American Society of Civil Engineers
World Headquarters
1801 Alexander Bell Drive
Reston, VA 20191-4400

Web: http://www.asce.org

ASCE American Society of Civil Engineers

Report to Tom E. Cole, L.S., P.E.
Chief Engineer
Division of Highways
Idaho Transportation Department

ASCE Peer Review
October 20 – October 24, 2008 Districts 4,5 & 6
October 27 – October 31, 2008 Districts 1 & 2
November 10 – November 14, 2008 District 3 & Headquarters

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ASCE Peer Review Teams

Team 1 - South Districts (Districts 4, 5 & 6)

Thomas J. Eggum, P.E., F.ASCE, Team Leader
Director of Public Works (Retired)
City of St. Paul, MN

Ron Lundquist, P.E., M.ASCE
Director of Public Works (Retired)
Monterey County, CA

Dale Wegner, P.E., M.ASCE
County Engineer
Coconino County, AZ

Benny J. Young, P.E., M.ASCE
Director of Highways and County Engineer
Cochise County, AZ

Team 2 – North Districts (Districts 1 & 2)

Carl Blum, P.E., F.ASCE, Team Leader
Deputy Director of Public Works (Retired)
Los Angeles County, CA

Kent Lande, P.E., M.ASCE
Vice President & Chief Engineer
The Louis Berger Group, Inc
Glen Allen, VA

Stu Moring, P.E., M.ASCE
Director of Public Works
City of Roswell, GA

Greg Ous, P.E., M.ASCE
Assistant District Engineer
Minnesota Department of Transportation
Mankato, MN

Team 3 – Headquarters and District 3

Carl Blum, P.E., F.ASCE, Co-Team Leader
Deputy Director of Public Works (Retired)
Los Angeles County, CA

Thomas J. Eggum, P.E., F.ASCE, Co-Team Leader
Director of Public Works (Retired)
City of St. Paul, MN

H. Edmund Bergeron, P.E., M.ASCE
President, H.E. Bergeron Engineering, Inc.
North Conway, NH

Gary J. Erickson, P.E., M.ASCE
Director of Public Works (Retired)
Hennepin County, MN

Frank E. Votapka, P.E., M.ASCE
Technical Services Staff Officer (Retired)
Kootenai National Forest, MT

A. Introduction

The Idaho Transportation Department (ITD), Division of Highways extended an invitation to the American Society of Civil Engineers (ASCE) to provide a public agency peer review of their organization. A peer review is a structured process that helps an agency such as the ITD, Division of Highways improve its performance. To accomplish this goal a peer review team (PRT) examines the agency's mission, objectives, policies, resources, and management practices. The PRT works to identify key issues and opportunities the organization currently faces. The PRT consists of professional engineers whose breadth of management, as well as technical experience, positions them to help other public agencies improve their service.

ASCE and the PRT designed the three week review of the Division of Highways to give the agency a management picture of itself, a snapshot in time. The PRT interviewed a cross section of individuals representing the diverse set of responsibilities within the Division of Highways as well as staff from other divisions within ITD that support the division's mission and outside cooperative agencies. While the PRT identifies issues and opportunities that it sees challenging to the agency, it does not promise direct solutions to problems. It believes that such solutions will emerge from the organization itself.

ASCE and the PRT customized this peer review so it would meet the concerns of Mr. Tom E. Cole, L.S., P.E., Chief Engineer, Division of Highways. Mr. Cole's goal for the peer review was to ensure that the Division of Highways is prepared to carry out its responsibilities now and in the future. Items Mr. Cole asked the PRT to pay particular attention to include:

1. Planning and budgeting of highway maintenance, preservation and improvement projects for proper integration, coordination, and priority.

2. Budgeting of highway preservation and maintenance for adequacy.

3. Highway programming for success (delivery, quality, budget control, etc).

4. Outsourcing of professional services and practices by ITD.

5. Grant Anticipation Revenue Vehicle (GARVEE) bonding program oversight and management.

6. Training adequacy.

7. How ITD's management and governance structure compares to industry standards and best practices.

The PRT performed an initial study on the above issues comparing them with the Idaho Legislature's concerns for ITD. This study is available in Attachment A. In addition, the PRT cross-referenced the above issues with this report in Attachment B.

