

**Workforce Management Innovations in Transportation Agencies:  
Overcoming Obstacles to Public Sector Innovation**

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Edmund J. Zolnik and Ryan Sutter

### **ABSTRACT**

Adopting a case study approach, this review of the public sector innovation literature examines workforce management innovations developed and implemented by state-level, transportation agencies across the U.S. to improve their operations. These innovations targeted the following workforce challenges which agencies besides those dedicated to transportation service provision at national, regional, and local levels of government are currently confronting: recruitment; retention; staff development; organizational change; and succession planning. These case studies provide specific examples of how these operational innovations came about. This is particularly important considering the obstacles, controversies, and liabilities associated with innovation identified in the public sector innovation literature. For example, the controversy over the relationship between slack resources and innovation is more than an academic debate given the fiscal shortfalls in gasoline and automobile tax revenues which are causing slack resources to dry up in transportation agencies across the U.S. The review concludes that while obstacles to innovation continue to exist, the case studies highlight many encouraging examples of workforce management innovations that are successful and being adopted by other state-level service agencies outside of transportation. This is particularly encouraging for agencies providing transportation services that are facing stiffer competition for the highly-qualified workers that they will need to replace those who are transitioning out of their workforces.

**Keywords:** Public Sector Innovation, Workforce Management, Transportation Agencies

### **Introduction**

The idea that innovative change is brought about by individuals who possess entrepreneurial characteristics is well known. While originally applied to theories of economic progression in the private sector, entrepreneurial thinking is increasingly being identified as a positive source of organizational evolution in all kinds of social domains where organizations emerge and exist (Pozen, 2008). This is particularly evident in public sector organizational theory, where the positive capacities that these individuals possess have been identified as an important source of the innovations that provide collective benefit and political profit to these organizations (Wagner, 1966; Shockley et al. 2002).

The objective of this research is to link the literature on obstacles to public sector innovation, both general and specific, to a number of evolutionary workforce management changes that have recently emerged from within organizations responsible for the public provision of transportation services; a very generalizable example of a public organization that provides services in an organizational setting. These obstacles to public sector innovation will be used as a framework for guiding this review of that literature. Specifically, obstacles related to how innovations are developed and implemented, slack resources, and political liabilities provide a useful framework within which to discuss the determinants of innovation-driven organizational change in the public sector. To that end, the next three sections discuss the obstacles, controversies, and liabilities that the literature identifies as potential obstacles to public sector innovation.

### **Obstacles to Public Sector Innovation**

Harris and Kinney (2003) discuss the incentives and barriers to creative problem solving in the public sector. They cite a number of variables which are related to the decision to innovate. Typically, public sector innovations emerge in response to the materialization of some problem. Nice (1994) found that those problems that are linked to broadly shared policy goals are more likely to spur innovation. However, decision makers typically refrain from searching for innovative practices unless dissatisfaction with the current system is palpable. Political factors also influence decisions to innovate. Those innovations that are consistent with established beliefs and values are more likely to be implemented than those that are not.

According to Glor (1998) the following factors also impede risk-taking in the public sector:

- blameability;
- bureaucracy;
- rule breaking;
- capacity constraints;
- innovation as a value;
- innovation as a skill; and
- need for guidance.

The political reality is that politicians demand that public servants be held accountable for the actions, or inactions, of their respective departments:

“[t]he practice of blaming public servants for the errors and shortcomings that arise from the political process or from the constraints of the internal rules and procedures will have to subside if we expect public managers to confront the uncertainties and risks involved with change” (Thomas, 1996, p. 25).

The traditional forms of bureaucracy are useful for translating vague political goals into administrative action with less risk and/or effort. However, efforts to reform public management recognize that structural changes are necessary in order to empower public servants to do their jobs differently, which coincidentally, is the essence of innovation. The various ways that management infrastructure has been changed to empower public servants in transportation organizations to be more innovative boil down to: less specialized jobs; flattened hierarchies;

promoting teamwork across departments; and relaxed rules for using financial and human resources.

