to do this, there should be a designated spokesperson(s). Though transparency is encouraged and maintained in media relation, only the appointed spokesperson can talk to the media at any given time. According to the Federal Task Force on the Boston Central Artery/ Tunnel, on January 7, 2000, the Director of the Central Artery Project submitted to the FHWA Massachusetts Division Office an "Annual Finance Plan." The Division conditionally accepted the Finance Plan, having discussed the potential for likely cost increases in the range of $500 million.

However on the same day of the provisional approval, the Chairman of the Massachusetts Turnpike Authority (MTA) informed the media of a potential $1.4 billion cost overrun, bringing the total CA/T Project cost to $12.2 billion. The MTA Chairman informed the Task Force that he acted in response to an anticipated inaccurate press account of cost exposures expected later that week. According to the FHWA Division Administrator, the state had not directly forewarned the FHWA of a potential cost overrun of such magnitude in any document provided to the Division Office, in the Plan, or in discussions prior to the conditional acceptance of the Plan.
Such media leakages have long-term negative effects on mega projects.

The SPIN project believes that the media is a powerful tool to help achieve political, social and cultural goals. Therefore, the tool must be used strategically and carefully examine how it connects to the other tools that might be used for social change: grassroots organizing,

litigation, public education, advocacy, etc. Public relations is not a substitute for any of these other tactics, it's an added tool that should be used to complement them.

Media Plan

For a mega project to succeed in its media relationship, a Public Information Team has to be setup. This team should be responsible for all media relations and below are some of the recommendations, which has been used by Southeast Corridor Multi-Modal Project:

- An ongoing media relations campaign shall occur and be managed by the mega project Public Information Team. All contractors shall assist in giving timely information to this team regarding construction activities, like road closure, detours, etc for use in media events.
- There should be a designee spokesperson from the Public Information Team to speak to the media as the need arises.
- Media relation should be proactive and focused not reactive. Information gathered from surveys and research should be used to maintain a consistent message. Education and relationships must be developed prior to construction.
- During the execution of the mega project, all communication requests and needs should be coordinated through the Public Information Team.
- During the course of the contract neither the contractor nor any subcontractor shall utilize information gained on or from the mega project for its own business promotion purposes without the written consent of the Public Information Team and the project manager.
- Neither the contractor nor any subcontractor nor their employees should conduct or participate in media events, newspaper/printer interviews, radio or television

broadcasts, public meetings or otherwise release information to the public concerning the mega project without the consent of the Public Information Team. In emergency situations, the contractor should immediately notify the Public information Team of any situations that may involve the media.

- All contractors and internal stakeholders should be mandated to participate in media training.

The Public Information team should not avoid the media; instead the media should be courted. The team should explore the elements of a media plan. Below is a template to follow:

- GOALS: What do you want?
- TARGET AUDIENCE: Whom do you need on your side to get what you want?
- IDENTIFY YOUR NEWS: What is unique about your efforts? What are the news hooks?
- FRAME THE ISSUE: What is this about?
- CREATE YOUR MESSAGE: What do you want to communicate?
- TARGET REPORTERS & DEVELOP MEDIA DATABASE
    - Top 50 Outlets
    - Top 20 Outlets
    - Top 10 Outlets
    - Top 5 Outlets
- PRODUCE DELIVERABLES Media Advisories/Press Releases. When will you distribute?
    - Press Kit
    - Reports
    - Polls

- Scorecards

- MEDIA BRIEFINGS: To which reporters can you offer personal attention?
- PITCH REPORTERS: What stories will you pitch to which reporters?
- MEDIA EVENTS: What sorts of events will help you make news and deliver your message?
- OP EDS: Can you submit to top target paper?
- RADIO AND TV TALK SHOWS: Which shows? Who are best spokespeople for this venue?
- LETTERS TO THE EDITOR: When will you submit? Can you start a proactive letters tree?
- RADIO ACTUALITIES: Do these make sense for you? If so, when will you create?
- WEB SITE/INTERNET PRESENCE: How can you integrate the internet?
- PUBLIC SERVICE ANNOUNCEMENTS: Radio, TV or Print? What angle?
- OTHER: What are your ideas for ways you can carry your message to the media?
- TRACK COVERAGE: What's your system to capture all these hits so you can show them to members, your board and funders?