The PRT conducted confidential individual interviews with 173 Division of Highways staff consisting of 147 district staff and 26 headquarters staff. The PRT also interviewed 29 staff from other divisions within ITD, which support the Division of Highways's activities and 15 staff from partner agencies such as the Federal Highway Administration (FHWA) and the Ada County Highway Department (ACHD). In addition, the PRT reviewed 187 pre-review questionnaires from Division of Highways staff and documents describing the department's organizational structure, staff resumes and job descriptions, available policies and procedures, and work programs. The PRT met with Mr. Cole and ITD leadership invited by him on Friday, November 15, 2008 to discuss their findings. In addition, Gary Erickson, P.E., M.ASCE presented the PRT findings to the ITD Board on November 20, 2008.

B. ITD Strengths

The PRT observed the following strengths of ITD:

1. Management and Structure. Overall government structure and management appears compatible with other state transportation organizations. Specific recommendations related to management and structure are provided in sections D and F of this report.

2. Staff Attitude and Capability. The PRT was impressed with the competence, cooperative attitude, and dedication to improvement on the part of virtually all ITD staff encountered. ITD employees take a lot of pride in their work and strive for quality work products.

3. Mission, Vision, and Goals. ITD has prepared mission, vision, and goals statements as part of a previous strategic direction setting process. This sets the stage for further leadership and management improvement efforts.

4. "New" Management Team. ITD has a relatively new management team at the executive level of the department. This can provide a fresh look at policies and practices throughout the department, particularly within the Division of Highways, the largest of ITD's divisions.

5. Executive/Board Relationship. The board has a statutory role in ITD governance. The PRT noticed a mutually respectful relationship between ITD board members and the ITD executive management team.

6. Engineering Standards. The Division of Highways has extensive engineering standards and design policy documents available to guide engineering work done for the department.

7. Public Image. The Division of Highways staff takes pride in their image with the traveling public and has earned their confidence that public safety is always the primary goal of ITD.

8. Functional Team Communication. The PRT observed very good communication among geographically dispersed professional groups (e.g. environmental specialists, procurement, and right-of-way). These represent good models of communication and might be productively engendered among all disciplines.

C. Transportation Service Crisis

The PRT concurs with the concerns expressed by nearly all ITD staff interviewed concerning the looming crisis in transportation service quality. The highway revenue shortfall and the increasing costs of delivering services are leading to a significant decrease in the service provided. Flat operating budgets, lack of adequate capital investment, population growth, construction and maintenance cost inflation, and aging facilities are combining to eventually cause a reduction in service levels that will directly affect the traveling public and negatively impact the state's economy. This crisis needs to be addressed immediately.

The funding solutions clearly summarized in the proceedings from Idaho's Transportation Funding Conference or an equivalent financial solution set needs to be adopted and implemented very soon. Management and efficiency improvements should continue to be pursued in parallel but cannot begin to address the problem absent substantial additional funding.

D. Key Opportunities for Improvement

The PRT identified ten key issues in addition to the Transportation Service Crisis that, if focused on, can significantly improve the success of the ITD Division of Highways in carrying out its responsibilities.

<u>Key Opportunity 1:</u> Team Building

a. Senior manager positions have had a high level of turnover. This has set the stage for challenging the status quo and as a result, major changes are underway. The team, including those at headquarters division level and at the district engineer level, needs to focus effort on leadership and team development.

b. Team building may be accomplished with either in-house or outside facilitation, but is not likely to evolve satisfactorily on its own.