Unfortunately, relaxing rules has sometimes been perceived to confer the right to break the rules. While rules are sometimes broken because public servants don't fully understand these new, relaxed rules, the potential public fallout resulting from perceived wrongdoing is enough to stifle risk-taking for many public servants.

At the same time, public management reform has held out the promise that managers will be able to do more with less. The reality, however, is that capacity constraints make it necessary to do more with less rather than strive to be more innovative in solving problems.

There is also the issue of how management reforms are internalized by public servants, particularly those middle managers who translate their perceptions of senior management's wishes to those who actually deliver services to the public. If management, particularly middle management, doesn't buy into the initiatives for change, then public servants won't value innovation enough to make a difference and innovation will be stifled. Likewise, valuing risk-taking is often perceived to be at odds with the traditional bureaucratic values of accountability and neutrality imposed on public sector organizations.

It is also worthwhile to recognize that innovation is a learned skill that public servants need to develop and that it often emerges in a dense social network with strong links between its nodes. Many managers at the senior-levels of government may not have had the opportunity to acquire the technical education and the operational experience essential to the promotion of innovativeness and reasonable risk-taking by way of their subordinates. Further, many times subordinates are entirely excluded from the change process. If senior management lacks the training and expertise in the organizational structures of innovative institutions, then it is unlikely that their departments will become innovative; especially when the insights of the rank and file are not included.

Finally, it is not often obvious to public servants how they are supposed to reconcile the seemingly contradictory traditional public service values of accountability and neutrality with new values of entrepreneurship and innovation.

### **Slack Resources and Public Sector innovation**

Much research has been conducted on the determinants of innovation in the private and public sectors. One question that receives substantial attention is if innovation requires slack resources or if it is driven by the fear of negative outcomes (Herold et al. 2006). On the one hand, research has suggested that underutilized resources need to be present in order for innovation to occur (Bingham and McNaught, 1976; Downs and Mohr, 1980). The argument is that innovation requires considerable effort and/or costs, which are associated with searching for and implementing an alternative approach to doing the same or new things. Further, change will likely be resisted by at least some individuals who are used to the old way of doing things which will more than likely add to the costs of implementing new ideas.

Others take the opposite point of view and have suggested that organizational innovation or innovation-driven organizational change emerges as a consequence of an outside threat. The thinking is that organizations will only innovate when they are in survival mode (Leonard and Straus, 1997). Thus, things will only change when they need to change. To take state-level, transportation agencies in the U.S. as an example, state-run fleets may only abandon petroleum-based fuels when their costs rise so high as to threaten the viability of the fleet's operations. Further, new road surface materials may only be sought out when existing materials disappear or become considerably more expensive relative to alternatives.

While there is no clear cut answer to this debate, insights provided by both sides of the issue highlight an interesting possibility. Perhaps there are really two types of innovation, especially when thinking about innovation in the public sector. On the one hand, there exists a type of innovation that unlocks new possibilities or roles for the public sector organization; for instance, the development of a new way of melting road ice. Another example could be the development of a new road surface that lasts longer or requires less frequent upkeep. The other type of innovation is that which emerges from threat. For instance, public sector organizations tend to operate on tightly-fixed budgets, which once exhausted leave the unit in a near state of emergency. In times like these, threat innovation would tend to occur. For example, budget crises could lead to an innovation in the way state employees are paid or the reorganization of city bus routes that cut costs. In either case, slack resources are an extremely important issue to consider when thinking about promoting innovation within the public sector. However, different types of organizational innovation may or may not require slack resources. The relevance of slack resources to innovation within the public sector may then depend on the type of innovation one is considering and the fiscal circumstances.

### **Liabilities of Public Sector innovation**

The literature on public sector innovation tends to be biased in favor of promoting its benefits (Nice, 1994; Rogers, 2003). Rarely is it made mention that innovations are not necessarily good or bad. Nor is it recognized that there are liabilities associated with innovation in the public sector.

