

**UNDERSTANDING THE VALUE OF STAKEHOLDER COLLABORATION
FROM THE ONSET THROUGH ALL PHASES OF THE
SPENT FUEL TRANSPORTATION PROJECT**

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ABSTRACT

The transportation of commercial spent nuclear fuel (SNF) and high-level radioactive waste (HLW) requires participation and cooperation from many entities. The Department of Energy's (DOE) approach to developing the Office of Civilian Radioactive Waste Management's (OCRWM) transportation system is to collaborate with its stakeholders from the planning phase of the project through execution of shipments. As the program moves through the continuum of planning, the planning partners (stakeholders) become partners in operations.

Institutional program activities are designed to integrate key stakeholders into transportation planning early in the overall process of project development. The purpose is to identify the issues that need to be resolved, initiate relationship building, and begin to develop a framework by which to recognize agreements and settle differences. Long-term cooperation and the development of working relationships are important to the success of the project. A collaborative process with stakeholders from the onset of the project has been shown to be integral to implementing a transportation system that is safe and secure and merits public confidence.

This paper will describe an increasingly accepted view of the roles stakeholders play in program development of any transportation system and why it is critical to involve stakeholders during the initial phases of the project through execution of shipments. The paper also explores the notion that operations begins much earlier in a program and thinking differently about the timing of operations initiation leads to some different conclusions about stakeholder roles in transportation.

INTRODUCTION

The overall goal of any involvement program is to inform, involve, and seek action. Stakeholder engagement contributes to improving programs, gaining support for an action or ensuring active participation based on roles and responsibilities. Dr. Peter Sandman, an early proponent of broad public involvement in government-led projects and programs, suggests that a wide range of

“stakeholders” should be involved in program development. He further suggests that agencies implementing involvement programs should differentiate the information needs of stakeholder groups. Some only want general information, while others require more specific information such as activities that may directly impact their communities. Stakeholders who have an active role in a program, such as state, tribal, and local emergency responders, law enforcement, and policy leaders, industry, customers and other federal agencies, need involvement that is more specific. The information provided needs to be much more detailed due to the nature of actions for which they are responsible.

Figure 1 illustrates an approach in distinguishing the types of stakeholders during the preliminary planning stages for a transportation program. In the pre-decisional phase, the public will be informed and asked to provide feedback which can be part of an environmental impact statement scoping process under the National Environmental Policy Act. In parallel, dialogue will be initiated with elected and agency officials. In Phase II, after the decision is made to proceed with the project and transportation planning commences, basic information will be provided to interested parties. The focus will shift to collaborative planning with state, tribal, and local officials with responsibilities for some aspect of the shipping program (emergency preparedness, training, and local outreach). When shipments begin in Phase III, information is provided on a need-to-know basis. Required pre-notifications will be made, and tracking, escorts, inspections, and other operational activities will be established involving appropriate state, tribal, and local agency staff and elected officials.