(Source: SPIN Strategic Press Information Network)

B. Budget

This section will not go into the details of budget estimation, but instead will provide some information to consider regarding the budget of the public information (PI) and public relations (PR) side of a mega project. One important issue to consider is that all the PI and PR needs of the project should be known in advance, as much as possible, to be included in full into the final budget proposal. It doesn't help much, if one later finds out that more funds are needed to do a good job at PI/PR. As the government is very cost conscious in it's spending, all PI/PR elements should be justifiable from a safety (e.g. reduction in damages due to reduced road rage)

or public trust (e.g. increase in satisfaction with such and such agency or part of the project) perspective. Ideally, the government has already included minimum and desired PI/PR specifications into its Request for Proposals, which could still leave the contractor to propose more as an optional component the government could take or leave. The optional component should prevent the contractor from being at a cost disadvantage for proposing a more thorough plan.

Along with any possible optional budget components, there should be contingencies build into the budget for PI/PR. Many times the anticipated scope of the work needed is underestimated and gets exposed as the project advances. For example, several meetings of the Woodrow Wilson Bridge project, such as the Stakeholder Participation Panels, made greater demands on staff time not originally planned for as the project progressed; the idea to entertain a bridge design competition was also not previously envisioned. In addition, several political factors, such as the setting up of a project office in Maryland in addition to the required Virginia office (for a parity issue) and the requirement to have a project liaison to interact with the Neighborhood Task Force (performing construction monitoring) established by the City of Alexandria City Council were not anticipated.

Another issue to consider is that the PI/PR budget should keep the entire lifecycle of the project in mind. To date, mega projects seem to do a decent PI/PR job in the planning and environmental phases, but fall short in doing enough during the design and construction phases, let alone the operations phase. This seems to be an indication that the full extent of the total PI/PR efforts during a mega project's life has been continually underestimated. Perhaps PI/PR budgets got drained in the first two phases leaving less for the subsequent ones. The current community relations spokesperson of the Woodrow Wilson Bridge (WWB) project indicated that

the current $6 million budget (around 0.24% of the estimated $2.5 billion project total) allocated for handling all the project's PI/PR needs is not sufficient (Norine Walker, personal communication with Lee Muth, March 16, 2004). She explained that given the project would need the budget for at least 10 of the around 15 total years needed for project completion, yearly funding would amount to only around $600,000. With it, the salaries of only around 6 full-time staff members could be financed. And that doesn't include the expenses incurred though Web designs, advertising, newsletters, promos, costs for town meetings (e.g. hotel space rental), etc. Considering she also indicated that at least 5-6 full-time staff members were needed for the PI/PR side of the WWB project, such a baseline situation would leave less than $100,000 a year for all non-salary expenses. The $1.67 billion T-REX project, in comparison, has around 14 PI/PR staff members working full-time.

A question might arise as to whether, perhaps, PI/PR budgets could be estimated as a percentage of the total project budget. However, that would not seem to work, as a $1 billion countryside transportation project would have fewer PR/PI needs compared to a $1 billion transportation project inside a city. Furthermore, no community is the same. What might easily work in garnering support in one state might not work in another. Of course, none of this even takes into account the particular PI plan being implemented. What it all boils down to is, that a PR/PI budget should be built from scratch, unless the project is a close repetition of a past project (time changes will still have to be accounted for).

Another question might arise as to where in the project lifecycle the largest PR/PI efforts should occur. Here, the construction phase should likely receive more than any other phase. Some of the reasons are that it is at that point where no stakeholder will be able to ignore the project, the most hardship will be incurred, people may start questioning their earlier opinions

and decisions regarding the project, and people will expect information to be of the highest quality. The 24/7 initiatives needed to effectively counter them could easily overshadow any of the other phase requirements. For example, costs may go into counseling and accommodating stakeholders close to the construction sites, updating and maintaining a sophisticated transportation monitoring and routing system (plus reporting) accessible to the public (it should have ideally been set up before the first construction event), frequent stakeholder meetings for providing status reports on the project and discussing unanticipated situations, and paying for the various communication tools (site tours, newsletters, hotline, special road signs, information booths/kiosks, Website, and all the conventional media) to name a few.

C. Schedule

The planning stage, environmental stage, design and constructions stage, and operations stage are the typical life cycle of a mega-project as identified by FHWA, establishing and maintaining public trust should cut across the entire life span of the project for it to be considered successful.