First, as alluded to earlier, searching for new innovations is costly. Personnel often need to be reallocated to the search process, research materials need to be gathered and communication needs to be established with experts who can guide the search process. The process of searching for potential innovations is made that much more difficult when personnel resources are also in demand to support existing governmental operations. It is also costly for organizations to analyze the potential suitability of prospective innovations. Bringing in expert personnel, assessing programmatic results and costs, and developing systems to evaluate program options can be very expensive but is often required in the public sector. Implementing an innovation can also create additional costs. The need for additional training, personnel, equipment, and facilities may add substantial costs to the adoption of innovations. Finally, sunk costs in established practices and programs may stymie innovation. Existing practices and programs may have required substantial investments in personnel and infrastructure. The politicians who oversaw the development of these practices and programs may have made large investments in mastering them and

overseeing their operations. All in all, change may make past investments appear wasteful or worse yet, foolish.

Innovations also tend to generate criticism and opposition from those who benefit from the status quo. Personnel whose jobs may be eliminated or downgraded can be expected to vigorously oppose innovations. Other personnel may develop emotional attachments and oppose changes of any kind. Clientele can also be expected to defend the status quo. For example, paving contractors can be expected to oppose diverting resources from road and highway programs to nonroad transportation programs. In essence, politicians may not be receptive to change for any number of reasons that are intrinsic to public sector structures.

A liability closely related to preserving the status quo is the uncertainty that innovation brings. Numerous uncertainties are associated with innovations. For example, adopting innovations may cost more than expected. Innovations may not be as effective as expected or their benefits may not come quickly enough. It is also possible that people will not react as expected to innovations and this may devalue their effectiveness. Innovations often create indirect effects which result in new problems. Because innovation is synonymous with uncertainty, many policymakers opt for the predictable risks of current programs over the uncertainties associated with innovations.

Finally, the difficulty in getting new innovations adopted or passed into law can put a damper on innovation. Because enacting policy changes is so difficult, officials may be reluctant to even propose new ideas. Those who propose new initiatives that are subsequently defeated may lose prestige and credibility and waste valuable political capital in the process. Overall, the difficulties associated with getting major changes enacted create incentives to push minor changes to current programs rather than major innovations.

While innovation is often posited to be a positive force at work in public sector organizations, for a variety of reasons just mentioned, it is also opposed by rigidity specific to the public sector. How then can such organizations change their operational structures in order to enhance the positive aspects of innovation-driven change, while at the same time overcoming the obstacles created by these resistive forces? The following sections provide specific case studies on how transportation agencies across the U.S. overcame obstacles related to the absence of resources and the like to develop and implement innovations in their management of workforce operations. The focus on innovations in the transportation sector of government is particularly pressing given the calamitous shortfalls in operating revenues state governments across the U.S. are currently experiencing. However, the lessons learned from these case studies are adaptable to governmental operations at the national, regional, and local levels in the U.S. and elsewhere.

### **Innovations in Transportation Workforce Management**

Sub-national governmental organizations like states or provinces have a long history of transportation policymaking. This is at least partially attributable to the fact that these jurisdictions have a recognized responsibility to address transportation issues. It is also contingent on the fact that clear measures of performance such as costs, fatalities, and ridership as well as established criteria regarding the suitability of services are easily recognizable to the public and transportation policymakers. This combination of factors makes transportation

problems amenable to innovative practices, as suggested by Nice (1994), because they are linked to broadly-shared policy goals.

Workforce management is a term used to describe the set of issues related to the recruitment, retention, development, and general organization of human resources within an organization. These issues are also commonly referred to as human resource management, human resource management systems, personnel planning, or enterprise resource planning; yet the basic underlying issues are fundamentally the same. This set of concerns has become a topic of considerable scholarly activity over the last several decades, especially within the public sector, as it relates to the new public management and state Departments of Transportation (DOTs) are no exception (Condrey and Battaglio, 2007). Substantial workforce challenges emerging within state DOTs include: increased retirement eligibility within their workforces; loss of talent to the private sector; and acquiring new skill sets to meet technological demands (Gilliland, 2000). To deal with these emerging concerns, many DOTs have begun to develop and implement operational innovations to workforce management issues at the organizational level. This section presents five topical areas, deemed particularly crucial to workforce management issues within DOTs, in order to identify commonalities in the recent innovations relevant to workforce management.