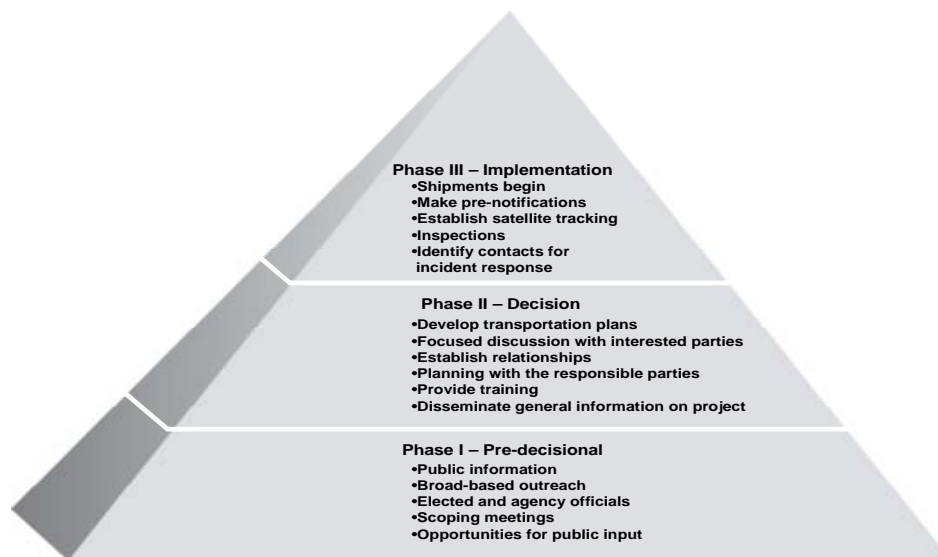


Figure 1. Public Involvement Phases

Basic but important questions could be asked of agencies about their implementation of successful involvement programs. These questions could include when did key stakeholders become involved; who within the governmental or shipping organization engaged them; and what actions did they take to conduct “collaborative” planning? More specific questions could include were “operations” underway when the stakeholders became involved; how did the interactions differentiate from general information sharing and public involvement activities as they are somewhat traditionally conceived; and did stakeholder interactions actually begin an operations activity as opposed to just being an outreach function of a governmental body? This paper will show through examples of various DOE shipping program activities how “operational

planning” became the focus of the stakeholder involvement program activity and that the organizations conducting the involvement were the ultimate shipping organization.

DOE STAKEHOLDER ENGAGEMENT EXPERIENCE

DOE’s past experience transporting transuranic waste to the Waste Isolation Pilot Plant (WIPP), conducting the Foreign Research Reactor (FRR) Spent Nuclear Fuel Acceptance Program, managing shipments of spent nuclear fuel for the Naval Nuclear Propulsion Program (NNPP), and from West Valley in New York State have shown that interaction with interested and key stakeholders is critical to mission success. On-going benchmarking studies by OCRWM confirm the importance of stakeholder involvement. Analysis of lessons learned reports from decades of radioactive waste shipments shows that stakeholder participation in shipment planning is one of the primary issues of concern to stakeholders, and establishes effective planning tools for operations.¹ The following describes how stakeholders have contributed to these DOE programs and illustrates the segment of the operation that provided the avenue for involvement.²

Waste Isolation Pilot Plant (WIPP)

WIPP is organized into two major divisions related to transportation. One is the logistics operation which involves stakeholders, primarily states and tribes and carriers in planning a broad range of program activities including equipment acquisition. Stakeholders were engaged in developing program documents including:

- *Disposal Decision Plan* – State regional groups and tribes commented on this roadmap leading to WIPP operations;
- *WIPP Transportation Safety Program Implementation Guide* – The Guide documented a set of operation expectations negotiated with Western states;
- *WIPP Transportation Plan* – Affected states prepared procedures for implementing their own functions under the Implementation Guide and continues to function as a planning basis;
- Routing strategy plans and shipment preparations were coordinated through regional and tribal meetings.

In addition to developing major documents, key stakeholders were involved in preparedness for WIPP operations through extensive training programs that enlisted local officials, readiness reviews, demonstration of the WIPP Program Implementation Guide through application to other shipping campaigns, pilot testing enhanced inspection standards with the Commercial Vehicle Safety Alliance (CVSA), and planning and emergency exercises with WIPP.

The other major division is the Public Affairs Office which provides educational programs, conducts media and press relations activities, and serves as a support function for emergency exercise communications.

Foreign Research Reactor Spent Fuel Return Program

FRR planning was conducted by a team composed of headquarters DOE program and transportation staff and site operations staff from Savannah River and Idaho. State regional groups were employed by the site FRR managers to convene states affected by FRR shipments to review plans and operating procedures and provide information about state contacts for planning, emergency preparedness, security, radiological inspections and public information. According to one FRR official, inclusion of stakeholders in operations planning can add time and resource requirements; however, the payoff is greatly increased confidence that any reasonable,

predictable contingency has been taken into account. The FRR program involved state and tribal officials in similar activities as did WIPP: planning, training, exercises and readiness reviews prior to shipments. Extensive lessons learned were captured after each shipment so that the process of shipping would be improved. A major difference between WIPP and FRR was that FRR had many additional stakeholders involved, including the Coast Guard, Customs, Naval and Army bases for ocean shipment and import, Nuclear Regulatory Commission (NRC), and the Federal Railroad Administration (FRA) and rail and truck carriers. These additional stakeholders were involved at the early stages of shipment planning so that their operations could be factored into the overall schedule and shipment evolution, just as the states and tribes were. A memorandum of agreement was established with the Coast Guard to establish exclusion zone enforcement for the inbound ships carrying the foreign fuel. Working relationships were established early with two ports identified for the shipments, the Concord Naval Weapons Station in California and the Charleston Naval Weapons Station in South Carolina. An earlier shipment of FRR under an emergency provision came into the Sunny Point Army Depot in Wilmington, North Carolina, and was shipped by rail to the DOE Savannah River site in 1994.

