Evaluation of WisDOT’s Local Program Management Consultant Program

WisDOT Project ID: 0657- 45 - 14
CMSC W.O 3.2

Final Report
February, 2012

Submitted to the Wisconsin Department of Transportation

by
Benjamin P. Thompson
Gary C. Whited

Construction and Materials Support Center
University of Wisconsin – Madison
Department of Civil and Environmental Engineering
EXECUTIVE SUMMARY

In 2006, the Wisconsin Department of Transportation (WisDOT) implemented the use of Management Consultants (MC) for the management of the Federal aid Local Program (LP) statewide, which administers projects for the benefit of local government agencies, such as Towns, Villages, Counties, and Cities, to design and construct road, bridge and highway projects. The MC program was instituted in response to a number of shortcomings in WisDOT’s management of the LP identified by FHWA, mostly in the areas of compliance.

The objective of this study was to evaluate the effectiveness of the MC program, provide insight to WisDOT and to formulate recommendations on the future of WisDOT’s Local Program. To achieve these objectives, the study focused on the three program indicators established by WisDOT: (i) cost; (ii) consistency; and (iii) compliance. Trends in LP costs were identified, and a staffing level approach to cost analysis was taken. Compliance was gauged through interviews with WisDOT Central Office and Region PM personnel, FHWA personnel, and development and administration of a stakeholder survey. Consistency was measured by analyzing the response patterns on the stakeholder survey questions, through interviews with WisDOT and FHWA personnel, and through anecdotal comments collected along with the stakeholder survey responses.

Outcomes of the current study indicate that most within WisDOT and FHWA are satisfied with the MC program. The general consensus of interview subjects was that, if anything, the project design process has improved under MC management.

While stakeholders and LP users have indicated that there may be a cost premium associated with the MC program, there does not appear to be any anecdotal evidence that costs associated with MC-administered projects have been significantly higher than they would be without the MC. The cost analysis found that WisDOT’s in-house LP expenditures have declined as a percentage of total LP expenditures since implementation of the MC program and that the portion of LP expenditures going to MCs and the portion of consultant costs going to MCs have both risen since statewide implementation of the program, but that the total consultant delivery costs as a percentage of total LP expenditures have not changed significantly since statewide implementation of the MC program. When measured in terms of program dollars managed per FTE (Full-Time Equivalent), WisDOT’s LP closely approximated FHWA’s recommended levels for much of the period 2002 – 2011 under consideration. Over the entire 6-year history of statewide implementation of MCs, on a “dollars managed per FTE” basis, the cost analysis shows that there is no evidence to suggest that the MC program has operated less cost-effectively than the LP operated prior to statewide implementation. The dollars managed per FTE decreased in 2010, apparently
reflecting the cost premium associated with delivering large numbers of ARRA projects on compressed
timelines. There is no evidence that MC management is costing WisDOT more per construction program
dollar than in-house management of the LP cost. These cost trends need to be monitored in the future.
Timeliness of MCs also appears to remain a concern among some program stakeholders, although
WisDOT Region PMs are generally satisfied with it.

All interviews and documents reviewed indicated that LP compliance has improved significantly since
implementation of the MC program. It appears that most LP projects are meeting WisDOT and Federal
requirements, and most LPAs and Construction Oversight consultants are satisfied with this performance.
There is general consensus that MCs have improved the environmental document process and outcomes.

There appears to be general agreement among WisDOT, FHWA, and stakeholders that the consistency
with which LP projects are meeting Federal requirements has improved under the MC program, but there
is also concern that consistency is difficult to measure, especially from a Region perspective, and that
consistency is difficult to maintain. While individual experiences are difficult to gauge from an open-
ended request for comments, it appears from the survey results and interviews that inconsistencies do
exist across the five WisDOT Regions, but that these inconsistencies are not large enough to strongly
affect stakeholder participants on a large scale.

Other factors that were identified as impacting the study outcome included other benefits and concerns
with the MC program. MCs may bring additional focus and commitment to the LP, increase oversight in
the LP, capture costs more accurately, provide easier access to specialized skills and expertise, handle
changes in workload more effectively than WisDOT could, and sometimes provide assistance with
additional tasks beyond their contract requirements. The concerns expressed included the potential for
conflicts of interest with MCs, the potential for loss of expertise and experience for WisDOT personnel,
limiting career advancement opportunities for WisDOT personnel, and the potential that WisDOT stature,
prestige, and influence may be decreased by contracting for these management services outside of the
agency.

This study found that the MC program has improved compliance, and has not, on average, increased
management costs relative to the total LP expenditures on the average. Consistency has been found to be
a continuing challenge with the MC program, as have communication and training of all project
participants, particularly smaller LPAs and inexperienced Design and Construction Oversight consultants.
It has also been established that MCs help manage spikes in workload, and that successful completion of
ARRA projects would have been difficult or impossible without them. Additionally, it is clear from this
research that WisDOT would have difficulty taking over the LP and maintaining a constant level of
quality and compliance, unless a major personnel re-structuring were to take place.

It is recommended that the MC program be continued, with a re-evaluation of costs within the next five
years, to determine the overall trend. In the absence of large re-organization of WisDOT staff, the MC
program seems to provide a solution to the problem of keeping the LP in compliance with FHWA
regulations, has not been shown to appreciably increase costs, and is being accepted by the majority of the
LP stakeholders. Finally, it is recommended that all appropriate steps be taken to ensure consistency
across the MCs and the various Regions. This may take the form of increased monitoring of LP projects
from the Central Office, increased interaction among the LP personnel from the five Regions and each of
their MCs with each other and with FHWA, and standardized MC contracts across the Regions.
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1. INTRODUCTION

In 2006, the Wisconsin Department of Transportation (WisDOT) implemented the use of Management Consultants (MCs) for the management of the Federal aid Local Program (LP) statewide, which administers projects for the benefit of local government agencies, such as Towns, Villages, Counties, and Cities, to design and construct road, bridge and highway projects. Prior to statewide deployment of the MC program, WisDOT staff had been more directly involved in administering the Federal funds to the LP, and for the oversight of preliminary design, environmental documentation, final design, and construction management of these projects. Since implementation of the program, the MCs provide oversight and management of local Federal aid projects administered through WisDOT. MCs provide reviews and spot-checks for preliminary design, environmental documentation, final design, and construction management by consultants. MCs participate in negotiating the design and construction management contracts for local projects receiving Federal aid, and spot check designs, quantities, and other PS&E (plans, specifications, and estimates) documents. While WisDOT has tasked the MCs with overseeing the LP, in the final analysis, WisDOT is responsible to the Federal Highway Administration (FHWA) for acceptance of projects, which includes adherence to Federal regulations (1). WisDOT implemented the MC program with the intent of evaluating the program structure on the basis of cost, consistency, and compliance. This review is the purpose of the current study.

2. STUDY OBJECTIVE

The objective of this study was to evaluate the effectiveness of the MC program, provide insight to WisDOT and to formulate recommendations on the future of WisDOT’s management of the Local Program. To achieve these objectives, the study focused on the three program indicators established by WisDOT: (i) cost; (ii) consistency; and (iii) compliance. To answer the long-term question of whether the MC program should be continued, it was necessary to determine whether each of these three indicators have improved, deteriorated, or remained unchanged since implementation of the MC program. This final report is based upon a review of existing documents, interviews with both Central Office (CO) and Region WisDOT personnel involved in the management and oversight of the MC program, a new stakeholder survey, and an analysis of WisDOT cost data.

3. PROJECT SCOPE

The project scope for this research work will be defined by the three criteria for evaluation of the MC program established by WisDOT at the outset of the program: cost; compliance; and consistency.

3.1. Costs

Analyses comparing costs from project to project or from year to year within an organization are very difficult because each project is unique. These difficulties make it nearly impossible to directly compare, for example, costs of projects before MC implementation with projects managed by MCs, or LP projects managed by MCs with State program projects managed by WisDOT. Instead, trends in LP costs were identified, and a staffing level approach to cost analysis was taken. LP cost data from 2002 through 2011,
provided by WisDOT, allowed for the calculation of the full-time equivalent (FTE) positions dedicated to the LP, which is tied directly to the cost of the program. The number of FTEs dedicated to the LP each year was compared to FHWA recommendations on the number of FTEs necessary to adequately run a local program, and cost effectiveness of the MC program was analyzed by calculating and comparing the amount of LP construction dollars managed per FTE both before and after the statewide implementation of the MC program.

3.2 Compliance

The study also analyzed compliance with Federal regulations in the management of the LP. Compliance was gauged through interviews with WisDOT Central Office and Region PM personnel, FHWA personnel, and others. In addition, questions regarding compliance were included in the stakeholder survey developed and administered as a part of the current study.

3.3 Consistency

Consistency “means that the rules of the game are defined for all of the players, and the rules are used consistently to manage the process” (2). This leads to discussion of the issue of consistency among the various MCs throughout the state. Consistency was analyzed by interviewing WisDOT staff at Central Office and in the Regions, as well as FHWA staff. Survey responses were analyzed for consistency in two ways. First, the two most popular neighboring answers to a survey question were added together to estimate a level of consistency within a particular question. Second, responses to selected questions were plotted in Regional groups, giving a pseudo-measure of consistency across Regions for those questions. Finally, anecdotal evidence was taken from open-ended comments given on the survey.

4. BACKGROUND

4.1. Local Program

The Local Program consists of all projects included in the State’s Federal/state Local Bridge Program, the Federal Surface Transportation Program (STP) Urban, the Federal STP Rural, the Federal Congestion Mitigation and Air Quality (CMAQ) program, the state Transportation Economic Assistance (TEA) Program, the Federal Hazard Elimination and Safety (HES) Program, the Federal Enhancements Program, and the Federal Transportation and Community and System Preservation (TCSP) Program (3). Essentially, the LP consists of all the WisDOT projects which are administered for the benefit of local governmental agencies, including Towns, Counties, Cities, and Villages. According to the Federal Highway Administration (FHWA), “The purpose of the FHWA local program is to provide an effective program of local projects through effective implementation of other Federal-aid programs that properly incorporate application and administration of the programs at the local level” (4). FHWA requires that the State and/or LPA (local public agency) ensure that projects be “developed and administered in full compliance with Federal and state requirements and that projects are based on standards that ensure safe, cost-effective, operationally efficient highway systems” (4).