### *Recruitment*

The recruitment of a high-quality workforce is crucial to the success of any large-scale organization and public organizations are certainly no different in this regard. However, the recruitment of high-quality human capital embodied in talented employees is a considerable challenge for public organizations, especially within national and state governmental organizations. The challenges facing public sector organizations, like DOTs, involve not only competing with the private sector for highly-qualified workers at a pay disadvantage but also involve confronting stereotypes commonly associated with working for the government.

How then is a DOT supposed to recruit high-quality employees in the face of such obstacles? The New York State Department of Transportation (NYSDOT) provides an example of how these organizations can rise to the challenge in today's competitive environment (Montague and Connor, 2008). The NYSDOT has approximately 10,000 employees and over 2,000 engineers, yet is equipped with a meager budget of only \$30,000 allocated to its recruitment campaign. As a result, it has developed a set of innovative strategies that it uses to compete with the private sector, amongst other competitors, in order to recruit talented workers to both replace outgoing personnel as well as respond to new challenges. Specifically, the NYSDOT focuses on the following recruitment initiatives:

- streamlining the civil service employment process to reduce hiring times;
- using resumes as opposed to lengthy testing procedures in their evaluation process;
- acquainting prospects with departments, their hiring procedures, and general application procedures;
- creating departmental websites that provide information on application and hiring procedures;

- introducing prospects to the diversity within departments in terms of both current employees and professions;
- delegating recruiters the authority to offer outstanding candidates a job before they graduate; and
- implementing an aggressive campus-recruitment program to give students a flavor of the department's projects and work environment.

Aside from these programs, the department focuses on what they can uniquely offer new personnel. For instance, Greg Montague, Director of Personnel at NYSDOT understands that his organization cannot compete with the private sector on the basis of pay and so they focus on what they can offer as a benefit outside of the realm of compensation. As a result, they focus their efforts on promoting the potential to rise through the ranks quickly and the opportunity to work, early in ones career, on exciting large-scale projects. An inclusive and positive work environment is thought to be a critically important aspect of recruitment, on which they have chosen to focus.

### *Retention*

Employee retention is another integral part of a top-notch workforce development program and the Pennsylvania Department of Transportation (PennDOT) utilizes several innovative methods to deal with this concern (Harris and Simonton, 2008). Specifically, PennDOT allocates full-time quality coordinators to each of its eleven engineering districts in order to facilitate open lines of communication and to proactively identify problems occurring across these districts. Additionally, the department allocates part-time quality coordinators to every central office bureau and has developed a system of cross-unit knowledge sharing, housed in the Center for Performance Excellence that focuses on employee development, knowledge sharing, and process improvement as a means to retain highly-qualified workers.

Further innovations are embodied in an extensive monitoring system specifically oriented toward monitoring the organizational environment, a key to retaining highly-qualified workers. This innovative, internal-development system consists of three primary environmental monitoring surveys designed to assess the effectiveness of the organization as a whole. It consists of three surveys monitoring employee morale, organizational effectiveness, and employee exit decisions.

The Organizational Climate Survey (OSC) includes 100 questions that are designed to assess employee perceptions across seventeen domains. The survey results are then used to provide feedback on each level of the organization. Based on this feedback, each unit forms a decisionmaking team that is responsible for identifying problems as well as proposing solutions to those problems. The survey is constructed in a bottom-up manner so that it engages employees, harnessing their cross-dimensional skill sets to better solve emerging retention issues.