Naval Nuclear Propulsion Program

The logistics officer for the NNPP shipments is the lead to participate with state organizations through state regional group meetings. The main function of the interaction is to inform participants about the general history, rationale for the NNPP program and general information about shipment activities. Due to safeguards requirements, the NNPP does not pre-notify state or tribal governments about specific shipment activities. The NNPP does hold biennial exercises with states in the various regions of the country through which they ship. Those exercises involve specific participants from states and tribes as well as local officials who have expertise and responsibilities for emergency response, law enforcement or health care in their jurisdictions. The lead from the NNPP program usually is the logistics manager or the emergency management officer. NNPP escorts also participate in the exercises. Railroad crews are also participants in these events. Through its shipment accident exercise program, the NNPP validates its emergency planning with state, tribal, and local emergency services organizations. This planning covers emergency communications links.

West Valley Shipment

The final DOE shipping campaign of note was the West Valley shipment of commercial spent nuclear fuel from New York State to Idaho. This shipment used much of the same planning processes as the other WIPP and FRR shipping programs discussed previously. Extensive route planning and analyses were conducted for the shipment. Enhanced security requirements were also in place because it was made less than two years after the September 11, 2001, terrorist attacks. DOE logistics and security staff were leads for this shipment. Contracting with the railroads for the cross-country shipment was a long process, due in part to questions of liability and security concerns of the railroads. Table 1 presents the functions and participating agencies in the WIPP, NNPP, FRR, and West Valley shipping programs.

Table 1. Program Functions and Participants

Program	Function	Agency Participant(s)	State Participant(s)	Tribal Participant(s)	Other Agencies/ Carriers
WIPP	Transportation Planning	Logistics/ Institutional Mgr., Emergency Mgmt., Security Officer	Policy, Emergency Mgmt., Law Enforcement	Emergency Mgmt., Law Enforcement	Drivers
WIPP	Emergency Exercises	Logistics/ Institutional Mgr., Emergency Mgmt., Security, Public Info. Officer	Emergency Mgmt., Law Enforcement	Emergency Mgmt.	Drivers
NNPP	Information	Logistics Manager	Policy, Emergency Mgmt., Law Enforcement	Emergency Mgmt., Law Enforcement	Train Crew
NNPP	Emergency Exercise	Logistics Manager., Emergency Mgmt., Escorts, Public Info.	Emergency Mgmt., Law Enforcement, Rad. Health, Public Info.	Emergency Mgmt., Law Enforcement	Train Crew
FRR	Transportation Planning	Logistics/ Institutional Mgr., Emergency Mgmt., Security Officer	Policy, Emergency Mgmt., Law Enforcement		Coast Guard, Military Ports, NRC, FRA, Customs, Railroad
FRR	Emergency Training	Emergency Mgmt., Public Info.	Emergency Mgmt.		Coast Guard, Military Ports, NRC, FRA, Customs, Railroad
FRR	Readiness Reviews	Logistics, Emergency Mgmt., Security, Public Information			Military Ports, NRC, FRA, Customs, Railroad
West Valley	Planning	Program Mgr., Emergency Preparedness, Security, Public Info. Officer	Law Enforcement, Radiological Health, Emergency Mgmt.	Tribal Council, Chairman, Emergency Management	Train Crew, Rail officials
West Valley	Readiness Review	Program Mgr., Emergency Preparedness, Security, Public Info. Officer	Law Enforcement, Radiological Health, Emergency Mgmt.	Emergency Management	Train Crew

PITFALLS OF IGNORING KEY STAKEHOLDERS

Two programs that did not recognize that all stakeholders need to be identified early in planning learned the hard way that state and local officials have a legitimate role in agency plans for highly controversial shipments. In 1998, the Navy attempted to ship napalm from an ordnance installation in California to a treatment facility in Indiana. Although napalm in its storage or shipping configuration is no more hazardous than other bulk materials, the Navy's shipment planning did not engage state or local officials to inform them about the shipment. A freight train carrying the material was turned back when the recycling company facility, bowing to political and public pressure, refused the shipment. The public was concerned about the ability of fire departments along the route to handle a napalm fire and the fact that the Navy did not make its plans known to the key emergency managers and local fire fighters resulted in the shipments being transported around the country until it was finally able to be sent to another treatment facility after extensive work with state and local emergency managers.³