The Government Accountability Office (GAO), in a report on the increased reliance of government agencies on contractors, stated that, “As a condition of receiving Federal funds, states must adhere to Federal laws and regulations. In particular, states must ensure that their highway program activities comply with title 23 of the United States Code (U.S.C.) and title 23 of the Code of Federal Regulations (C.F.R.), which contain provisions relating to the Federal-aid highway program. FHWA has issued a number of regulations to implement and carry out these provisions” (1). WisDOT, as a recipient of Federal highway funds, thus must comply with Federal laws and regulations. By extension, any local agency receiving the benefit of a WisDOT-administered federally funded local program transportation project must also comply with those same laws and regulations. WisDOT is responsible for ensuring that
these laws and regulations are followed. While WisDOT has delegated the day-to-day management of LP projects to the MCs, the ultimate responsibility for compliance continues to lie with WisDOT.

The LP consists of approximately $150 - $250 million per year of state lets, with the majority being in the Urban STP, Rural STP and Bridge program areas. These areas make up the majority of LP projects, and also makes up the main focus of this study.

4.2. MC Program Details

Prior to WisDOT’s realignment into Regions and the implementation of the statewide MC program, MCs were being used in two WisDOT districts. MCs had been used in the Southwest District for 25 years and in the Southeast District for 10 years. According to staff interviewed for this project, WisDOT staff levels were not felt to be adequate for the LP before MC statewide implementation. This feeling could be supported by the FHWA reviews completed prior to MC program implementation, in which it was found that the LP was not being managed in a way consistent with FHWA requirements.

WisDOT defines the MC as “the consultant providing services for those PROJECTS locally let in the LOCAL PROGRAM” (3). The MC’s are contracted to provide services for managing the local program in a particular Region, consistent with WisDOT’s mission, vision, and values. MCs operate under a master contract with WisDOT, with projects authorized individually through the use of work orders (3).

MCs currently review and/or submit for approval the following documents:

- Pavement Design Reports;
- Design Study Reports;
- Environmental Reports;
- Plan Title Sheet for WisDOT Region;
- PS&E Plan Letter;
- Start Work Orders/Notice to Proceed;
- Partial/Final Construction Acceptance Letters;
- Construction Contract Modifications (under $25,000);
- Construction Contract Modifications (no cost);
- Tentative and Final Pay Estimates; and
- Right of Way Plat Sheets.

MC involvement in LP projects begins early, although front-end involvement of MCs is low. The MC is generally notified when a new Program containing lists of approved projects is released. Regions may use MCs to review applications and do site visits, but MCs do not develop Concept Definition Reports (CDRs). Local agencies submit applications for projects to WisDOT Regions. The MCs have no concrete role until the approved project list is distributed. Once this list is distributed, Regions notify LPAs, and the Region Planning Section notifies the MC. Although MCs used to be involved in financial and scoping portions of the process, under the current process, the MC does not charge anything against a project account until project authorization. This allows the MCs to focus on project delivery, preliminary engineering, final design, and construction which are the roles they are intended to fill. As the project progresses, MCs become instrumental in review and submittal of the project environmental document developed by the design consultant.

Prior to statewide implementation of the MC program to manage the LP, the WisDOT LP project delivery essentially followed the form of Figure 1 with oversight of the LPA project management process at the District level. The LPA and the District provided direct oversight of the design and construction oversight consultants.

When MC oversight was first implemented on a statewide level, program and project oversight was provided by the WisDOT Central Office through its Statewide Local Project Delivery Unit within the Bureau of Project Development. The Bureau of Transit, Local Roads, Rails & Harbors also had a Local
Programming Unit that had responsibility for overall program management, project selection, and funding issues. “Each Region Office had an assigned Local Project Delivery Manager, who reported directly to the Statewide Local Project Delivery Manager, and who had direct responsibility for administering and overseeing the Management Consultant contract for each Region. Each Region also had an assigned Local Program Manager who was responsible for project-level programming and funding issues. The direct day-to-day management and oversight of local projects was provided by Management Consultants (MC), with a different MC assigned to each of the five regions” (4).

Figure 1. Pre-MC Management Hierarchy for LP Projects

The current WisDOT LP project delivery model delegates direct project oversight on LPA projects to a Management Consultant who reports to a WisDOT Regional Project Manager (PM). The MC then works directly with the design and construction management consultants, but is overseen by WisDOT. FHWA treats MC oversight as WisDOT oversight (5). See Figure 2 for a graphical representation of this model.

Figure 3 gives a conceptual model of the WisDOT non-LP project delivery model, for contrast with the MC model shown in Figure 2. In this model, design and construction consultants are directly overseen by WisDOT PMs.
Management Hierarchy for WisDOT Management Consultant LP Projects

Division of Transportation System Development

Regional Office

Regional PM

MC’s

LPA

Design Consultants

Construction Consultants

Program Level

Project Level

Figure 2. Current Management Hierarchy for LP Projects

Management Hierarchy for WisDOT Non-LP Projects

Division of Transportation System Development

Regional Office

WisDOT PM

Design Consultants
Or In-house WisDOT Project Leader

Construction Consultants
Or in-house WisDOT Project Leader

Program Level

Project Level

Figure 3. Current Management Hierarchy for Non-LP Projects
4.3. Factors Precipitating the Shift to Statewide use of MCs

FHWA completed a performance review of the WisDOT LP in 2004, in which a number of deficiencies were noted. Some of the concerns raised by the FHWA included (6):

- “There has clearly been a trend toward reducing the amount of total staff time spent on the Local Program;”
- “Each of the Districts manages and oversees the project development phase of the [Local] Program in different ways;” and
- “WisDOT offers a much higher degree of assistance to the locals in the areas of consultant selection and negotiation. On the other hand, WisDOT lacks consistent oversight procedures to ensure Federal requirements are routinely met.”

Another factor that must be considered when analyzing the shift to statewide use of MCs is the change in WisDOT staff, coupled with changes in program size. WisDOT has seen its staff reduced, while the WisDOT budget and workload have increased significantly. This circumstance has required WisDOT to look for ways to improve outcomes and results by adjusting the manner in which it applies its resources to the LP.

Other groups had also identified areas of concern/problems: (i) inconsistency in program delivery across districts; (ii) priority of the local program within the state; (iii) inconsistency in the design and review process; (iv) lack of access to guidance for LPAs; (v) project delivery schedule and impact of delays.

The Wisconsin Transportation Builders Association (WTBA) identified four major areas of concern in the administration of the local Federal-aid program: (i) insufficient level of DOT review and oversight (quality of bid documents, increase in special provisions in design, lack of innovative concepts on local projects, increase in number of change orders); (ii) state emphasis on quality improvement for state projects was not the same for local projects; (iii) insufficient training for local governments and consultants; (iv) County Highway Department ‘force account’ work.

4.4. FHWA-Identified Issues

The MC program was instituted in response to a number of shortcomings in WisDOT’s management of the LP identified by FHWA. From various source documents and interviews with FHWA and WisDOT personnel, a number of concerns surfaced from this time period. First, there were concerns over the tracking and management of Local projects from a State perspective. Second, the LP seemed to be run largely on the basis of anecdotal information. LP projects lacked consistency in a number of areas: (i) project activities; (ii) project risk; (iii) state oversight activities; and (iv) Federal program guidance and FHWA oversight. FHWA identified a number of issues and concerns, in the areas of:

- Internal controls:
  - Knowledge of Federal requirements;
  - Policy/procedural guidance for LPAs;
  - Statewide policy and/or procedural consistency;
  - Application of standards;
  - Project documentation;
  - Checks on LPA capability;
  - Proposal items; and
  - Use of multiple sets of standard specifications.

- Financial Management:
  - Project eligibility;
  - Financial controls and billing;
  - Ineligible items and costs; and
  - Inconsistent state oversight.
• Procurement:
  o Consultant selection; and
  o Self performance by LPAs.

• Oversight:
  o Inadequate staffing and resources;
  o Lack of proper project inspection;
  o Poor quality control;
  o Construction management/contract administration concerns;
  o State oversight consistency;
  o Documentation;
  o Testing levels; and
  o Construction safety.

5. DATA REVIEW AND GAP IDENTIFICATION

The research team set out to identify existing WisDOT sources of data, identify new needed sources of WisDOT data, and identify new outside stakeholders with potentially useful data and information.

WisDOT data from sources including past stakeholder surveys, MC self-evaluation documents, project manager evaluations of MC firms, the 2005 FHWA Local Program Report, and past years’ cost trend analyses were reviewed. WisDOT and FHWA data sources reviewed initially are listed in Table 1.