The PennDOT Employee Morale Survey is another retention innovation. It is an online survey, which can be given at any time in order to evaluate organizational initiatives closer to real time. PennDOT officials believe strongly that increasing morale leads to increased productivity and better rates of retention amongst employees. The Employee Morale Survey is an outgrowth of

the OCS and so has the capacity to provide a comparison of any particular work unit's morale with respect to the last OCS. One example of how these surveys contribute to employee retention is evident in comments conveyed by Bob Piel, Quality Coordinator for District 1-0 in northwestern Pennsylvania. He points to a situation in which OSC results indicated communication between a manager and his subordinates was poor. The manager was unaware of this lapse in communication and actually was operating under the assumption that communications had actually improved. A morale survey was conducted to examine the issue and resulted in a positive change in the level of communication, according to employees, helping to head off potential employee exits.

Another innovative retention method is implemented within PennDOT's operational procedure. This involves evaluating employee exit decisions in a manner that is highly confidential. The approach is to mail the former employee a survey along with a postage-paid return envelope. This type of exit interview goes beyond the conventional form of exit interviews that are conducted by many organizations to ensure a high degree of confidentiality. With this level of confidentiality, PennDOT is better able to evaluate employee exits and more readily identify issues within the organization that need to be addressed to enhance retention.

What PennDOT has seemingly realized is that the collective psychology of its organization is critical to retaining its most talented individuals. The changes implemented by their organization tend to focus on creating a positive work environment. They have tried to do this by flattening their organizational hierarchy in order to better monitor and include everyone's thoughts and concerns.

#### *Staff Development*

The development of human capital and the identification of future leaders is an important step in building a high-quality workforce. As a result, when the Connecticut Department of Transportation (ConnDOT) faced a situation where state-level budget cuts lead to the abandonment of a staff development program, ConnDOT decided to assume responsibility for the program (Kanachovski, 2008). Responsibility ultimately fell to the ConnDOT Office of Training and Staff Development. The Office relied on in-house managers as well as former Executive Management Program graduates to develop their own staff development program.

The program is organized around twenty topics deemed necessary for developing internal staff. These topics cover a broad range of functional areas, such as understanding leadership styles, interpersonal effectiveness, transportation financing, coaching strategies for improving employee performance, gender-based communication, continuous improvement strategies, and tools for analyzing and presenting data. The specific program constitutes an eighteen-month core curriculum with potential participants being nominated by each of the five ConnDOT bureau chiefs. Each class contains approximately thirty participants, which are selected by the Office of Training and Staff Development and approved by the Commissioner of ConnDOT. The intent of the program is to develop important skill sets with specific applicability to real-life situations and an organizational structure which allows ideas to cross fertilize. Participants also hone their leadership skills as well as learn more about ConnDOT operations.

A particularly valuable part of the program is known as The Innovation Project. This part of the program requires participants to select a particular function of ConnDOT; research it, and present their findings. The projects are related to each participant's job functions with the goal of exploring alternative ways of doing things. One employee in the Research Division, for example, studied better ways to distribute information via streaming video and audio media over the ConnDOT Intranet. Other employees studied the alleviation of highway congestion by diverting truck traffic to rail and waterways or looked for alternative methods to control snow and ice. The latter effort led the State to experiment with liquid calcium as a spreading agent.

The staff development program at ConnDOT is certainly not cheap. It also contributes to considerable opportunity costs in terms of staff salaries and their work-time allocation. However, the cost per participant is still less than 500 USD; a relatively small investment to improve employee performance and harness the innovative capacities of existing departmental employees.

### *Organizational Change*

Organizational change is a pervasive phenomena occurring within all types of medium- and large-scale organizations. Public-sector organizational change has become an important concern in recent years as the pressures of globalization begin to envelope these organizations. Thus, the question becomes; how are public sector agencies, and specifically DOTs, able to respond to these pressures in order to reinvent themselves in such a way as to enhance workforce management operations?

The Florida Department of Transportation's (FDOT) revision of career-service rules constitutes one example of a proactive approach to responding to these environmental changes (Ferguson, 2008). The particular innovation adopted at FDOT involved a new organizational approach to structuring its operations around how employees do their jobs. Specifically, FDOT reinvented its job classification system to move away from the traditional model, which classified job functions around specific duties and levels of responsibility, to a new model structured around how employees carry out their specific tasks. The result was a reduction in the number of job classification groups from approximately 1,700 to ninety-six.