Timing of public involvement with a mega project can never be too early. Most contractors or executors of mega-project fall into the hole of difference between public involvement and public information. While public information says what is going to be done and when it is going to be done, it does not address the consent of the public. One of the most dramatic changes in transportation project planning has been the increased focus on effective public involvement (Matley, 2002).

Mega-projects have adverse effects on the community during and after construction. According to The Management of Mega projects in International Development, mega-projects are by definition highly visible and therefore attract good deal of criticism and controversy.

Opposition tends to come from variety of sources. The local population affected by the construction of a major project will usually consider that it is being asked to assume a high proportion of the costs (especially social costs) associated with the project without enjoying the commensurate benefits (and in many cases no benefit at all). With the above in mind, public involvement and communication should kick off at the conceptual stage of a mega project. One way of doing this is through what Keister and Moreno (2002) called Cutting-Edge Visualization Tools. Taking the time to create visuals that assist public understanding of project impacts early on can avoid costly confusion and disputes later. It is much less expensive to change plans at the conceptual phase than to spend millions of dollars to make changes at the final design or construction phase. This should be done by what is known as Community Impact Assessment.

Community Impact Assessment is a process to evaluate the effects of transportation action on a community and its quality of life. The assessment process is an integral part of project planning and development that shapes the outcome of a project. Throughout the project decision-making activities and until construction, the community impact analyst assures that consequences to the social fabric of an area are given consideration with other environmental impacts (CIA: A Quick Reference for Transportation). Public involvement in mega project is a continuous effort, without a timeline. Matley advised that effective public involvement effort is more an art than science, and each public involvement effort must be tailored to the particular circumstances, context, and players.

Some of the findings by a workshop sponsored by FHWA, American Association of State Highway and Transportation Officials, the Maryland Department of Transportation, and the Maryland State Highway Administration in 1998 clearly supported the fact that public involvement should be open, honest, early and continuous. Also, the landscape, the community,

and valued resources are understood before the engineering design begins. The workshop specified that a full range of stakeholders should join transportation officials in determining the project's scope, clearly defining the purposes of the project, and reaching consensus before proceeding.

Another reason for continuous public involvement is the fact that there might be new people in the community. Meeting lists and community outreach are constantly reviewed. According to Norine Walker of WWB two meeting lists were added to the original list. Walker agrees that public involvement continues to be of paramount importance to keeping information about the project consistent and timely as well as to educate those who are not as familiar with the construction aspects of a multi billion-dollar project. In 2002 and 2003, nearly 130 meetings with communities were held. In addition, several newsletters directed to communities are distributed regularly, weekly activity postings for residents, maintenance of the project's website which has increased to over 400 visits per day. An open door policy and regular public hours two days a week also offer opportunities for the public to inquire about the project. Aside from the initial public involvement in mega projects, it is advisable to maintain a standard schedule for the public to have a full access to any information about the project. A good example is the Woodrow Wilson Bridge PI group, after the initial Big public meetings, the schedule below was set up:

- Fridays- 10 AM to 4 PM "drop-ins" at the Alexandria, VA office -3 conference rooms
- Wednesdays – 9 AM to 3 PM at the Oxon Hill, MD office – 1 conference room
- Town meetings - 4 per month (became poorly attended when there is notice is not published in advance)

While the Southeast Corridor has this on their Public Information Meeting requirement:

"The Contractor shall initiate regular, individual construction meetings in a convenient location for community members in the active construction areas. The purpose of these meetings shall be to update affected parties, resolve complaints, offer promotional items, etc. A member of the Contractor's Public Information Team and a SEC Public Information Team member shall attend all meetings. The Contractor will organize and arrange all construction meetings and extend invitations to appropriate participants as agreed with by the Southeast Corridor project manager and the Public Information team."

Public involvement and communication needs to be evaluated on a regular basis. It is paramount that the PI team feels the pulse of the public quite often. The Southeast Corridor Public Information team included in the PI plans the evaluation of the effectiveness of the contractor's overall communications effort through a performance-monitoring tool developed by the contractor. This may involve periodic research or surveys to collect unbiased, random feedback from affected stakeholders. Also included in the SEC project PI recommendations is that contractor's public information staff will be available 24 hours a day to address project issues. The public information staff will attend weekly Public Information Team coordination meetings with the Southeast Corridor public Information Team. (Public Information, SEC) Frequent and ongoing interaction with the community and public is preferable; this helps to meet community needs throughout the duration of the project.