Table 1. WisDOT and FHWA Data Sources Reviewed

<table>
<thead>
<tr>
<th>Document</th>
<th>Data Types</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWL Master Contract/Short form KJohnson Contract</td>
<td>MC responsibilities, duties, and compensation</td>
<td>WisDOT</td>
</tr>
<tr>
<td>Local Program MC Evaluation Summary Presentations (08,09)</td>
<td>Basic data on services performed by MCs – how many projects, costs, negotiation time, etc.</td>
<td>WisDOT</td>
</tr>
<tr>
<td>Electronic Stakeholder Survey (08, 09)</td>
<td>Outside stakeholder impressions of MC performance</td>
<td>WisDOT</td>
</tr>
<tr>
<td>2005 FHWA Local Program Report</td>
<td>Baseline data - cost accounting and local force account review</td>
<td>FHWA</td>
</tr>
<tr>
<td>FHWA Oct. 2009 review of WI Local Program</td>
<td>Updated performance information on WisDOT LP</td>
<td>FHWA</td>
</tr>
<tr>
<td>State/ Municipal Agreement templates</td>
<td>MC responsibilities and duties</td>
<td>WisDOT</td>
</tr>
<tr>
<td>Guide to Non-Traditional Transportation Project Implementation</td>
<td>Project roles and responsibilities</td>
<td>WisDOT</td>
</tr>
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</table>

5.1. FHWA Studies and Recommendations

FHWA Division Offices are encouraged to assess the required resources (i.e., staffing, training) necessary to ensure that STAs (State Transportation Agencies) perform their stewardship and oversight activities. As such, a review of the administration of Federal-aid projects by local public agencies conducted by FHWA in 2006 used review guidelines developed from FHWA Federal-aid program delivery requirements of (12):

• Program Management;
• Project Development;
• Right-of-Way;
• Environment;
• Contract Advertisement and Award; and
• Construction and Contract Administration.

Findings of this FHWA study expressed the following (12):

“In general, State reviews of LPA administered projects, especially design and construction activities were found to be cursory at best, and States were reactive in oversight rather than proactive. Many States face very limited staffing ceilings and some have experienced recent cuts in staffing. The sufficiency in the number and experience of State staff assigned to monitor LPA projects is in many cases questionable.”

This conclusion, arrived at a time before statewide implementation of MCs in Wisconsin, offers a clear description of the problem WisDOT sought to solve by implementing the MC program.

In that same report, FHWA offered observations on the state of Local Programs throughout the U.S., in general (12):

• Lack of standardized record keeping requirements for LPAs;
• Consultant selection issues;
• Insufficient LPA knowledge of Federal-aid personnel;
• Lack of follow-up on checklists;
• Need for implementation of assistance manuals;
• Insufficient STA staffing levels to provide oversight of LP projects;
• LPA certification/qualification inconsistencies;
• Poor communication of policy and regulation changes;
• Billing issues (not reviewing, not timely, slow close-outs);
• Lack of design quality reviews;
• Lack of substantive PS&E review;
• Lack of implementation of ADA (Americans with Disabilities Act);
• Use of unapproved design standards by LPAs;
• Use of unapproved specifications and special provisions by LPAs;
• Problems with ROW (right-of-way) negotiations;
• Limited ROW training for LPAs;
• No list of qualified ROW consultants;
• Inaccurate ROW project certifications;
• Excessive dependence of LPAs on consultants to complete environmental documents;
• Understatement of real situation in environmental assessment documents;
• Lack of environmental documentation in files;
• Lack of tracking by LPAs/STAs of environmental commitments through design or to implementation in construction;
• Work occurring prior to Federal authorization;
• Shortened advertising period without approval;
• Lack of hard copy documentation in project files;
• Lack of construction inspections;
- Limited LPA knowledge of materials sampling/testing needs;
- Minimal QA (quality assurance) documentation in project files;
- Lack of on-site final inspections;
- Lack of appropriate billing reviews;
- Lack of financial controls (eligible vs. non-eligible);
- Over-reliance on consultant inspection; and
- Lack of review of labor compliance at the project level.

Finally, FHWA concluded that “Project level oversight by the STA is essential. STA project level oversight staff needs to be sufficient to reasonably ensure that all requirements are met and that the project is constructed in accordance with the quality standards established for the program” (12).

5.2. Previous Surveys

Results of past surveys of Local Program Users and Outside Stakeholders rating MC performance from 2009 and 2010 were reviewed as part of the analysis for the current study. The groups who completed both these surveys included representatives from consultant firms, municipalities, the Wisconsin Department of Natural Resources, and WisDOT. The results of the surveys were collected and summarized. Most of the questions on these surveys used a three-level Likert-type scale of: (i) Exceeds; (ii) Satisfactory; and (iii) Needs Improvement. Not Applicable was also a choice. The surveys were broken up into 5 sections: (i) Project Management; (ii) Human Relations; (iii) Engineering Skills; (iv) Quality of Work; and (v) Timeliness. Each of these sections included Likert scale questions, as well as an overall ranking in each area (scale of 0 to 5). Responses were broken down into two categories for this analysis: ‘Exceeds or Satisfactory’ and ‘Needs Improvement’. Detailed results from the past surveys are given in Appendix A. A summary is given in Table 2, and discussed below.

Table 2. 2009/2010 Stakeholder Survey Response Summary

<table>
<thead>
<tr>
<th>Survey Area</th>
<th>2009 Score</th>
<th>2010 Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average % scoring ‘Exceeds or Satisfactory’</td>
<td>Overall Scale of 1 - 5</td>
</tr>
<tr>
<td>Project Management</td>
<td>&gt; 65</td>
<td>3.05</td>
</tr>
<tr>
<td>Human Relations</td>
<td>60 - 70</td>
<td>3.20</td>
</tr>
<tr>
<td>Engineering Skills</td>
<td>70 – 80</td>
<td>3.13</td>
</tr>
<tr>
<td>Quality of Work</td>
<td>55 – 70</td>
<td>3.07</td>
</tr>
<tr>
<td>Timeliness</td>
<td>50</td>
<td>2.79</td>
</tr>
<tr>
<td>Overall</td>
<td>-</td>
<td><strong>3.10</strong></td>
</tr>
</tbody>
</table>

5.2.1. Project Management

Generally, questions related to the MCs’ performance in the ‘Project Management’ area scored ‘Exceeds or Satisfactory’ 65% or more of the time. 35% rated the performance as ‘Needs Improvement’ or ‘Not Applicable (N/A)’. The scores were consistently slightly higher for the 2010 survey than for the 2009 survey. This was reinforced by the overall ratings given at the end of the Project Management section. The 2010 respondents gave a 3.50/5.00 average rating, while the 2009 respondents gave a 3.05/5.00 rating.
5.2.2. Human Relations

Respondents in 2010 generally responded with Exceeds or Satisfactory 70% - 80% of the time, while for 2009 respondents the responses were Exceeds or Satisfactory 60% - 70% of the time. In 2009 30-40% responded with Needs Improvement or N/A, while 20-30% responded this way in 2010. Again this is reflected in the two overall ratings. 2010 respondents rated Overall Human Relations at 3.58/5.00, while 2009 respondents rated it at 3.20/5.00.

5.2.3. Engineering Skills

Engineering Skills questions in general received a score of Exceeds or Satisfactory 70% - 80% of the time from both the 2009 respondents and the 2010 respondents. 20-30% responded with Needs Improvement or N/A. While these scores were generally slightly higher for the 2009 respondents, again, the 2010 respondents gave higher overall ratings. 2010 respondents rated Engineering Skills at 3.55/5.00, while 2009 respondents rated them at 3.13/5.00.

5.2.4. Quality of Work

Quality of Work scores were in the Exceeds or Satisfactory range 75% - 90% of the time for 2010 respondents, and 55% - 70% of the time for 2009 respondents. 30% - 45% of 2009 respondents scored these areas as Needs Improvement or N/A, while 10% - 25% scored them this way in 2010. The worst score in that group was the question that asked whether the MC’s services were beneficial to the overall completion and success of the project(s), indicating an overall lower satisfaction level among 2009 respondents than among 2010 respondents. The average overall rating for Quality of Work was 3.40/5.00 for 2010 respondents and 3.07/5.00 for 2009 respondents.

5.2.5. Timeliness

In the Timeliness section of the survey, 2010 respondents answered Exceeds or Satisfactory around 60% of the time (40% responded Needs Improvement or N/A), and 2009 respondents around 50% of the time (50% responded Needs Improvement or N/A). This was the lowest scoring section of the survey, with an overall rating of 3.07/5.00 from 2010 respondents and 2.79/5.00 for 2009 respondents.

5.2.6. Overall Management Consultant Ratings

The average ratings given for the overall management consultant program were 3.32/5.00 for 2010 respondents and 3.10/5.00 for 2009 respondents.

To summarize the results of this survey, in general 2010 respondents appeared relatively more satisfied with the MC process, while the 2009 respondents appeared less so. While the MC program scored higher all around in Engineering Skills, it scored somewhat lower in Project Management and Human Relations. Quality of Work scored noticeably lower with 2009 respondents, while scoring higher with 2010 respondents. The MC program fared most poorly in the Timeliness section of the survey, with lower scores from both groups. Overall, the trend seems to be a more favorable view of the MC program in 2010 than in 2009.

5.3. Summary of Previous Survey Comments

The comments from the 2009/2010 Outside Stakeholders and LP Users surveys were analyzed, and can be summarized as follows. First, there was a theme throughout the comments of MCs being too detail oriented, too picky, too detailed, and not flexible enough. Many of these commentators felt that MC comments on submittals seemed to be preferences, not requirements or seemed to be minor details that did not improve designs or constructability. They felt that MCs could only see one way of doing things, and were perhaps following rules too rigidly. That said, some commentators also saw the MCs’ attention to detail as a positive. A related thread of comments asserted that MCs provide redundant oversight, and that MCs do not have sufficient authority. These respondents tended to feel that the MC needs to be able to make more decisions, rather than passing decisions on to WisDOT or FHWA – this was seen as adding
an additional layer of management without a real benefit. A related comment was that the MCs have caused the LP to become more process oriented than results oriented. The other most common comment was that the MCs were not timely enough. Due dates were extended, and projects unnecessarily delayed, due in some part to a lack of responsiveness and communication problems with MCs. Some respondents felt this could be attributed partially to a lack of a single point of contact with MCs.

Some of the other comments collected referred to an inconsistent review process, implied that the MCs have too large a workload, lamented the loss of relationships between LPAs and WisDOT personnel, and argued that more ‘by the book’ management has increased project costs. A number of respondents felt that MCs do a good job of representing WisDOT’s interests, but do not represent LPAs’ interests as well as they would like.