To achieve this transformation a relatively large FDOT project team was created and directed to catalog all aspects of the 1,700 career-service classes and align them with sixteen newly identified occupational classes. The resulting classes were then arranged into six organizational levels, which were based on how people did their jobs. These new criteria were known as pay broadbands. The new broadbands, aside from simplifying the job classification system, permitted the department to develop new compensation, recruitment, selection, and performance-assessment systems with a bottom-up, rather than top-down, directional flow. FDOT then went on to conduct a pay survey to determine compensation that better aligned with private sector pay in Florida and used these results to develop sixteen new pay ranges.

The system of broadbanding developed in FDOT is the fundamental innovation driving the reorganization of the department as a whole. Its attractiveness lies both with its simplicity as well as its ability to free the agency from rigidity. Before this reorganization, FDOT was bound to

hiring and promotion operations that were explicitly linked to candidates educational and work experience. Furthermore, the operations themselves were often mandated by central office personnel who tended to be disconnected from actual situational tasks. The new organizational structure provides lower-level managers with the liberty to promote and compensate employees based on their effort and/or success. This new organizational structure frees FDOT from its previously rigid, vertically-integrated hiring and promotion structure.

FDOT's new workforce arrangement is popular with its workforce and the flexibility it provides has boosted morale and labor productivity. Furthermore, the merits of FDOT's streamlined hiring and promotion system have been recognized by the Florida legislature, which, in 2001, passed a bill directing all state departments to adopt pay broadbanding.

### *Succession Planning*

Succession planning is the last aspect of workforce management practices identified in this review of the public sector innovation literature. Succession planning describes a management model that seeks to identify pools of potential future leaders who are capable of filling critical upper management positions without causing substantial long-term disruptions in operational capabilities. Succession planning, while not as necessary in the private sector, is crucial to public sector organizations. An example of an innovative succession planning model in DOTs is one implemented by the Minnesota Department of Transportation (MnDOT) in the mid-90's (Brede, 2008).

MnDOT recognized the need for a formal succession planning mode of operation in early 1994. The original intent of the program was to ensure a smooth transition of incoming management personnel, regardless of whether or not they came from inside or outside the organization. The goal was to ensure that incoming managers were properly aligned with MnDOT's operational mission. Seven functional capabilities underlie the specific framework for determining accountability throughout MnDOT. These competencies are: leadership; learning and strategic systems thinking; quality management; organizational knowledge; technical knowledge; personnel management; and individual-specific characteristics.

With these core areas at its heart, the MnDOT succession planning model relies on a hierarchically-oriented design to identify future department leaders via a four part process. The first part involves gathering data. The second part is to identify potential participants. The third part is to conduct an assessment of the pool of participants, while the fourth part involves obtaining feedback. Data gathering involves several stages. The first of these stages requires that a team of senior-level managers identify emerging issues and predict their future impacts on staffing requirements over a two- to three-year time horizon. The projected adjustments to staffing are then aligned with position-specific competencies to identify necessary qualifications for the incoming manager. The solicitation of participants is based on an interest and qualification survey. A review team then assesses the applications and compiles the results. The assessment is then used to identify candidates for further review. The feedback stage of the process is utilized to provide a way for future managers to identify potential weaknesses, thereby addressing any shortcomings before being called on to fill a new management role.

## Discussion

Workforce concerns are crucial to innovation in the public sector, as high-quality employees are the foundation of an innovative workforce. These concerns are even more pressing for transportation agencies in light of new research on the hottest fields for new graduates. A survey conducted by *Universum USA* and published in *Business Week* (Gerdes, 2008) suggests that low pay and a rigid set of hiring rules place the transportation industry on the lagging end of fields sought after by younger workers. Transportation agencies must therefore be aggressive in their efforts to attract and retain a shrinking pool of potential workers in order to achieve the level of innovation necessary to meet the transportation needs of the coming decades.