One of the objectives for a public information strategic plan stated by T-REX is to provide timely and accurate information about the project to residents and commuters. Also T-REX had set up a Community Affairs Strategic Plan- Work Plan, starting from July 2000 to May 2001, with monthly activities and time for such activities that involve the public clearly stated out.

D. Assignments

Establishing public trust during mega project is as important as maintaining it throughout the life span of the project. This requires both human and financial resources, and experts should handle it with enough experience in public relation affairs. Public involvement is not for the unskilled or the untrained- it is crucial that public involvement not be an afterthought when assigning staff (Matley, 2002).

Gaining public trust is a rising concern for mega projects, due to the enormous community impact that comes with it. The bigger the project is, the harder the task of getting public trust becomes. Furthermore, the more diversified the community and other special interest groups the more difficult it is to garner public trust. Gloria Shepherd, Director of the Federal Highway Administration's (FHWA's) Office of Human Environment believes that, an effective public involvement process ensures all communities of early, full, and open access to transportation planning and project-related decisions. PI teams in mega projects have handled public trust through involvement in various ways.

The first and most important way to establish public trust is to establish effective communication between the project team, all stakeholders and the community. Both contractors and government agencies involved in mega projects should strive to be transparent to the public as best as they can. Transparency in the area of the project's budget, how long the project would take, the project's environmental and economic impact on the community as well as its benefits.

Alleviating the inconvenience of the public is another crucial way to building public trust. The Southeast Corridor Public Information team believes the most effective way to minimize public inconvenience is through extensive communication. For the project to be viewed as a

complete success, the community, as well as all stakeholders, must be satisfied with the level of communication about the project.

To achieve public trust and maintain it, the following strategies were laid out in the contractor's Public Information Plan:

- To brand the project in a manner, which will resonate with the community as a project with which they can identify and understand its benefit.
- To build awareness among stakeholders of the project, its vision, goals and its benefits.
- To design an extensive Public Information Plan, which will provide stakeholders the type of information they want, when and where they want it.
- To develop and implement creative methods to communicate construction impacts, goals and milestones to all stakeholders
- To routinely survey and evaluate the program and stakeholders as to how well this objective is being met
- To aggressively keep impacted publics well informed of construction throughout all phases of the project.

The Ohio Department of Transportation's metropolitan planning process is setting new standards for public involvement. The agency has found that the programs focusing on outreach and tailored to a specific community's needs and issues produce community partnerships that enhance project outcomes and public acceptance (Mansfield, 2002).

Some of the key aspects of the public involvement program are:

- No request for a (public) meeting is denied
- The steering committee is inclusive, with strong neighborhood representation

- Graphics are sensitive to neighborhood issues and resources
- Newsletters and resource materials are multilingual (in English and Spanish, with selected portions translated to Chinese by community volunteers)
- Newsletter items relate to neighborhood concerns and cultural resources and
- Small-group neighborhood workshops and charrettes increase one-on-one interaction

The measure taken by the Ohio DOT can also be used to achieve public trust in mega projects.

Jennifer Weeks (2002) agrees that building a bond of trust and partnership with the public requires an understanding of cultural and community frameworks. Addressing language and cultural considerations should be a priority in reaching out to ethnic groups. She also thinks that whenever possible community leaders who can champion the plan or the project development process or who can act as a liaison, to build trust and encourage participation should be identified.

The Transportation Expansion Project in Denver, otherwise known as T-REX has been successful in its outreach to the community and building public trust throughout the project continuum. This can be attributed to the extensive Public Information Strategic Plan put together by the executors of the project. In the Community Relations section of the plan, goal and objectives were fully identified. Also the target audience, strategies and tactics and tools to achieve this campaign were all laid out. The goal of the Community Relation plan was to meet the needs of the community by ensuring all affected parties are satisfied with the level of communication about the project. And the objectives were:

- To provide timely and accurate information about the project to residents and commuters

- To be open and responsive to community needs and requests
- To minimize impacts to the community by collaborating on creative approaches to mitigation
- To facilitate partnerships between the project team and the community

And through news flashes, speaker's bureau, newspaper inserts, community forums, one-on-one meetings with affected individuals, promotional materials, special promotions etc, the PI team will be able to educate community stakeholders about the project before construction begins. With this careful planning and execution, the T-REX team is able to establish public trust and maintain public trust.