Finally, another common theme throughout the comments was that the MC program had improved over the past two years. Whether this perceived improvement was due to improvements in the MC performance, more familiarity with the program by all stakeholders, or both is not discernible from the data. Although far from being a conclusive trend, the overall scores from 2010 seem to bear this out, being consistently slightly higher than the 2009 scores.

The 2009/2010 stakeholder surveys and comments were used to help shape questions to be asked in the stakeholder survey undertaken for the current project.

6. SUPPLEMENTARY LITERATURE REVIEW SUMMARY

In addition to WisDOT and FHWA sources, an external literature review was conducted. Literature was sought to obtain outside input on MC performance, specifically from the state of Wisconsin, to locate any experiences with management consultants in other states, and to review research on measuring consultant performance. A more detailed version of the Supplementary Literature Review may be found in Appendix B.

6.1. Measurement of Consultant Performance

The current study was charged with focusing on cost, consistency, and compliance. Numerous studies have been performed both in Wisconsin and throughout the nation to determine benefits and costs of using consultants to perform work for state highway agencies. The vast majority of these studies focused on the cost of contracting work out to consultants versus the costs of performing the work in house. These reports were studied both for their results and for their processes. Comparisons of performance on design and construction projects are very difficult, due to the fact that highway and bridge projects involve a large number of variables that are difficult or impossible to control. The most important of these variables are often the project size, complexity, site and underground conditions, but also include differing weather conditions, different designer/contractor/construction manager combinations, as well as differing oversight conditions. It is very difficult to identify ‘like’ projects and compare the costs of those performed by in-house employees and those performed by consultants or contractors. It is often difficult to isolate other variables that may have impacted costs (1). Few studies attempted to systematically determine the benefits of in-house performance versus contracting out of work.

Thus, it is very difficult to compare a project managed by MCs to a project managed by the state. The literature review for the current study, while not focusing specifically on management consultants, focused on ways of measuring and comparing the performance of consultants in general on transportation construction projects. While the limited scope and timeframe of the current study may preclude a definitive, quantitative cost evaluation, this portion of the study was included in an effort to lay the framework for necessary data collection and methodology that may lead to a definitive cost evaluation.
6.2. Literature Conclusions

One study concluded that, while in-house design costs are lower than contracted out design costs, “The cost difference appears to be almost entirely due to the fact that consultant designs incur an additional expense to the DOT in the form of contract preparation and supervision” (8). In addition, consultants often work on larger, more complicated projects, so it is reasonable to expect that the costs of design, construction, or construction management work may be higher than the average (1). Other studies have concluded that there is no significant difference between the cost of in-house design and the cost of consulting engineers (9).

A report by the Government Accountability Office (GAO) concluded that most studies have found that quality did not vary significantly depending on whether the work was contracted out or performed in-house, although some metrics lean towards a higher quality on in-house designed projects (1). In this GAO study, the common opinion of state DOT’s studied, supported by other anecdotal evidence, was that quality did not varying significantly between contracted and in-house work. A study by the state of Alaska cited in this GAO document found, based on the metrics they used (number of change orders), that in-house designs were of higher quality (1).

WisDOT does not separately track construction engineering expenditures, but it does track expenditures by project. Project expenditures typically include those related to project design, real estate acquisition, and construction. Projects may also involve other expenditures, such as those related to environmental mitigation, historic preservation, traffic mitigation, insurance, and landscaping (10). Activity codes charged for State and Local projects, respectively, could be a valuable source of cost data.

Another study reviewing past privatization of local government functions showed that cost saving through contracting work out can originate from two basic sources: (i) reduced benefits to workers (in the form of lower wages, but, particularly, in reduced fringe benefits); and (ii) increased productivity (11). A survey of state DOTs revealed that respondents felt that contracting out services would be unlikely to cost less than doing the work in-house due to added tasks such as bid management, supervision of progress and approval of plans (11). These two studies, taken together, illustrate the difficulties in making conclusions about the cost of contracting out tasks versus keeping them in-house.

Surveys also revealed additional factors that should be considered in making consultant decisions. “The additional factors that should be considered are the impact the use of consultants have on in-house service conditions [including advancement potential within the agency, morale, job satisfaction, loss of expertise and knowledge transmittal within the agency], the extent to which consultants are used to relieve peak demands, the ability of the state organization to meet deadlines without consultants, and the development of a strong consulting engineering base as a resource for the state” (11).

Most studies reviewed indicate that productivity of in-house and consultant staff is comparable, but if SHAs do not have a reservoir of personnel resources to draw upon as do the consultants, this may lead to delays. Some studies have also suggested that some states feel a strong community of consulting engineering firms within a state is a valuable resource that can generate economic activity through winning contracts from outside the state, and so should be encouraged (11).

The following factors were identified in the literature review to form the basis for determining a recommended level of consultant use (11):

- The cost of using consultants relative to the cost of using in-house staff;
- The quality of work performed by consultants relative to that of in-house staff;
- The frequency and magnitude of peaks in work load that exceed in-house capacity;
- The extent to which contracting out work is affecting career development of in-house staff in terms of the type of work performed (i.e., nature, variety and complexity of work that generates experience and marketable skills) and opportunities for promotion;
- The state’s ability and desire to expand or reduce its staff; and
• The state’s desire to increase, or decrease, support to the local contracting and consulting industry in order to maintain a strong base of firms able to perform the services required by the state and to potentially win out-of-state jobs, bringing economic growth to the state’s contracting/consulting industry.

6.3. Potential Disadvantages of Contracting out WisDOT Services

In addition to the potential for added costs, a number of other possible negative aspects of contracting out services, such as using MCs, were noted in the literature. Wisconsin Legislative Audit Bureau (WLAB) noted that studies have indicated that “as state staff become further removed from the day-to-day management of highway construction projects, they are less able to develop the experience, skills, and expertise needed to effectively oversee construction contractors and consultants” (10).

Excessive use of consultants has also “generated resentment among in-house staff prompted by a fear that their organizations would be reduced in stature, prestige, and influence. In addition, there is concern that conditions of service in the department would be impacted by a reduced variety of work and fewer opportunities for career advancement” (11).


A study was done by Cochran et al. to identify best practices among State Highway Agencies (SHAs) in regard to consultant management. The best practices identified included: separation of the “technical” and “administrative” aspects of consultant project management; the importance of effective consultant evaluation systems; and the effectiveness of decentralized consultant program activities (2).

7. PROGRAM EVALUATION

The final goal of the current study was to determine the effects of the MC program on the performance of the LP in terms of cost, compliance and consistency, and to determine whether these three indicators have improved, deteriorated, or remained unchanged since implementation of the MC program. Additional data collection was necessary to evaluate the MC program. WisDOT personnel, as well as outside stakeholders were contacted for input, interviews, and additional relevant documents.

7.1. Central Office Perspectives

FHWA lists the four core assessment elements of the LP program as: (i) Program Management; (ii) Project Environmental Process; (iii) Project Design; and (iv) Project Construction (4). Accordingly, these are the four areas on which the Central Office interviews were focused (4).

7.1.1. Program Management

The Programming Section of WisDOT is tasked with answering questions about how Federal money is spent. As such, concerns mentioned by Planning and Programming personnel in interviews were related to the ability of Programming to answer these types of questions. Programming is mainly concerned with how MCs track local projects, particularly costs.

Previously, MCs used to be involved in the Financial and pre/scoping portion of the project process. MCs used to work on State/Municipal Agreements. Recently, WisDOT Programming has resumed control of the State/Municipal Agreements. Under the current process, MCs should not be charging anything against a project account until project authorization. This allows MCs to focus on Project Delivery and Construction, where they are intended to be focused.

Program management was an area where WisDOT identified improvements to the MC program, and implemented these changes to improve the quality of State/Municipal Agreements. The WisDOT Programming section was understaffed, but staffing levels have been improved recently. This is also an
example of an area where MCs were able to ‘ramp up’ their work when WisDOT was understaffed, and now to ‘ramp down’ once WisDOT staff levels have increased.

7.1.2. Project Environmental Process

The Environmental Document is an important component to every project. Bureau of Equity and Environmental Services (BEES) personnel stressed that Environmental Documents are not always viewed as important, but without an approved Environmental Document, there can be no project. Review and submittal of the environmental document is a key function of the MC. FHWA staff members have stated that prior FHWA reviews indicated that proper environmental documentation was not being completed in a significant number of cases.

The process for development and submittal of project environmental documents may follow one of four paths. First, if a LP project requires an Environmental Impact Statement (EIS), Environmental Assessment (EA), or an Environmental Report (ER) that includes a Section (4f) analysis (historic resources, parks, wildlife refuges, etc.), the LPA’s design consultant submits the environmental documents to the MC for review. The MC then accepts and submits the document to WisDOT (BEES). BEES then approves the documents and submits them to FHWA. For all non-LP projects requiring an EIS, EA, or an ER that includes a Section 4(f) analysis, the WisDOT PM submits the environmental documents to the WisDOT Region Environmental Coordinator (REC) for approval. The REC then submits the documents to BEES, which reviews them and submits them to FHWA for approval. For LP projects with an ER or Programmatic ER (pER) having no Section 4(f) impacts, the LPA’s design consultant submits environmental documents to the MC for review. The MC then approves the documents and submits them to the FHWA Area Engineer. Finally, for all non-LP projects with an ER or pER having no Section 4(f) impacts, the WisDOT Region PM submits the documents to the REC for review. The REC approves the documents and then submits them to FHWA. These four paths are summarized in Table 3. FHWA either accepts the environmental document or returns it for revision.