Key Opportunity 2: Strategic Planning

a. The strategic planning initiative currently being developed at headquarters is timely and can incorporate existing initiatives and identify new ones, including those suggested by the PRT.

b. The ITD mission and vision has been established, but needs to be well communicated throughout the ITD especially to the districts. The mission and vision will guide new work on the strategic plan and may be modified as a result of the new effort.

c. The PRT recommends a SWOT (strengths, weaknesses, opportunities, threats) analysis be done to set improvement goals for each unit in the Division of Highways. These improvement goals could be created with staff participation and include follow-up which leads to action plans and measurement metrics.

d. The goal setting and action plan can be incorporated into the performance appraisal process.

e. The strategic planning process could be used to integrate and prioritize the varied major initiatives planned for and underway in ITD, e.g., decentralization, practical design, and "vital few areas" performance measurement. This might make these related initiatives clearer to staff.

f. The PRT suggests that all ITD staff be involved in the action plan related to the strategic planning initiatives. Staff participation from the top down and bottom up will increase ownership, understanding of the plan, and the likelihood of the plan's success.

Key Opportunity 3: Decentralization

a. During the review, the PRT learned about a major decentralization initiative for the Division of Highways. Because it was started relatively recently, there are no significant results or trends to evaluate. However, the PRT heard from staff interviewed that a previous decentralization effort did not deliver the desired results. The Division of Highways might consider obtaining input from senior staff that were in the division during the previous decentralization and benefit from their experiences.

b. Defining the necessary core functions that need to remain centralized

will be important in the decentralization process and functions that are to be decentralized require clear explanations of how authority and accountability will be managed. Also, the authority, accountability, and responsibility for decentralized work functions must be decentralized to the district. The PRT recommends that ITD clearly articulate which responsibilities are to be delegated to the districts and which specialty areas should be retained in the headquarters office.

c. ITD could involve staff throughout the organization in the evaluation and details of decentralization, both through the "chain of command" and laterally through functional areas. Interviewed staff members did not feel encouraged to participate in feedback on this initiative or that their input would be welcome. By its very nature, decentralization of both authority and accountability must be thoroughly understood to be effective.

d. Decentralizing action items could be reduced to clear policy statements for communication to staff. ITD Division of Highways staff expressed a need for more communication from headquarters and this would be a fine opportunity to do so.

e. The PRT suggests that decentralization be evaluated, adjusted as appropriate, modified if necessary, and reinforced in 12 to18 months from its start date.

Key Opportunity 4: Staff Resources

a. The PRT regularly encountered capable and dedicated Division of Highways staff that value their careers with the division. In general, they feel adequately supported with modern equipment and up-to-date technology. Nevertheless, this overall positive situation may deteriorate due to very low starting salaries, relatively low and compressed salaries at middle levels, and knowledgeable senior staff on the verge of retirement. In addition, flat annual operating budgets may preclude keeping equipment and technology up to date.

   Moreover, at the starting salary rate for transportation technicians providing the only family income, their families are eligible for food stamps. This seems unfair to new staff and embarrassing for the state. Furthermore, it results in hiring registers with candidates who are not likely to perform up to ITD expectations. It is clearly understood by management experts that those who can't meet the lowest level needs of food, shelter, and security are poorly equipped to do their job adequately.

The Division of Highways needs to develop recommendations and appropriate justification for increasing the operating budget including salaries.

b. The PRT found that trained and experienced staff at mid-level have been lured away by consulting firms and local governments due to a negative salary differential. This is countered somewhat by a reported low employee turnover rate and may be temporarily slowed by the current economy.

c. The PRT interviewed and was favorably impressed by many very senior staff. ITD will lose many of these in the next few years due to retirements. The Division of Highways could consider implementing a succession planning process to capture and pass on this invaluable institutional memory.

d. While not a substitution for adequate compensation, management at all levels could institute a staff recognition program in order to recognize ITD's outstanding staff contributions.