Websites are also an effective way T-REX has managed its public relation and maintains its trust. The following was culled from the website www.trexproject.com:

"Posted: 4/22/2004

I-25 will be closed in both directions between Santa Fe Drive and Hampden Avenue beginning at 9 p.m. each evening on Sunday, April 25, and Monday, April 26. These closures are necessary for setting girders for the Colorado Boulevard and Hampden Avenue Bridges. All lanes will reopen by 5:30 a.m. the following day.

During these closures, local traffic will be detoured along Santa Fe Drive and Hampden Avenue. Through traffic should use C-470, I-70/I-225 as an alternate route.

But that's not all that's going on! Click on the links below for additional information."

The above information will minimize public inconvenience and maintain support for the project.

The PI team of T-REX made sure no one is left behind when it comes to building community relationship. Two examples below showed the teams' outreach to children and minorities in the community.

T-REX partners with community organizations to educate the public about the project. An example of such partnership is with Feet First, a non-profit organization that teaches elementary school students about transportation options. Students in grades two through five learn about T-REX during a two-day lesson. Students learn about highway improvements, the benefits of light rail, general project information and phases of construction.

"The T-REX Public Information Team recognized early in the development of the project's public information program the importance of reaching out to the many minority communities in the metro Denver area. That outreach is critical to ensure that these communities in the area are familiar and knowledgeable about the project and what it means to their future.

The project's minority community outreach program involves regular communication with locally elected officials who are minorities or who represent minority constituents, news media with largely minority audiences, organizations that represent minorities or have minority members, and minority-owned businesses."

Another mega project that has not neglected the small but important things in building public trust is the Woodrow Wilson Bridge project. With a strong and creative PI team, this project has been able to enjoy a considerable level of public trust. With effective use of town meetings and other public information plans, the WWB project has been successful in maintaining public trust. Its Bridge Buck program is a creative way of gaining public trust. The Bridge Buck program according to the WWB project is "Designed expressly for commuters who may be affected by construction along the 7.5-mile corridor, Bridge Bucks provides $50 a month, for one year, toward vouchers for alternatives that best suit your needs, whether they are individual transit passes or vanpool costs. Since everyone's commute is unique, Bridge Bucks can be used for a wide variety of options and transit providers that offer excellent service on

north-south commuting routes crossing the construction corridor, as well as routes crossing the Wilson Bridge."

There is also a Kids Corner section on WWB project website to provide fun-like information about the project to children. The I-15 project invested heavily on public involvement and community relation. This helped in establishing and maintaining public trust. The goal of the public involvement as stated on its website is:

"It is our intent throughout the I-15 corridor project to foster public interest in, and understanding of, the choices that are available in making decisions about improving travel in the I-15 corridor and accommodating anticipated traffic volumes safely and efficiently. These decisions must also reflect the role of transportation choices in improving local mobility, and the relationship of transportation improvements and the desired pattern of growth and development in the community.

The I-15 Project Team is committed to a planning process that emphasizes a high level of public involvement during all phases of the project. This means a process that is open and inclusive of all of the community - embracing residents, business people, interest groups, governmental entities, and other potentially affected parties"

According to Byrd and David (2002), the FHWA in co-operation with Florida Department of Transportation sponsored a benchmarking study on Public Involvement in the Development of the Long-range Transportation Plan. One of the areas the compendium focused on were key themes that included the following:

- Educate the public continuously
- Involve key stakeholders early and throughout the process
- Develop partnerships with the media

- Collaborate to maximize resources for public involvement
- Personalize public involvement activities
- Provide incentives to increase participation
- Provide alternatives to traditional meeting places
- Use innovative techniques to define communities and traditionally underserved populations
- Evaluate public involvement activities continuously

With gestures like these, mega projects will not only be successful in establishing public trust, but also will be successful in maintaining it. An important lesson to remember in building public trust in mega project is that it is an ongoing process. Public trust has to be maintained all through the project, and each new stage of the project requires a new tactics.

Evaluation

A. Lead Media Tracking Systems

Not just the project group has to be good at what it does, but the media has to do its job of accurately informing the public on the project too. If the media misinterprets information or jumps to unsubstantiated conclusions there should be a means of noting that and setting them straight as a result. Various media organization may differ in their performance, which should be measured. A sufficient amount of staff should be charged with tracking various press items (at least all the popular ones) and recording any infractions (additionally classified as minor, moderate, and serious) into a database set aside for just that purpose. A relationship will then have to be built between the data entered and the resulting status of a particular press company over a given time period. Would it be bad if one press firm made three infractions, two minor

and one moderate, over a period of one month? It would probably depend on how the other press firms are doing; so a performance relationship among the set of press companies should be established.