Further complicating efforts by transportation agencies to attract and retain a competitive workforce are the effects of recent fiscal shortfalls. In their review of the long-term effects of fiscal contraction on public sector innovation, Walker and Chaiken (1982) found that the typical bureaucratic reaction to fiscal constraints “is to make cutbacks that are as invisible to the public as possible” (p. 156). Such cutbacks often include cancelling subscriptions, eliminating funding for conference travel, and reducing training opportunities for current employees. They go on to describe the downward spiral in workforce innovation set in motion by these cutbacks:

“creative personnel who could have produced ideas for the next generation of public service innovations are likely to find government employment unrewarding and less well paid than other jobs. If so, they will leave public service jobs or not enter them. The remaining personnel will have more demanding, less interesting, and perhaps more tedious and routine jobs, no longer surrounded by stimulating colleagues and coworkers who would encourage them toward innovation. Moreover, they will find their information networks interdicted. With reduced or nonexistent budgets for travel to professional conferences, meeting with or telephoning colleagues in other jurisdictions who have similar responsibilities and problems, library bibliographic searches, or reading journals and other information sources, the remaining government personnel will be cut off even from innovative ideas that already exist” (pp. 161-162).

Even though the public sector innovation literature is consistent in asserting that innovation is less likely when the economic climate in which government agencies operate is contracting (Downs and Larkey, 1981), Walker and Chaiken go on to assert that what they’ve described is a likely, but not an inevitable, outcome.

In fact, the case studies presented in this review of the public sector innovation literature tend to support the notion put forth by Walker and Chaiken that “imaginative new personnel practices will be developed by innovative leaders” (p. 162). Indeed, the commonality in these operational innovations is that leaders at the DOTs represented in the five case studies came up with their own innovative solutions to problems besides state-level budget cuts (ConnDOT) including: not being able to compete with the private sector on the basis of pay (NYSDOT); low morale (PennDOT); rigidity in vertically-integrated hiring and promotion structures (FDOT); and identifying future leaders capable of filling upper management positions (MnDOT). Another encouraging sign for public sector innovation is that the operational innovation developed and

implemented at FDOT, pay broadbanding, was adopted by other state-level, service agencies in Florida. This result is especially positive because previous case studies on innovations developed and implemented by innovative leaders in another public service organization, police departments, failed to be adopted elsewhere (Colton, 1978). Therefore, one of the overriding lessons learned from case studies on operational innovations in workforce management developed and implemented in transportation agencies is that they are adaptable to other public service agencies outside of transportation.

## **Conclusions**

Improving workforce management is an important part of sustaining high quality DOT operations. While a thorough understanding of how change can be brought about is still evolving, this research provides a considerable step forward by evaluating a series of operational innovations along five broad topical areas encompassing workforce management. Identifying areas that are most in need of attention and/or approaches that are the most promising is a difficult task and, in fact, may not be useful. Rather, existing research provides noteworthy evidence as to which workforce management innovations hold the most promise. For instance, research by Warne (2003) and Winstead (2003) supports the assertion that recruitment and retention issues are of the utmost importance. At the same time, the case study on organizational change at FDOT demonstrates that addressing these issues successfully must inherently involve aspects of organizational change. Thus, the five topical areas encompassing workforce management cannot be completely disconnected from each other and so they must, in some sense, be reconciled with the particular needs of each public service agency in order to successfully address their specific concerns.

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## **Sources**

Bingham, R. and McNaught, T. 1976. *The Adoption of Innovation by Local Government*. Lexington, MA: Lexington Books.

Brede, W. 2008. *Succession Planning – Building Leadership Capacity*. Federal Highway Administration. Accessed 16 September [http://www.nhi.fhwa.dot.gov/transworkforce/ip\\_mn2.pdf](http://www.nhi.fhwa.dot.gov/transworkforce/ip_mn2.pdf).

Colton, K. 1978. *Police Computer Technology*. Lexington, MA: Lexington Books.