Key Opportunity 5: Professional Development

a. Leadership and management development training, chosen with care, offers ITD tremendous potential for long term improvement. Engineering based organizations need to give the same strong emphasis to leadership, management, and supervisory development that they give to technical training and development. Supervisory and management training can usefully become a requirement for advancement into leadership positions.

b. The division offers many opportunities for technical training, particularly on engineering topics. However, opportunities are not universally communicated. The PRT found that staff who take an initiative to request training fare better than those who wait for guidance. The PRT suggests that if self-directed development is the division's intent that this be communicated to staff, perhaps during annual performance appraisals.

c. Training and professional development can be offered in many ways including workshops and conferences, in-house sessions (in-person and video presentation), web-based training, on-the-job training, additional college level courses and mentoring. In addition, management could encourage professional society membership and participation as another method of professional development.

d. The Idaho Engineer's Board will be requiring continuing education to maintain an engineer's P.E. license within the next few years. ITD training could be coordinated (approved if necessary) with the engineer's board in order to allow its programs to be used to satisfy this requirement.

e. Training at all levels could be regularly documented and retained for reference. Minimum training, technical or supervisory and management, as appropriate, might be considered as a requirement for promotion at all levels. Alternatively, appropriate training could be considered upon promotion.

Key Opportunity 6: Maintenance

a. Flat budgets combined with increased costs due to the expanding highway system and inflating fuel, materials, and contracting expenses may be leading to deferred maintenance and decreasing highway service levels. As a result, maintenance philosophy appears reactive instead of proactive, which can lead to organizational inefficiencies and missed cost saving opportunities.

b. Advocacy for maintenance of ITD's assets by senior management seems muted compared to the more enthusiastic attention given to the design and construction of projects. The PRT suggests that maintenance be given a strong voice on the senior management team.

Key Opportunity 7: Management Information Systems

a. A statewide project management system does not currently exist at ITD. Individuals who need to schedule project development activities are filling the void with either excel spreadsheets or off-the-shelf software. ITD may benefit from a statewide project management system that lists and tracks district and headquarters project development activities to ensure the critical activities are tracked and managed for both offices. This will ensure proactive project management of deadlines and deliverables so that construction projects are delivered on time and on budget.

b. The PRT found that the existing pavement management system is well prepared but inconsistently used among the districts.

c. The PRT understands that a Maintenance Management System (MMS) was previously used, but abandoned due to incompatibility with a new finance system. A replacement MMS system was widely advocated by staff and should be replaced as soon as possible.

d. Geographic Information Systems (GIS) appears to be recognized as a desirable tool, but is not used in a coordinated manor. ITD might develop a functional department wide GIS that will integrate users needs for planning, design, and reporting. Coordination with other state and regional agencies could also be considered.

Key Opportunity 8: Communications

a. The PRT observed a lack of adequate communication between planning, design, construction, and maintenance. All sections could be encouraged to communicate laterally across functional areas to ensure that process and plan improvements can be communicated early, to reduce plan rework prior to awarding of contracts, reduce the need for changes in the field, and to ensure that "future maintenance issues" are not being designed into the plan.

b. From a corporate prospective, the predominant communication style of ITD was "meet and inform." While this strategy works for some situations such as policy directives, it appears that ITD has struggled to implement corporate changes because of this top down communication style. ITD might consider how to incorporate change from the bottom up. "Buy in" on change needs to be understood at the frontline employee level in order to implement change efficiently.

Key Opportunity 9: Practical Design

a. Initial evaluations of the acceptance of practical design at the management level appear positive. It was characterized as a return to engineering practical solutions. However, based on the PRT's observed reaction of staff, it seems practical design has been implemented with inadequate communication and a mixture of success and confusion. Staff is waiting for promised guidelines and training is planned that will include this program. The PRT recommends ITD continue with staff training on practical design to increase its success.

b. Staff interpretation of practical design varies and appropriate clarification and explanation of its purpose and intent is crucial to its success. One staff view is that it is truly a practical way of empowering professional engineers to use standards as a guide that should be adapted to a specific situation, a form of value engineering. Another view is that practical design is an attempt to stretch dollars by stretching the interpretation of standards and compromising quality. A third perspective is that it is intended to control cost and program manipulation by requiring engineers to submit more accurate project estimates as projects are submitted for

the STIP. Delayed efforts to educate all staff on the rationale and intent of practical design may undermine its effectiveness and value.