However, there should also be an objective measure of what is good or bad performance, as it wouldn't be good for the project and its members if all or most of the press were showing poor performance. Such a situation could indicate that the project's press contact is doing a poor job. The contact may either be giving out false information or be needlessly vague in his/her communication. For the purposes of clearly distinguishing the performance of the project's press contact from that of the press, all communication among the two should be recorded, for which formal communication channels have to be established (e.g. office phone or press meetings only). Needless to say, the recording should be outside both parties' control, but they should be informed of it and give their consent. The same should be arranged for the people in charge for community or other outside relations. One may wonder, if all communication by the project members should be recorded, and given there were no technology or convenience limitations that should probably be the case. For example, false information by the press contact may come from the people supplying the information to him/her or further up the information food chain. Without an objective tracking device, everybody can deny responsibility, and somebody will have to play the scapegoat.

Then there is also the question about how good or bad performance should be addressed. The first action, here, is to make the press aware of their performance. For example, they could be given monthly database reports along with individual appraisals. That alone can set the stage for increased performance in the future. It may also give the press the impression that the project team means serious business. However, it could backfire, if the reports and comments aren't very

meaningful or well-done, let alone false. An appropriate measurement system and reporting format can be agreed on with their input. Since they are tended to in some way, they should be very cooperative (at least the good performers practicing civic journalism, anyway).

Apart from analyzing press releases, the public can be surveyed as to their knowledge and opinion of the project or certain aspects of it, in order to not only gauge public trust, but also determine press performance. Ideally, the respondents should indicate their preferred press, so that correlations can be made between what the public knows and thinks and the actual origin(s) of it all. Not just press performance could be measured with that, but it could also indicate the way information should be handled for the various press organizations. For example, if respondents favoring press X primarily think the project is damaging to the environment, press X should be proactively given any real information to the contrary or a good explanation of why certain environmental issues are unavoidable or how they will be addressed in the future.

Not just press organizations' performance should be monitored, but the suitability of various media formats for information dissemination should be tracked, as well. Regarding the Woodrow Wilson Bridge project, for example, the Website didn't get as many hits as hoped for, and few people used the available public walk-in office hour locations (Norine Walker, personal communication with Lee Muth, March 16 2004). In case of the latter, it is assumed that since they were scheduled during the weekdays, instead of the weekends, fewer people could attend. In case of the Website, it could be because of the content (or lack thereof), the layout, the navigation speed, knowledge about the Website's existence, the public's use of the Web for information (in particular traffic information), or even public access to the Internet (poor and rural communities will fair worse in this regard than rich and urban communities). In case certain

media formats are performing poorly, they should be reworked or, perhaps, discontinued (especially, if the information can be found elsewhere).

B. Marketing Review

The metrics or analytical techniques used in gathering information for public impact in mega projects are variant depending upon the objectives. There is a lot of data gathered during mega projects, and not effectively using such data amounts to zero ROI.

The findings of a community impact assessment are valuable for decision making throughout the planning and development process. Thus, the "findings" are not merely something produced at the end of the assessment. (Brock, et. al., 1996)

It is advisable to benchmark the experiences that have worked in the past. Byrd, et. al., (2002) advised that, you can learn from experience and from the experiences of others about effective methods to engage the public in decision-making. However, there is no one approach that is always effective, and a success in one context may be a flop in another.

The T-REX project, in preparing its Public Information Strategic Plan borrowed a leaf from the Southeast Corridor Team. The T-REX PI team analyzed the information and research already gathered by the Southeast Corridor Project team and benchmarked it. The T-REX project group believed that using the information garnered from the past and future research, the team will:

- Create schedule, cost, impact, methods of handling traffic, environment, communications, etc. parameters for the design-build contractor
- Provide communication guidelines for the design-build contractor
- Identify needs for educating the community stakeholders on the project before construction begins

- Deliver contact information so stakeholders know who to go to for information, questions and concerns;
- Provide a forum for feedback, information and creative solutions
- Provide an evaluation tool to assess the owner's public information effort
- Provide an evaluation tool to assess the design-build contractor's successes and failures (dissemination of coping information, signage, public perception, etc.)