Table 3. WisDOT Environmental Document Processes

<table>
<thead>
<tr>
<th>Environmental Document Type</th>
<th>ER, pER (no 4(f))</th>
<th>ER w/4(f), EA, EIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-LP project</td>
<td>WisDOT PM → REC → FHWA</td>
<td>WisDOT PM → REC → BEES → FHWA</td>
</tr>
<tr>
<td>LP project</td>
<td>Designer → MC → FHWA</td>
<td>Designer → MC → BEES → FHWA</td>
</tr>
</tbody>
</table>

WisDOT BEES sees environmental documents for, at most, approximately 25% of projects (overall), working out to approximately 25 projects per year per region. WisDOT BEES personnel interviewed have found that local design consultants sometimes do not produce acceptable environmental documents, due to lack of experience. Projects that come to BEES are often the more complex projects, and so more likely to have problems. When there is a problem on an MC project, WisDOT works directly with the MC. The MC then goes back to the designer, who makes the necessary changes. WisDOT BEES staff members give feedback directly to MCs, which is actually a more streamlined process than on state projects, as the point of contact for BEES on LP projects within WisDOT is not always clear to BEES personnel. FHWA has stated they prefer not to have to review environmental documents, but would rather that BEES complete the review, and then forward the final documents to FHWA for approval.

Overall, BEES sees little significant difference between environmental documents prepared by Region staff and those prepared by MC-supervised design consultant staff in terms of quality and compliance. BEES staff tends to hear about projects that have difficulties or problems, while not necessarily hearing about the projects that go well. BEES staff has stated that documents reviewed by MCs often require extensive corrections. Many of the issues that exist with MCs preparing environmental documents also exist when WisDOT staff prepares them. While BEES can sometimes tell that MCs have not properly
reviewed environmental documents, MCs are generally knowledgeable about requirements and process, and MCs can be helpful to ensure that the proper process is followed. The North Central Region has had some MC issues with environmental documentation, but BEES has put together a review document guide for MCs, PMs, consultants, and RECs to improve the environmental document development process, which includes an environmental document checklist that requires the signature of the MC to ensure it has been reviewed. The document requires 4 signatures: (1) MC; (2) Local Roads PM; (3) BEES; and (4) FHWA.

7.1.3. Project Design
The general design process under MC management involves LPAs or their consultants preparing the PS&E documents and submitting them to the MC for review and processing. The MC reviews the PS&E documents and ensures that the appropriate documents are signed by the LPA and the WisDOT Local Program PM. Upon approval by the Local Program PM, the documents are submitted directly to the Proposal Management Section, where the contracts are finalized and signed. One critical FHWA concern in the Design phase is to ensure that WisDOT is approving all documents that cannot be delegated to the MC.

None of the literature reviewed nor interviews conducted gave any indication that project design has suffered under MC supervision. In fact, the general consensus of interview subjects was that, if anything, the project design process has improved under MC management. Generally, MCs do a better job of facilitating and overseeing project design than some of the LPAs, who may have Federally funded projects on a very infrequent basis. MCs, who have more experience with Federally funded projects generally are able to streamline this process and minimize compliance issues that tended to occur when LPAs had a greater amount of responsibility for managing their own projects in the past. However, WisDOT management has noted a continued struggle with timeliness and accuracy of documents (such as PS&E documents) submitted by MCs at the end of the project design phase.

7.1.4. Project Construction
In its most recent review of the WisDOT LP, FHWA found a number of examples of proper procedures in place, but not being followed in the MC program. They found examples of local lets having advertisement periods less than the required three weeks; inconsistent file reviews by WisDOT Region PMs; re-evaluation of cost effectiveness findings (CEF) upon completion of final engineer’s estimate not found in files or not completed; a lack of documentation of site visits by MCs or Region PMs during construction or of final inspections; and a lack of required documents in project files, such as Completion Certificates, Letters of Acceptance, Materials Certificates, materials acceptance results, or materials verification tests (15). The FHWA review suggested that these problems could be overcome through stronger oversight of MCs by WisDOT staff, and more time devoted by WisDOT staff to MC project oversight review with an emphasis on file review for proper documentation. WisDOT staff must also perform spot checks of MC managed projects and complete detailed and accurate evaluation of MC performance, which is an FDM requirement (15).

To summarize findings for project construction, the MC process and procedures appear to be successful, but there may need to be a re-assessment of the enforcement of the in-place procedures to realize the full benefit of the MC program in this area.

7.1.5 Overall Assessments of MC Program
WisDOT’s LPA Program Report from 2007 answered a “conditional yes” to the question of whether the State’s oversight program for Federally funded LPA projects was adequate for achieving compliance with Federal requirements. The compliance issues that did exist resulted mostly from lack of focus and support for the LPA program, not from a lack of regulations. Several challenges remain to improve the LP. State leaders need to be convinced that Wisconsin will lose the ability to use Federal funds for local projects unless they commit sufficient resources to ensure that they have and will implement an effective
oversight program. LPAs need to be convinced that they do not have an entitlement to use of Federal funds – that is, they must meet requirements to keep using Federal funds. There is additional need for technical training for the hands-on staff (16).

It has also been suggested that MCs may be able to dedicate more time and focus to management of the LP than WisDOT staff, who may have multiple responsibilities in addition to LP management. WisDOT personnel and consultant organizations agree with this statement.

7.2. FHWA Perspectives

FHWA input was gathered through both review of FHWA documents and interviews with FHWA staff in Wisconsin. According to the FHWA Wisconsin Division 2011 Program Assessment, “WisDOT has made substantial improvements to their local program, and is reducing the number and severity of recurring problems and errors, largely due to the investment and efforts of the MCs” (17).

7.2.1. Summary of FHWA Concerns

FHWA has indicated that “If the Department decides that the use of MCs is the most effective way to manage the Local Program, it is imperative that the Department provide adequate staff to oversee the consultants and ensure that the consultants perform their functions as necessary” (6). The oversight and management of the program will require WisDOT leadership to clearly and convincingly communicate to all stakeholders, in particular LPAs, that WisDOT will fully enforce Federal requirements on WisDOT local projects. WisDOT should ensure that Design consultants and Construction Engineering consultants working on Federally funded Local Projects fully understand and comply with Federal requirements, in particular the need to review, approve, and document all payments that are subsequently submitted by WisDOT to the Federal Government for reimbursement. WisDOT should ensure enforcement of Federal process and documentation requirements. FHWA also believes WisDOT needs to maintain operational guidance for LP projects, since WisDOT often uses LP projects to “test and train consulting firms new to WisDOT procedures and processes” (17).

Some of the problems FHWA has noted included LPAs starting work before FHWA authorization, inadequate documents justifying payment for such work, inadequate documentation for payments to LPAs, lack of reconciliation for actual LPA costs, ineligible work added during construction, lack of documentation/verification of quantities provided, inadequate documentation and/or explanation of unique payment issues, inaccurate tickets, pay estimates not matching transaction reports, lack of documented approval of contract modifications, inconsistent and unclear dates and time periods, inaccurate consultant contract schedules, inadequate detail and documentation (especially for subconsultants), lack of documentation of appropriate review, verification, and concurrence, failure to provide invoices to trace expenditure of payments, inconsistencies on project IDs, and math errors.

Another issue identified by FHWA is that there is no single party assigned responsibility for overall ‘financial management’ of projects. The MCs track the majority of costs, but do not have access to project transaction reports to track WisDOT charges. MCs rely on sub-consultants to review and verify costs associated with phases of the project for which they were not responsible. WisDOT in turn relies on MC staff for the same verifications. Having a single party responsible for the financial management of LP projects could significantly improve WisDOT’s ability to ensure that each project expenditure is valid and adequately documented. WisDOT could also do annual reviews of sample complete project files.

FHWA also cautions that there could be a concern that the Regions will focus on state programs, with a corresponding reduction in the emphasis placed on the LP. However, the presence of the MCs can act as a buffer to prevent this, since their funded resources are dedicated to the local program” (17).

Finally, FHWA noted that, “most locals welcome the additional assistance [of MCs] notwithstanding the cost involved. However some locals are not happy paying for the increased State oversight and control.
Therefore the current challenge is to maintain the present level of State (staff and MC) oversight and control while doing so as efficiently and effectively as possible to reduce cost concerns” (17).

7.2.2. Summary of Positive Aspects of MC System According to FHWA

FHWA has stated that the use of MCs in the Regions to administer the LP has been a positive structural change, and has resulted in significant overall improvement in the WisDOT Local Program. The FHWA Review Team felt that with sufficient WisDOT leadership support and resources, the current WisDOT Local Program structure will be able to bring the WisDOT Local Program into compliance with Federal requirements (13).

FHWA has cited numerous successful practices and initiatives in Wisconsin’s LP management since 2006 (17):

- Changes to state stewardship and oversight agreements;
- Development of policy/procedures/guidance documents;
- Training initiatives;
- Development/Updating of Certification Programs; and
- Extraordinary ARRA efforts (extraordinary training efforts, increased oversight, attention at PS&E phase, consultant management, and use of state contracting procedures for LPAs).

FHWA still feels that a significant number of LPAs and LP consultants need substantial assistance and oversight from an institution such as MC management, because many LPAs do not frequently have Federally-funded LP projects, and because WisDOT tends to use LP projects to train and improve consultants (17).

Because LPA interests do not always align with Federal or State requirements, MC management acts as an important intermediary. “WisDOT staff and MC personnel are increasingly able, absent high level political pressure, to manage the local program consistent with Federal and State expectations” (17).

According to FHWA, WisDOT’s LP central office structure was a best practice with Region LP Delivery Managers reporting directly to a Central Office LP Manager. This structure provides clear, consistent, statewide leadership in implementation of the LP. It also ensures that state projects do not receive emphasis at the expense of local projects when WisDOT personnel have responsibility for both local and state projects. The centralized LP Office also provides training, guidance, manuals, and other efforts to improve the consistency and quality of administration of the LP. The use of regional MC contractors to administer the LP was also viewed as a best practice. This has led to greater consistency in meeting State and Federal requirements throughout the LP, and higher quality in implementation of the LP (13).

7.3. WisDOT Region Project Manager Interviews

The LP Project Managers (PMs) at each of the five WisDOT Regions were interviewed over the phone for their input and impressions of the MC program. The interview instrument is shown in Appendix C and results are synthesized below.