Another program that is having similar problems is the Army's Chemical Demilitarization Program. One of the facilities in Indiana had treated chemical weapons and needed to ship the effluent from the treatment. The first attempt was to send it to an east coast disposal facility, however, the key stakeholders from state and local governments were not engaged by the program leads for the Army, and again, the disposal facility backed out of the program due to public concern. At last report, the Army was consulting with state and local officials about the shipping campaign, and a new disposal facility had been identified. Shipments were being planned with the help of the state and local stakeholders.⁴

FUTURE DOE SHIPPING ACTIVITIES

The Office of Logistics Management (OLM) was established to design and implement a transportation system to support waste acceptance and disposal. Under OLM, OCRWM began to build the framework to support development of this system by initiating and maintaining interactions with its stakeholders. OCRWM announced collaborative efforts and more recently, identified specific programmatic activities for stakeholder participation in a draft *National Transportation Plan*. The range of stakeholders includes industry participants, such as rail and trucking companies, vendors that construct rail infrastructure, state, tribal and local government officials, other federal agencies, internal DOE organizations and other contributors to and users of the transportation system.

The extent and method of interactions with interested parties should be tailored to meet transportation programmatic needs and address the decisions occurring at each stage of the program. The approach outlined does consider how the stakeholders contribute to the operations, and it appears to focus on operational issues. Five major categories of stakeholders are expected to have a role in planning and implementing the OCRWM transportation system.

State, Tribal and Local Governments

State and tribal governments have primary responsibility for health and welfare of their citizens and the environment.⁵ In that role, state and tribal governments along with local agencies respond to and manage emergencies within their jurisdiction and are responsible for developing their own plans and procedures for responding to an incident involving radioactive materials shipments. Activities related to routine transportation of radioactive materials include point-of-origin and in transit inspection, escorts, monitoring shipments via satellite tracking, establishing alternative preferred routes, public information, and other operational activities.

Other Federal Agencies

Other federal agencies will have a critical role in transportation planning and oversight. Key interfacing federal agencies include NRC, U.S. Department of Transportation (DOT), Federal Motor Carrier Safety Administration (FMCSA), FRA, Department of Homeland Security (DHS), and the Federal Emergency Management Agency (FEMA). The NRC, DOT, and FRA are regularly involved in focused discussions on a number of discreet activities while other agencies are still gathering general information about the program. According to the NWPA, as amended, OCRWM must use casks certified by the NRC for transport and follow NRC shipment pre-notification requirements.

Utilities

The electric utilities and DOE have negotiated waste acceptance contracts that stipulate DOE will take title to the SNF at the gates of reactor sites in return for a specified fee. Because more than 100 reactors will be involved, the technical interfaces of reactors of different designs, along with the transportation, storage and aging canisters and any related equipment that DOE plans to procure, will necessitate substantial utility interactions during shipment, planning, scheduling, and operations.

Utilities regularly interact with state, tribal and local governments as part of their emergency planning activities. They also have well developed public information and education programs. Collaborative efforts between utilities and DOE are expected. Utilities will need to be involved in operational readiness reviews and respond to media inquiries as public attention focuses on specific transportation shipments as DOE moves forward with its shipping campaign. Early involvement of the utilities for campaign planning, including gathering technical data to be sure cask and carriage will suit the specific utility needs, and to solidify relationships through formal and informal arrangements will be crucial to the success of these shipments.

Transportation Industry

OCRWM has identified three major transportation industry groups that will need to be involved in development of OCRWM's transportation system: (1) cask designers and manufacturers; (2) rail car manufacturers and rail line constructors, and (3) commercial carriers and transportation logistics contractors. Transportation logistics firms offer a range of services to carry out shipments safely and efficiently. These include the management and organization for shipments, and coordination with transportation carriers. Transportation carriers include specialized trucking companies and railroads that will move NWPA shipments. The industry is engaged in early planning through the DOE sponsored Transportation External Coordination Working group (TEC), (discussed below) which is reviewing a draft *National Transportation Plan*. Other opportunities for industry participation have included Requests for Information in which OCRWM solicited input into contracting requirements for construction of rail infrastructure in Nevada. Other key documents have been provided to industry and other stakeholders for their information about future operations, including a Concept of Operations.