Key Opportunity 10: Innovation

a. There is great opportunity for innovation both from the initiatives of employees and from outside sources, including local universities and professional and trade associations. Leadership and appropriate rewards and recognition from the leadership team will be important to maximize this opportunity. The PRT recommends ITD implement an innovation reward system for all levels of staff.

E. Influencers/Drivers

During its review, the PRT noted several factors that may be outside the control of the Division of Highways. Yet, these factors may be significantly influencing the division's performance. In addition, there is potential that these factors may evolve into key issues. Evaluating these factors may present further opportunities for the Division of Highways and ITD to improve performance and job satisfaction.

Factors outside the direct control of the Division of Highways include:

1. Fiscally Conservative State Legislature. The total compensation and benefits package is under direct control of the legislature. Also, capital and operating budgets are approved by the legislature.

2. National Economy. The national, perhaps the worldwide, state of the economy will likely have negative impacts on the state. A second national economic recovery package may provide infrastructure funding to state and local governments that can respond quickly.

3. Climate. Winter influences construction seasons and constructability of projects. Also, winter maintenance demands dominate the staffing and funding of the Division of Highways's operating budget.

4. Geography. Idaho is valued as a fine place to live due to mountains and recreation. The size of the state mandates the decentralization of the Division of Highways service areas (districts).

5. Transportation Board. The board has a statutory governance role that includes approving annual budgets and appointing the ITD director.

F. Other Matters to Note

During its interviews, the PRT captured some other insights that do not rise to the level of a key opportunity, yet are worth noting, and in many cases are easy to carry out and can benefit the PWD. These are shared below.

1. The Region's Organization Structure. Cross-training for transportation technicians provides an efficient solution for satisfying peak needs in both winter operations and summer construction. This can be done well in either organization structure currently used by the districts. The PRT is concerned, however, about the burnout of staff expected to work substantial extra hours year round and about the possibility of ITD reducing a senior position in maintenance at a time when services are increasingly vulnerable.

2. The GARVEE Program. This incubator approach for innovation is a satisfactory way to challenge institutionalized processes and long engrained habits. This is particularly true if it is intended to eventually re-absorb this work into the division, capturing innovations that prove to be cost-effective. However, the original presentation of total separation from the division came across to staff as an arbitrary and permanent privatization of major highway work. Also, the approach and coincidental program cuts due to revenue reductions seems to have alienated some members of the state legislature.

3. Bridge Inspection. The PRT found that the physical act of bridge cleaning of the surface and drainage structures is performed by district maintenance staff. Bridge Safety Inspection (BSI) is performed by headquarters staff with no actual district involvement, and bridge repair is performed by district bridge staff. It appears to be three distinct operations. There is a communication loop between headquarters inspection and the district bridge repair crew to perform and document needed repairs. However, when asked who is responsible for the overall condition of the bridge, the PRT received a variety of responses.

ITD could consider reviewing the roles and responsibilities concerning who is responsible for district bridges and their condition and verifying that no gaps exist in the bridge maintenance program.

4. Emergency Management. While ITD appears to have a well organized emergency management plan, it does not appear adequately communicated throughout the organization. Since it affects the entire ITD and is intended to serve the entire state, the emergency management unit could report to the department wide manager level.

5. Use of Consultants. Consultants can be used to effectively balance the ups and downs of work load. The current use of consultants appears to be accepted by staff as a necessary tool to meet demand. Consultant quality appears to have reached a level comparable to that of ITD. ITD might continually weigh its need for consultants to most

effectively meet its design and construction goals and supplement its valued and limited staff.

G. In Appreciation

In conclusion, the PRT felt that their time at the ITD Division of Highways was well spent. We appreciated the cooperative attitude of everyone we met. We particularly appreciated the outstanding coordination support provided by Loren Thomas and Mary Lou Brown. Also, district business managers were helpful during visits to the individual districts.

H. Disclaimer

ASCE makes no representations, guarantees or warranties as to, and assumes no responsibility for, the conclusions and recommendations contained in this report. ASCE expressly disclaims all liability for damages of any kind arising out of the implementation of the recommendations contained herein.