The PMs agreed that their overall working relationship with the MCs was good to excellent.

When asked to identify an area where the program could be improved, MC competence was cited once, and MC costs were cited twice. Other areas mentioned by a PM in the interviews included experience and/or assertiveness of WisDOT Region personnel, timeliness of reviews, and an inflated level of assistance from MCs due to issues with quality of design consultants and experience or knowledge of LPA personnel, and potential conflicts of interest when MCs negotiate scoping, design and construction contracts with LPAs. Several agreed that the program has improved since its inception due to learning curves, and that even if an alternative method of managing the LP were identified, WisDOT staffing realities would make it extremely difficult for WisDOT to take it back over.
PMs were generally in agreement that they were satisfied that the MCs are acting as advocates for WisDOT, and that MCs take an ownership stock in projects they are working on. While it is important to remember that the projects belong to the LPAs and not to the MCs, several PMs pointed out that it is in the MCs’ best interest to do a good job, as their reputations are on the line, and for many of them managing the LP is the core or majority of their business.

Ratings of the responsiveness of the MCs to requests, questions or concerns and the timeliness of their responses were consistently positive. One PM pointed out that if an MC is not responsive, the PM must be assertive, and generally if that happens the MC responds. There was some feeling that ARRA stretched the MCs’ capacity, which reduced responsiveness, but this was seen as a unique situation, and overall responsiveness and timeliness was rated as good. One assertion was that MCs are able to be more responsive than WisDOT personnel, because the PM has greater ability to manage the MC on LP projects than to manage other WisDOT personnel on State projects. Timeliness during design was seen as more of a problem than during construction. Design deadlines are pushed too often, but this was attributed to a variety of factors, including MC, PM, LPA and design consultant actions. MCs were seen as effective at responding to changes in workload, in at least one case even hiring additional personnel when timeliness improvements were requested by PMs.

Generally, communication with the MCs was seen as adequate or better by the PMs. Some MCs were specifically singled out as being especially proactive in responding to issues and informing their PM.

The amount of MC staff utilized to manage the LP was rated as appropriate by all PMs but one, who rated the levels as too low, though this was based mostly on ARRA project experience. One issue brought up related to staffing was that some MC personnel do not work full-time, but solutions have been worked out between PMs and MCs. Generally, it was agreed that MCs do a good job of making needed adjustments in response to changes in workload (e.g., ARRA), and bringing in needed expertise.

PMs felt their level of time commitment on LP projects managed by MCs was appropriate. Several mentioned that they wished they had more time to spend on particular projects, and at least one stated that the MC occasionally had to wait for the PM to respond because of workload. The amount of interaction with MCs, while varying from project to project, was generally rated as appropriate, as well. MCs are generally solving small problems themselves and bringing larger, more complicated problems to PMs. One response indicated too much ‘hand holding’ of inexperienced designers, and this problem was mentioned by other respondents at various times throughout the interviews.

Generally, the PMs responded that costs of MC-managed projects were higher than if WisDOT administered the program internally. One responded that the cost was about the same or somewhat higher, while another responded that costs were much higher. All acknowledged that there were a number of complicating considerations to this question. Some of these considerations are summarized as factors leading to higher costs cited by PMs:

- More total hours dedicated to LP projects;
- Higher administrative costs due to increased layers of reporting (MC personnel who report to MC management, who report to a WisDOT PM, as opposed to a WisDOT PM handling management);
- Loss of ‘free rides’ for LP projects (e.g., state personnel stopping by an LP project site on the way to a State project and charging the whole trip to the State project);
- Higher hourly rates for MCs;
- Profit for MCs;
- WisDOT’s move to require Professional Engineers on all LP projects instead of technicians around the same time the MC program was implemented statewide;
- More accurate charging of time – previously, all costs associated with LP projects were not captured in the project because charges for LP projects were sometimes mis-charged to State projects; and
• Increased costs associated with greater compliance with Federal regulations and requirements, leading to higher oversight costs and higher costs for consultants who have to submit to more reviews and changes.

Based on the increased amount of oversight required by FHWA, which led, in part, to state-wide implementation of the MC program, the number of hours spent on LP projects would have increased over this period whether WisDOT managed them in-house or used MCs. However, MCs have higher per-hour costs than State staff, and it was asserted that WisDOT staff with adequate training could handle the LP less expensively.

One PM saw higher construction costs, but asserted that MCs were more efficient and more dedicated to LP management than WisDOT staff could be.

There were also several factors that were cited as cost saving aspects of MC management of the LP:

• MCs have a better ability than WisDOT to bring in appropriate experience, expertise, or specialists from elsewhere in their organizations and to better utilize them for short time periods;
• MCs can more easily utilize part-time administrative staff for the LP, and hiring in-house full-time staff would cost WisDOT more because of the difficulties in allocating these full-time personnel among LP and State program functions;
• MCs give a higher priority to LP projects than would be given under management by WisDOT, due to the fact that MCs are dedicated to and focused solely on LP projects, and so the MC program leads to more time spent on LP projects with resultant higher oversight and better compliance;
• MCs tend to be more concerned with charging their time to the appropriate project than WisDOT personnel, due to the billable culture of consultant organizations;
• On State-managed projects, there are more levels of hierarchy and management to charge to a project, whereas using the MC model, generally the PM will be the only WisDOT personnel to charge time to a LP project; and
• The Region PM has more direct control, with less input from other WisDOT staff under the MC program.

A related question asked whether PMs felt that WisDOT was getting value for the money spent on MCs. Two respondents felt that, while MCs did good work, the program was not the best value for WisDOT, due to the MC’s higher per-hour costs. There was general consensus, however, that MCs are providing WisDOT with value in terms of the goals set for the program, which were increased compliance and consistency within the LP. However, attainment of these goals is costing more than the LP cost before MCs and probably more than if WisDOT were to revert to managing the LP in-house.

Generally, the amount of changes on LP projects was viewed as about the same or lower than what would happen on WisDOT-managed projects. There was agreement that the levels of changes were heavily dependent upon the project and the design/construction oversight consultants involved. The respondents who felt the number was slightly lower attributed this to MCs providing tighter control and oversight of the design process, which leads to fewer construction change orders.

The MCs’ level of focus on complying with WisDOT and FHWA standards and regulations was rated as appropriate. One respondent rated it as ‘Excellent’. Compliance was seen as the MCs’ top priority, and this was felt to be appropriate, based upon their duties.

Generally, the level of MC knowledge regarding WisDOT and FHWA standards and regulations was rated as good or very good, once initial learning curves were overcome. One PM rated MC knowledge in construction as lower than it should be. One PM described a system of involving MCs directly in FHWA project reviews, so that the MC develops a direct relationship with FHWA, understands FHWA expectations and implements this understanding in their management of LP projects.
All respondents felt their LP projects are meeting WisDOT and FHWA requirements well or very well. There was general agreement that compliance of LP projects has improved significantly since implementation of the statewide MC program, and that this improvement was, in large part, due to MC involvement in managing LP projects.

One PM felt that MCs have also improved statewide consistency, and that meetings that involve all PMs and MCs from around the state are essential to maintaining and improving that statewide consistency. Another indicated that MCs also assist in tasks like updating guidelines, which WisDOT staff do not always have adequate time for.

Generally, PMs felt that MCs do a good job in attempting to coordinate and monitor project schedules. It was generally agreed that MCs cannot force design consultants to meet milestones, but that LPAs often see this as a MC responsibility. LPAs often bear some responsibility for design delivery falling behind schedule, and must take responsibility to create realistic schedules at the beginning of the project that incorporate adequate review and turnaround times, and for continuing funding for projects once they are begun.

Project scoping appeared to be an area of inconsistency among the Regions. One Region stated that MCs used to be available for scoping help, but were not often utilized by LPAs. Two others said that MCs were used to help scope contracts using their Administrative contract. Another said MCs had been involved with project agreements but never with pre-scoping. Another said that MCs do not help with applications, but would be available to help with pre-scoping if requested by the LPA. All were aware that scoping and application help have been taken over by WisDOT’s Programming Section and are no longer a duty of the MCs. There was a wide variation on the question of how much help MCs should provide in scoping. One argument was that MCs should be more involved because that would give them more information, leading to faster design. Another argument was that MCs should not be involved in the planning phase, in order to save administrative costs. Another felt that using MCs for pre-scoping was money well spent. Still another felt that the MC’s role should be limited to helping verify project scopes, and another felt that, while MCs should not be completing scoping work, they should be available to answer questions for LPAs during the application/scoping process.

An area of agreement was the improvement of the Environmental Document process and final product by MC involvement. The Environmental Documents are often approved more quickly by FHWA on projects with MC oversight. The Environmental Document is one of the most problematic phases of projects, and MCs allow more effort to be focused on this phase than when WisDOT ran these projects. One interesting point made was that the number of people who review an Environmental Document under MC management is the same as the number who would review an Environmental Document on a State project. This illustrates that the MC program is not adding extra layers of review, at least in the area of environmental documents.

Timeliness of reviews was an issue mentioned on a number of the design consultant and LPA survey responses. The PMs felt that, in general, MC reviews were reasonably timely. There was a feeling that many of the timeliness problems expressed by designers were due to factors outside the MCs’ direct control, such as late submittals from the designers, low quality submittals from designers that required significant review time to correct, and bottlenecks that occur when PMs have to review documents before the MC can return them to the design firm. Timeliness is thought to depend on the firms involved, the project priority (based on visibility, cost, size, etc.), and MC workload. Some Regions have had timeliness issues in the past due to MC workload, but when brought to the MC’s attention, resources were shifted to improve their performance. Generally, PMs felt that design firms need to accept more responsibility for timeliness and allow MCs more realistic time to return submittals, though not all PMs felt this was a chronic problem in their Region. One PM also pointed out that the LPA often dictates the schedule, putting the designer in a difficult position between the LPA (their boss) and the MC. There was
general agreement that designers’ expectations for MC turnaround time are not always realistic, though the degree of these unrealistic expectations varied among the Regions.