AVENUES FOR ENGAGING STAKEHOLDERS

Currently, OCRWM uses a variety of forums to exchange information and develop plans with national organizations and groups, other federal agencies, national special interest groups, and

national labor organizations. This kind of general planning has established general frameworks for shipping campaign features for other programs in the past. These venues are described below.

Transportation External Coordination Working Group

One of the principal means OCRWM interacts with stakeholders and the general public is through TEC. OCRWM co-chairs TEC with DOE's Environmental Management Program (EM). TEC provides an opportunity for broad-based input and information exchange from organizations representing the utility and transportation industries, state, tribal, and local governments, other federal agencies, police, fire, and emergency management professional organizations, and labor unions. TEC conducts planning research and provides its findings to DOE on specific issues through semi-annual meetings, and through subject-specific topic group meetings which enable a smaller number of participants to focus intensively on key issues. Recently, topic groups have addressed tribal, rail, routing, and security issues.

Over the years, TEC members have provided input to DOE on transportation protocols, training, information products, consolidated grants, and shipment inspections. One product was development of DOE Manual 460.2-1, *Radioactive Material Transportation Practices Manual* issued in 2002. The Manual establishes a set of standard transportation practices for DOE programs to use in planning and executing offsite shipments of radioactive materials including radioactive waste. The TEC is the single DOE sponsored forum where early planning for shipping campaigns is presented. For example, during the last TEC in July 2007, the EM program engaged the group in an early planning discussion about upcoming cross-country shipments of spent fuel.

National Organizations

Under a cooperative agreement, the National Conference of State Legislatures (NCSL) organizes a High-Level Radioactive Waste Working Group. NCSL provides OCRWM with an opportunity to interact with state legislatures, including those who have committee responsibilities for transportation, and to provide information and coordination with other intergovernmental activities. The NCSL provides a policy overview, but because the Working Group engages state legislators, the local concerns are raised early, even prior to specific campaigns being finalized.

Another group supported by OCRWM through a cooperative agreement is the Commercial Vehicle Safety Alliance (CVSA). CVSA has already developed inspection protocols for Highway Route Controlled Quantities of Radioactive Materials, and the organization is involved in training inspectors and monitoring the states' truck inspection program. CVSA has developed the North American Standard Level VI Inspection for inspecting drivers, equipment, and cargo involved with transporting SNF, HLW, and transuranic waste. In addition, CVSA also completed the evaluation of the implementation of inspection policies for SNF and HLW through a peer review group.

These two organizations provide early information to DOE about issues related to shipments both prior to operations and during operations through feedback from their committees.

State Regional Groups

State Regional Groups (SRGs) anchor the collaborative process with the states. OCRWM has executed cooperative agreements with four SRGs:

- Council of State Governments' (CSG) Northeast High-Level Radioactive Waste Transportation Task Force
- CSG's Midwestern Radioactive Materials Transportation Committee
- Southern States Energy Board's Radioactive Materials Transportation Committee
- Western Interstate Energy Board's High-Level Waste Committee.

The Department interacts frequently with these groups on other shipping programs and relies on them to provide consolidated state input on various topics and to assist with transportation plans, regional lessons learned, routing studies in their regions and convening the operations specialists from the states to assist with shipments, including routing, training, inspections and communications. OCRWM meets twice a year with each of the SRGs and participates in conference calls or other meetings as needed. During prior shipments, the SRG's have coordinated calls addressing issues facing specific campaigns and have developed checklists for readiness reviews with all parties to the shipments.

OCRWM and Tribal Government Collaborative Approach

OCRWM has identified approximately 50 tribes located along potential rail and highway routes to Yucca Mountain based on the *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* issued in 2002.⁶ OCRWM is working with these tribes to determine an efficient and effective consultation process with their tribal governments and has met with several tribal leaders and councils to discuss its transportation program. OCRWM hosted a Tribal Workshop with these tribes in April 2007 to continue to discuss and identify a range of approaches for consulting with tribal leaders and technical staff on many of the same issues important to state officials. The workshop also informed tribes of the status of the program, current activities being addressed, and the role tribes can play in developing the transportation system. Tribal officials in turn, appointed specific people to participate in the TEC Topic groups, to report back to the larger group and to serve as spokespersons for a tribal caucus group that was formed to interact with OCRWM on shipment planning.