- Condrey, S. and Battaglio, R. 2007. "A Return to Spoils? Revisiting Radical Civil Service Reform in the United States". *Public Administration Review* 67(3), 425-436.
- Downs, G. and Mohr, L. 1979. "Towards a Theory of Innovation". *Administration & Society* 10(4), 379-408.
- Downs, G. and Larkey, P. 1981. "Fiscal Reform and Government Efficiency: Hanging Tough". *Policy Sciences* 13(4), 381-396.
- Ferguson, D. 2008. *Model Personnel Classification and Compensation Plan Becomes State Mandate*. Federal Highway Administration. Accessed 16 September [http://www.nhi.fhwa.dot.gov/transworkforce/IP\\_FL.PDF](http://www.nhi.fhwa.dot.gov/transworkforce/IP_FL.PDF).
- Gerdes, L. 2008. The Best Places to Launch a Career. *Business Week*. September 15, 2008. The McGraw-Hill Companies.
- Gilliland, C. 2000. *Managing Change in State Departments of Transportation: Innovations in Workforce Strategies*. Federal Highway Administration. Accessed 16 September <http://www.nhi.fhwa.dot.gov/transworkforce/studies.asp>.
- Glor, E. 1998. "Innovation in the Federal Government: The Risk Not Taken". *The Innovation Journal* 4(2).
- Harris, M. and Kinney, R. 2003. *Innovation and Entrepreneurship in State and Local Governments*. Lanham, MD: Lexington Books.
- Harris, R. and Simonton, J. 2008. *Monitoring the Pulse of Employees*. Federal Highway Administration. Accessed 16 September [http://www.nhi.fhwa.dot.gov/transworkforce/IP\\_PA.PDF](http://www.nhi.fhwa.dot.gov/transworkforce/IP_PA.PDF).
- Herold, D., Jayaraman, N. and Narayanaswamy, C. 2006. "What is the Relationship between Organizational Slack and Innovation?" *Journal of Managerial Issues* 18(3), 372-392.
- Kanachovski, J. 2008. *Developing an In-House Approach to Leadership*. Federal Highway Administration. Accessed 16 September [http://www.nhi.fhwa.dot.gov/transworkforce/IP\\_CT.PDF](http://www.nhi.fhwa.dot.gov/transworkforce/IP_CT.PDF).
- Leonard, D. and Straus, S. 1997. "Putting Your Company's Whole Brain to Work". *Harvard Business Review* 75(4), 111-121.
- Montague, G. and Connor, S. 2008. *Putting a Face on the New York State DOT*. Federal Highway Administration. Accessed 16 September [http://www.nhi.fhwa.dot.gov/transworkforce/IP\\_NY.PDF](http://www.nhi.fhwa.dot.gov/transworkforce/IP_NY.PDF).
- Nice, D. 1994. *Policy Innovation in State Government*. Ames, IA: Iowa State University Press.

- Pozen, D. 2008. "We Are All Entrepreneurs Now". *Wake Forest Law Review* 43(1), 283-340.
- Rogers, E. 2003. *Diffusion of Innovations*. New York, NY: Simon & Schuster.
- Shockley, G., Frank, P. and Stough, R. 2002. *Toward a Theory of Public Sector Entrepreneurship*. NCIIA 7<sup>th</sup> Annual Meeting: Big Ideas in a Small World: Boston, MA.
- Thomas, P. 1996. "Beyond the Buzzwords: Coping with Change in the Public Sector". *International Review of Administrative Sciences* 62(1), 5-29.
- Wagner, R. 1966. "Pressure Groups and Political Entrepreneurs: A Review Article". *Public Choice* 1(1), 161-170.
- Walker, W. and Chaiken, J. 1982. "The Effects of Fiscal Contraction on Innovation in the Public Sector". *Policy Sciences* 15(2), 141-165.
- Warne, T. 2003. *Recruiting and Retaining Individuals in State Transportation Agencies*. Washington, DC: Transportation Research Board.
- Winstead, D. 2003. *The Workforce Challenge: Recruiting, Training, and Retaining Qualified Workers for Transportation and Transit Agencies*. Washington, DC: Transportation Research Board.