Personnel inconsistencies within MC firms have not been an identified problem for any of the Regions. Personnel inconsistencies were cited by some designers as the cause of conflicting reviews of their submittals, but WisDOT personnel have seen no evidence of this. On a higher, program level, one PM did notice personnel changes at the MC firm causing temporary drops in the MC’s level of service.

PMs generally agreed that MCs do a good job of addressing project issues that are their responsibility, while passing on important questions to WisDOT. It was noted that during construction, sometimes MCs have no choice but to pass questions on to WisDOT, because their authority to make changes is not large enough. Three of the five Region PMs felt that MCs needed more authority to make decisions and changes, particularly during construction.

Differences noted on ARRA projects as contrasted with non-ARRA LP projects included:

- Increased needs for status meetings and Central Office approvals;
- Simpler projects, leading to less review time (due to lower complexity),
  - Lower oversight costs during design,
  - Higher construction costs, partly due to increased requirements for data tracking related to ARRA;
- Quality generally depends on how rushed a project is, and some ARRA projects were not rushed, while some non-ARRA projects are rushed;
- ARRA projects went faster, with no drop in quality because the MC knew the ARRA process well;
- ARRA projects were not “business as usual,” and irregularities were allowed to pass that would not normally be allowed (with tacit acceptance by all parties);
- ARRA forced faster turnaround times, which led to a lower level of review than on non-ARRA projects;
- The level of work under ARRA was not sustainable for current staffing levels, either for WisDOT or MCs.

All of the Region PMs felt that ARRA projects could not have been successfully completed without MC assistance.

There was general agreement that MCs are needed on minor LP projects, because the same rules apply as for larger projects. One PM felt that MCs are not as good a value on simple paving projects as on more complex projects. Another pointed out that MCs could actually be more valuable on smaller projects, because they save PMs effort and allow them to focus on higher level, more complex projects where they are more needed. It was also pointed out that complex projects are sometimes actually easier to manage than simpler ones, because the level of experience of firms working on the complex projects is often higher than that of firms working on smaller, simpler projects.

Most PMs felt that the current method of writing individual Work Orders that vary hours and costs based on project complexity and size is an adequate way of dealing with different levels of project complexity. One felt that LP projects outside of STP Rural, STP Urban and Bridge projects should probably not use MCs, due to the non-standard nature and infrequency of these types of projects.

All PMs felt that all project stakeholders and participants are learning and adapting to the MC program and the FHWA compliance requirements. Some LPAs still present a learning curve problem, due to turnover, staffing levels/size of LPA, personality conflicts, or length of time between LP projects awarded. Some LPAs continue to have difficulty with the concept of the increased requirements for compliance and oversight that come with Federal LP money. There was general agreement that the MC
program has improved significantly since its initial implementation, although for some Regions that had been using MCs for a longer period of time before statewide implementation, this was not an issue.

There was general agreement that consistency among the Regions is one of the largest challenges faced by the LP. There was also general agreement that movement of the management of the LP program back to Regions from the Central Office would likely lead to increased problems with consistency in the LP throughout the state. There was concern that Region PMs will gradually begin to conform to their own Region’s practices, because they interact with Region staff more than with other LP PMs. There was concern that Region control leads to additional layers of hierarchy, which could cause inefficiencies. PMs noted a few specific areas they see as inconsistent among the Regions, including contract negotiations, materials and testing, and MC duties.

All PMs interviewed felt that they understood the roles and responsibilities of the MC in the Region. One other issue addressed by one PM is that, when WisDOT policies change, their LP generally runs into any problems associated with that change first, due to the volume and diversity of their LP projects. The MCs often help to work out solutions to these problems, and so contribute to efficiency and consistency across a number of WisDOT programs and the state in addition to the LP.

Finally, multiple comments addressed the idea that MCs are often solely dedicated to the LP, and provide focus and commitment that would be difficult for WisDOT staff to match if personnel that worked on State projects also worked on LP projects.

7.4. New LP Stakeholder Survey Results

To create an accurate picture of the effectiveness of the MCs in the three core areas (cost, compliance, and consistency), it was necessary to assemble as much input from those involved in the process as possible. A survey for gathering stakeholder input was developed with the assistance of the University of Wisconsin Survey Center, and was distributed to LP stakeholders, including LPA personnel, design consultants, and construction oversight consultants. The survey was tailored to yield information on effort, cost (directly or indirectly), compliance, consistency, project processes and efficiency, timeliness, and stakeholder satisfaction (see Appendix D for the complete survey instruments). These three groups were asked to provide their perceptions of a particular MC project they have participated in, mostly from a qualitative or comparative point of view. The survey results were used to gauge MC performance in consistency and compliance, and to get impressions of costs. As much quantitative data as possible was gathered from these survey responses. Complete survey results are presented in Appendix E for each of the three survey groups, and are broken out between ARRA and non-ARRA projects.

Examination of previous MC program surveys and input from WisDOT personnel and other stakeholders produced a list of issues to be addressed in the survey questions including:

- Timeliness (responses to inquiries, decisions, etc.);
- Accuracy (plans, specs, estimates);
- Understanding of rules and roles;
- Consistency (among different MCs and different Regions);
- Roles played by LPAs in oversight of design/construction consultants;
- Who makes which decisions; and
- Quality of work product delivered by MCs.

7.4.1. Project Selection Process for Stakeholder Survey

Lists of Local Program projects from 2008 – 2010 were obtained from WisDOT personnel. The survey was designed to collect information on recent LP projects, and it was necessary to balance the number of surveys distributed with the costs of the survey. To ensure the best possible response rate and accuracy, the survey focused more heavily on recent projects.
Projects selected for personnel to receive surveys were chosen as follows: All of the non-ARRA projects from 2010 were selected (43 projects); one half of the 2009 non-ARRA projects were selected (30 projects); one quarter of the ARRA projects were chosen from 2009 (20 projects) and 2010 (44 projects). These projects were split as evenly as possible among the five Regions. The number of 2010 non-ARRA projects per region were not equal, because the raw number of projects in each Region were not equal.

For the 2009 non-ARRA projects and both years of ARRA projects, the total number of each type of project was calculated based on the proportions given above, and those numbers were split evenly among the 5 Regions.

Once the number of each type of projects was calculated, projects were selected at random from the lists of 2009 non-ARRA, 2009 ARRA and 2010 ARRA projects. A random number generated in Microsoft Excel was assigned to each project. The projects were sorted based on these random numbers, and the projects with the lowest associated random numbers were selected for inclusion in the survey. The original breakdown of selected projects by Region is given in Table 4.

### Table 4. Original Selection Set Breakdown of Selected Projects by WisDOT Region

<table>
<thead>
<tr>
<th>Region</th>
<th>2010 ARRA</th>
<th>2009 ARRA</th>
<th>2010</th>
<th>2009</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWL Region</td>
<td>9</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>SEL Region</td>
<td>9</td>
<td>4</td>
<td>13</td>
<td>6</td>
<td>32</td>
</tr>
<tr>
<td>NEL Region</td>
<td>9</td>
<td>4</td>
<td>10</td>
<td>6</td>
<td>29</td>
</tr>
<tr>
<td>NCL Region</td>
<td>8*</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>26</td>
</tr>
<tr>
<td>NWL Region</td>
<td>9</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44</strong></td>
<td><strong>20</strong></td>
<td><strong>43</strong></td>
<td><strong>30</strong></td>
<td><strong>137</strong></td>
</tr>
</tbody>
</table>

*The reason for the different number of projects in the NCL Region 2010 ARRA list was due to the fact that the NCL Region had only 8 ARRA projects that year.*

In consultation with the UW Survey Center, it was determined that an excessive number of surveys sent to a single recipient would substantially reduce the response rate for the survey. Designer and construction oversight consultants were limited to receiving surveys asking about no more than two projects, and LPAs were limited to receiving surveys about no more than 3 projects. For designer and construction oversight consultants that were selected more than twice, two projects were selected to be included in the survey using random number selection. For LPAs, the same process was used to select three projects to be included.

Due to this selection system, the selection sets for LPAs, design consultants and construction oversight consultants are slightly different. The total number of surveys distributed was 370. Of these 370 surveys distributed:

- 130 were distributed to LPAs;
- 112 were distributed to design consultants;
- 128 were distributed to construction oversight consultants.

The breakdown of the selected projects among the various types of sponsors is given in Table 5. The majority of projects selected were sponsored by Counties and Cities, followed by Towns and finally Villages. The exact numbers for each were different, due to the differences in final tallies of the number of projects selected based on limiting the number of surveys sent to an individual.
Table 5. Final Breakdown of Selected Projects by Sponsor Type

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Projects Selected</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LPA</td>
<td>Design Consultants</td>
</tr>
<tr>
<td>County</td>
<td>62 (47.7%)</td>
<td>51 (45.5%)</td>
</tr>
<tr>
<td>City</td>
<td>44 (33.8%)</td>
<td>40 (35.7%)</td>
</tr>
<tr>
<td>Town</td>
<td>17 (13.1%)</td>
<td>14 (12.5%)</td>
</tr>
<tr>
<td>Village</td>
<td>7 (5.4%)</td>
<td>7 (6.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>112</td>
</tr>
</tbody>
</table>

The number of projects selected within each WisDOT Region were kept as equal as possible throughout the selection process. Since the number of projects completed each year were not equal among the various Regions, the final number of selected projects within each Region were not exactly equal, as shown in Table 6.

Table 6. Final Breakdown of Selected Projects by WisDOT Region

<table>
<thead>
<tr>
<th>WisDOT Region</th>
<th>Projects Selected</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LPA</td>
<td>Design Consultants</td>
</tr>
<tr>
<td>NCL</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>NEL</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td>NWL</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>SEL</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>SWL</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>130</td>
<td>112</td>
</tr>
</tbody>
</table>

The number of projects selected that have County sponsors are shown, broken down by County, in Appendix F. The number of selected projects per County was limited to no more than three for the LPA survey. It is possible to have more than three selected projects listed in the Design and Construction Oversight Consultant columns because they have different design/construction oversight consultants. This reflects the fact that different projects were removed from each of the lists of selected projects, based on which individuals were selected to receive multiple surveys.