Local Interactions

Local officials are uniquely qualified to provide information on transportation conditions and impacts within their areas of jurisdiction and are important participants in developing procedures for controversial shipping campaigns. Representatives from the National Association of Counties and National League of Cities participate in TEC to provide planning input from the local perspective. In addition, state officials coordinate specific planning and training activities with local officials for DOE shipments. A greater emphasis on work with local officials, particularly in Nevada, is advised for the OCRWM program as others have recognized. Most recently, the National Academies of Science panel on spent fuel transportation issued a report, *Going the Distance? The Safe Transport of Spent Fuel Nuclear Fuel and High Level Radioactive Waste in the United States*, that advised that DOE should focus its attention on local officials because of their unique responsibilities for public health and safety.⁷ The recently published draft policy for funding states and tribes appears to support this approach.

FUTURE STAKEHOLDER INVOLVEMENT

As the transportation system moves through the continuum of operations, there will be increased reliance on stakeholders and planning partners from a variety of interests, including federal agencies, state, tribal and local governments, the transportation industry and the utility customers. They will have an opportunity to contribute to operational planning and implementation of the transportation program early in development, which can be characterized as “operations”, not just early planning or information sharing. Some of these activities include:

- Route Identification - OCRWM has started a process to identify routing criteria, initially focusing on potential rail routing that involves working with rail and trucking companies, states, tribes and local officials. The work is being conducted through the TEC Routing Topic Group, the state regional groups and directly with railroads at this point. OCRWM has informed these participants that they plan to solicit broader public input on routing criteria and the process for developing a set of routes. Legislation, industry standard practices, DOT requirements and analyses of regional routes by state organizations all need to be considered as part of DOE’s identification of a preliminary set of routes.
- Operational readiness – Readiness reviews include validation of procedures and planned responses to confirm that plans actually work and communication channels are open and accessible. Readiness reviews would involve origin sites, carriers, and the repository, and state, tribal, local and other federal agency officials. The outcome will be a demonstrated capability rather than a proposed capability benefiting all involved entities. Operational readiness reviews encompass planning tabletops, practice runs and operational exercises. Readiness reviews also identify gaps in operational readiness.
- Campaign planning – Other DOE shipping programs have managed shipments as a series of campaigns with a campaign defined as those shipments from a single origin site to the repository. A site campaign plan contains step-by-step, real-time instructions for completing a shipment from an origin site. Agreements on specific roles and responsibilities and details of site campaign plans should be coordinated with the shipping site, states, and tribes and commercial carriers so that all parties can plan well in advance and organize the appropriate training and resources.
- Emergency preparedness – States and tribes must be engaged to evaluate preparedness for safe routine transportation as well as emergency response capabilities. Section 180(c) of the NWPA provides for funding to ensure that state, tribal, and local safety officials are adequately trained. OCRWM has been working with states and tribe to refine the approach for implementing Section 180(c) and to coordinate and integrate this program with existing training programs for state, tribal and local emergency responders.

CONCLUSIONS

The path toward developing a safe, secure, efficient transportation for shipments of SNF and HLW to Yucca Mountain will require the participation of many interested parties. Recognizing that substantial teamwork will be involved, a long-term approach appears to be underway, based on existing documents and personal experience that recognizes that relationships built at the very beginning of shipment planning are key to successful operations. The activities being conducted early in the process to establish and maintain good relationships have been announced and include route development, emergency preparedness, campaign planning, and negotiations on roles and responsibilities of the various stakeholders and the Department. Although OCRWM is

at the beginning of the process, the collaborative approach being established should provide a sound framework for addressing operational priorities and the foundation for ensuring coordination with all interested parties: the DOE, utilities, carriers, the repository, states, tribes and local officials and other federal agencies. Engaging stakeholders from the start enables a proactive cultivation of relationships that can serve as a strategic advantage during challenging times, and in fact is the beginning of an operational program.

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