It is advisable to document lessons learned and make use of the information gathered during project planning and project execution. Making use of suggestions by the public gives them a sense of ownership, and thus endears the project to the entire community. Also benchmarking the plans that have worked, not only reduces the cost of research for a mega project, but also increases the project's chance for success.

Each mega project is unique in one way or the other, so it is wise to collect as much data from different projects and make use of their best practices. There are lessons to be learned from past mistakes and successes. This marketing plan has endeavored to point out those public involvement plans that worked and those that failed. However, a public involvement that failed in one project might be a huge success in another.

Conclusion

A. FHWA Leadership

The state DOTs, through FHWA overview, can show leadership without necessarily taking the lead to control the public information process. The T-REX and WWB projects have effectively utilized public information and upheld the public awareness, trust, and confidence while partnering and minimizing the support needed by the DOTs. For the most part, the Big Dig

proved a major disappointment in terms of public awareness, trust, and confidence. This can be attributed partly by the mishandling of the budget by the MTA. However, the more underlying issue was not really being prepared or equipped to function in that capacity.

The best example of how there can be a fully functional public information effort with minimal DOT interaction is provided perhaps by the Woodrow Wilson Bridge Project, which functions very capably through the use of a blended effort of tried and trued professional contractors. This perhaps was to a fault as pointed out by a recent incident involving an apartment complex adjacent to the project called Hunting Terrace. Virginia DOT did take the forefront in the recent appointment of a figurehead to address the Hunting Terrace issue of falling ceilings, but still remains in communication outside of the main public information staff. Some of the reasoning behind this was the observance, in the planning stage of the project by DOT, that a large effort was needed to help displaced families in relocation efforts, but also a realization that there may be jurisdictional issues that could delay actions since Maryland, Virginia and the District of Columbia all have stakes in this project.

Perhaps the best example of how the state DOT and contracted public information specialists can work together is with the T-REX mega project in Denver, Colorado. T-REX has a combined contribution of public information specialists from the Colorado State Department of Transportation (CDOT) and Southeast Corridors Construction (SECC). There was careful consideration early on for specific credentials as recognized experts were selected to handle specific tasks. For example, the firm Strat@com hired a specialist that had experience with other major projects at a national level to handle their major public relations issues. CDOT and SECC each are involved with the public but in delineated areas. However, when special issues arise, the

co-location of their public information team makes communication more effortless and consistent.

The FHWA has correctly stated in their Program Administration report on Lessons Learned that the "oversight" role is very dependent on its relationship with the state DOTs. In turn, the state DOTs have to recognize the importance of this relationship with any contractors awarded state projects. Teaming and partnering throughout the life of the project is necessary to prevent a loss of confidence or the appearance of not being proactive. Through careful research, insight through other projects, and planning with long-term strategic goals, success can be achieved, and the public will be receptive to the possibility of future transportation rehabilitation, expansion and development.

B. Metrics: Evaluating The Public Trust and Confidence

Before project inception, planning and research need to take place to ensure the public concerns are addressed. The Salt Lake City, Utah I-15, T-REX and WWB all utilized contracted agencies to perform surveys and public hearing to gauge public reaction to perceived issues that can be affected by mega project construction. For the most part, these projects were successful in gauging and anticipating public reaction to known issues as encountered by lessons learned from other projects. This seems to have been effectively carried through the planning and environmental stages for all projects, but it is not clear that this is effective at the design and construction and operations stages. There is a concern by the FHWA that indeed this is mostly lacking at the design and construction stage. Tom Sorel, the FHWA Major Projects Group Leader (February 11, 2004) reported that there was a tendency for mega projects to lose public trust and confidence at the design and construction stage.

When different mega project representatives were questioned about what metrics are utilized to gauge the public trust and confidence beyond the planning stage, there was not a consistent answer and the answers varied. Surveys utilized in the planning stage honed in on certain concerns and this information was disseminated and sometimes followed up with town meetings to discuss mitigation and options with the public during public "town hall" type meetings or through open forums that could include selected local representatives, project representatives, local impact or community groups, and other representatives as necessary. However, beyond the environmental stage, more open door policies plus web site and phone contact points are utilized. Public relations representatives mostly handle the responses to these concerns and this is typically a response to an individual concern, not a collected or represented public group.

It is interesting to note that for some projects, there is a perceived notion that many things are going right, but there are really not any metrics in place to either confirm or contradict this. There is a "seat of the pants' approach that goes by gut instinct and lessons learned to respond to project issues. So are the lingering problems not yet addressed that could possibly be anticipated? It is not clear since many of the projects do not have the funding or staff to properly collect, delineate or group the information to analyze for repetitive issues or trends. If past experience could be a predictor, then the lessons learned do provide an abundant source of information to examine for other projects to model.

However, each project is different and responses to concerns can vary. It would therefore seem evident that there needs to be proper forums for public feedback with some compilation of the information being done to look for trends or issues of public concerns. This could also be useful to form predictors to use to help forecast problems as well. Through an analysis of this

information, there could be metric or predictors provided that could be utilized by other similar projects. For example there could be:

1. Percentage indicators from collected information that demonstrates the need to respond to public concerns. For example, the percentage of negative vs. total customer input related to the same concern.
2. Definitive segmented information that can be utilized consistently with other like projects. For example, the number of calls received from transit or highway travelers or bikers or walkers.
3. Objective trend analysis for specific issues that indicate intolerable levels for public concerns. For example, the number of complaints received for noise or congestion.

C. Partnering

Partnering is an effective medium utilized to maintain a high level of unity and communication for a project. It is a structured process that utilizes a trained facilitator that first sets effective ground rules for assembly, and then defines who is represented and what the working relationships are with all interested partners. Often a "Charter" is created and agreed to by all that sets a vision and an agreed to set of goals to accomplish. These goals can then be monitored for feedback throughout the life of the project. The relationship of the partners depends on honesty and fairness throughout the partnering process, with open communication without fear of reprisal or retribution. With an emphasis on fair dealing, partnering tools can be applied to seek resolutions to issues that may come up during the life cycle of the project. There has to be a concerted commitment to accomplish mutual goals for the partnering relationship to work. Can a partnering relationship work outside of the internal stakeholders of the mega project? These stakeholders typically address the schedule, budget, quality, or safety. While

some other concerns can be addressed as well, there has to also be special emphasis on public trust and confidence.

According to the publication "Partnering on the T-REX Project" (undated), the partnering process for T-REX was developed on the principles of critical collaboration of the design-build team members, which typically has more issues and the need for swift decisions compared to design-bid-build projects. T-REX and their contractor SECC employed consistent communication to over 20 partnering task-force teams and the program managers through partnering. Each task-force team had a team leader that provided monthly reports that summarized issues for resolution and presented to an executive board. If am impasse was reached, an agreed too issue escalation ladder was utilized. For T-REX, executives from CDOT, RTD, FHWA, FTA and their counterparts from Southeast Corridor Constructors began meeting in July 2001 in bimonthly Board of Directors partnering sessions. At the initial session, a project charter of mutual goals was finalized, a team evaluation process established, and principles on issue escalation agreed upon. During the partnering sessions, the team goals are reviewed, project status is provided by the project management team, key issues are discussed, and action plans are established.

So how is a partnering effort funded? Often large projects have a commitment between the owners of the project, such as the State DOT, and with the main contractors to commit a certain amount of funds towards the selection of an agreed to facilitator that has a proven track record of facilitation like projects. A large and complex mega project requires an enormous amount of planning and research in the beginning to ensure any problems encountered during life cycle of the project are handled effectively. However, the amount of public relations effort can vary, especially with unique complex mega projects. To help control costs involved with the

unpredictable nature of complex projects, there is usually some type of contingency planned for in the budget. This should be the same approach utilized when considering public relations. It should be carefully planned and researched in the beginning, and planned for throughout the life of the project. To accomplish this, there should be an appropriate budget for public information that has contingent funds for allowing more resources or personnel if needed.

It is not clear that a partnering effort outside of the internal stakeholders has ever been accomplished. It would require a considerable investment to kick-start and maintain this type of arrangement and the logistics to include the right interested parties may be difficult to accomplish. However, this arrangement would certainly work with those involved directly or indirectly with public information. The partners could include the FHWA, the state DOTs, the contractors involved with public information, and the media. Partners could also include selected local representatives and public groups or citizens. The key is to stay involved and effectively communicate to the public the willingness to listen and respond to concerns. Partnering may be an effective way to accomplish this and help maintain public trust and confidence throughout the life of the mega project.

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