Appendix F lists the number of selected projects by City in each of three project participant categories. The clear outlier here is the City of Milwaukee, with 5 projects selected for the Design Consultant survey and 6 for the Construction Oversight Consultant survey. This is a result of a large number of City of Milwaukee-sponsored projects being selected at random in the initial selection, many of which were executed by different design or construction oversight consultants. Therefore, when the number of
surveys to be sent to Milwaukee County was reduced, at random, to the maximum of three, the projects randomly selected for removal from the City of Milwaukee LPA list remained, for the most part, on the lists of design and construction oversight consultant selected projects.

The same concept applied to the breakdown of selected projects by Town sponsors given in Appendix F. Village sponsors were not affected by this process, and are presented in Appendix F.

On all three surveys (LPA, Design Consultants, and Construction Oversight Consultants), the first question was intended to gauge the overall satisfaction of each type of stakeholder with their MC project, and to identify any problem areas that require further attention and improvement. 48.3% of LPA respondents felt satisfied that their MC project did not need significant improvement, as did 42.9% of design consultants and 82.0% of construction oversight consultants surveyed.

The area that was most frequently suggested as an area needing improvement was related to the costs of the MC project, followed by the MC’s level of assistance, competence of the MC, and finally the respondent’s working relationship with the MC. Other areas listed by respondents included:

- Timeliness/responsiveness;
- Inconsistencies among different employees within an MC firm;
- Being more stringent than WisDOT;
- Being overly aggressive;
- Requiring too many design revisions, multiple reviews;
- Insignificant revisions required by MC;
- Lack of MC involvement in project scoping and real estate;
- Availability of MC contact person; and
- Unprofessional relationship.

Of these other areas, the area of timeliness/responsiveness was repeated most often, mostly by design consultant respondents, but also at least one LPA respondent. Inconsistencies were also cited by multiple designers and one construction oversight consultant. The responses that MCs were stricter, more stringent, or more aggressive than WisDOT may indicate that the MCs are enforcing regulations more forcefully than was the case under WisDOT management, or may be the result of the respondent working on LP projects with stricter requirements after having worked on state projects that do not have the Federal requirements inherent in an LP project. Requiring insignificant revisions was mentioned by numerous respondents, here and in the General Comments section. This response may also be related to those who cited internal MC inconsistencies in review and too many reviews. This is an issue that may need to be examined further, or its importance may lessen over time as MC and consultant personnel become more comfortable and experienced with completing LP reviews. PMs interviewed for this project did not feel these were significant issues. One PM replied that comments of this nature received by the designer upon return of their reviews from the MC may in fact have originated with WisDOT PMs, and that a professional document, which the PM needs to sign off on, should be of a professional quality not only in terms of content, but also in terms of presentation, grammar, etc.

Questions that address cost, compliance and consistency are detailed in the sections below, while full results from the survey are presented in Appendix E.
7.4.2. Cost

Questions that dealt with cost, schedule, and timeliness have been summarized in this section. This decision was based on the idea that delays moving the project forward will lead to increased costs. Schedule and timeliness questions are the best data in the survey for measuring project delays, and so these questions, as well as questions directly about costs, are summarized in this section of the report.

**How would you rate your costs for this project?**

This question (8b on the LPA survey) was asked only of LPA survey recipients, and offered response choices of “Much too low,” “Somewhat too low,” “About right,” “Somewhat too high,” and “Much too high.” For this question, “Much too low,” “Somewhat too low,” and “About right” were taken as positive responses, with “Somewhat too high,” and “Much too high” taken as negative responses. 38.3% responded positively (all these responded “About right”), and 53.3% responded negatively, with 13.3% responding “Much too high.”

**How would you rate the prices of design changes for this project?**

This question (8c on the LPA survey) was asked only of LPA survey recipients, and offered response choices of “Much too low,” “Somewhat too low,” “About right,” “Somewhat too high,” and “Much too high.” For this question, “Much too low,” “Somewhat too low,” and “About right” were taken as positive responses, with “Somewhat too high,” and “Much too high” taken as negative responses. 48.3% responded positively (all these responded “About right”), and 16.7% responded negatively, with 6.7% responding “Much too high” (35% gave no response or responded “N/A”).

**How would you rate the prices of construction change orders on this project?**

This question (8d on the LPA survey) was asked only of LPA survey recipients, and offered response choices of “Much too low,” “Somewhat too low,” “About right,” “Somewhat too high,” and “Much too high.” For this question, “Much too low,” “Somewhat too low,” and “About right” were taken as positive responses, with “Somewhat too high,” and “Much too high” taken as negative responses. 60.0% responded positively (all these responded “About right”), and 15.0% responded negatively, with 1.7% responding “Much too high” (25.0% gave no response or responded “N/A”).

**How would you rate dispute costs for this project?**

This question (8e on the LPA survey) was asked only of LPA survey recipients, and offered response choices of “Much too low,” “Somewhat too low,” “About right,” “Somewhat too high,” and “Much too high.” For this question, “Much too low,” “Somewhat too low,” and “About right” were taken as positive responses, with “Somewhat too high,” and “Much too high” taken as negative responses. 35.0% responded positively, and 8.3% responded negatively, with 5.0% responding “Much too high” (56.6% gave no response or responded “N/A”).

**How would you rate your level of time commitment dedicated to this project?**

This question (8h on the LPA survey, 7d on the Design consultant survey and 16b on the Construction Oversight consultant survey) was included here under the assumption that “time is money.” The higher the level of time commitment for each of the project participants, the higher the cost for the project is likely to be. The response choices offered were “Much too low,” “Somewhat too low,” “About right,” “Somewhat too high,” and “Much too high.” For this question, “Much too low,” “Somewhat too low,” and “About right” were taken as positive responses, with “Somewhat too high,” and “Much too high” taken as negative responses. For the LPA survey 66.7% responded positively, and 30% responded negatively. For the Design consultant survey 27.3% responded positively, and 70.2%
responded negatively. For the Construction Oversight consultant survey, 81.4% responded positively and 18.6% responded negatively.

Was your project delivered on time?

This question (12 on the LPA survey, 15 on the Design consultant survey, and 12 on the Construction Oversight survey) was a yes/no question. On the LPA survey 70% responded “Yes,” 10% responded “No,” and 13.3% responded “Not sure.” On the Design consultant survey 79.2% responded “Yes,” 18.2% responded “No,” and 2.6% responded “Not sure.” On the Construction Oversight consultant survey 79.1% responded “Yes,” 19.8% responded “No,” and 1.2% responded “Not sure.”

If your project was not delivered on time, how responsible was the MC for the failure to keep the project on schedule?

This question (13 on the LPA survey, 16 on the Design consultant survey, and 13 on the Construction Oversight consultant survey) offered the response choices “Not at all responsible,” “Not very responsible,” “Somewhat responsible,” “Very responsible,” and “Extremely responsible.”

Of the LPAs whose projects were not delivered on time, 50.0% gave no response, 11.1% responded “Not at all responsible,” 5.6% responded “Not very responsible,” 5.6% responded “Somewhat responsible,” 11.1% responded “Very responsible,” and 16.7% responded “Extremely responsible.” Of the Design consultants whose projects were not delivered on time, 6.3% gave no response, 18.8% responded “Not at all responsible,” 6.3% responded “Not very responsible,” 50.0% responded “Somewhat responsible,” 12.5% responded “Very responsible,” and 6.3% responded “Extremely responsible.” Of the Construction Oversight consultants whose projects were not delivered on time, 5.7% gave no response, 88.6% responded “Not at all responsible,” 0.0% responded “Not very responsible,” 0.0% responded “Somewhat responsible,” 0.0% responded “Very responsible,” and 0.0% responded “Extremely responsible.”

How timely was the MC in responding to your requests for decisions?

This question (6d on the LPA survey, 5d on the Design Consultant survey, and 4d on the Construction Oversight Survey) offered response choices of “Not at all,” “Not very,” “Somewhat,” “Very,” and “Extremely.” A response of “Somewhat” was taken as neutral, with “Not at all” and “Not very” as negative responses and “Very” and “Extremely” as positive responses. 20% of LPA respondents gave negative responses, with 5% responding “Not at all.” 31.7% gave neutral responses, and 45.0% gave positive responses. For Design consultants, the negative responses accounted for 28.6% of respondents, with 2.6% responding “Not at all.” 40.3% gave neutral responses, and 27.3% gave positive responses. For Construction consultants, 3.5% of respondents responded negatively, with 1.2% responding “Not at all.” 18.6% gave neutral responses, and 77.9% gave positive responses.

How timely were MC reviews on the project?

This question (11k on the LPA survey and 23c on the Design Consultant survey) offered response choices of “Not at all,” “Not very,” “Somewhat,” “Very,” and “Extremely.” A response of “Somewhat” was taken as neutral, with “Not at all” and “Not very” as negative responses and “Very” and “Extremely” as positive responses. 20% of LPA respondents gave negative responses, 30% gave neutral responses, and 41.7% gave positive responses. For Design consultants, the negative responses accounted for 36.4% of respondents, with 2.6% responding “Not at all.” 29.9% gave neutral responses, and 32.5% gave positive responses.

How quickly were construction change orders processed on this project?

This question (10 on the LPA survey and 17 on the Construction Oversight consultant survey) offered response choices of “Not at all quickly,” “Not very quickly,” “Somewhat quickly,” “Very quickly,” and “Extremely quickly.” “Somewhat quickly” was taken as a neutral response, “Very
quickly” and “Extremely quickly” were taken as positive responses, and “Not at all quickly,” and “Not very quickly” were taken as negative responses. For LPAs 3.3% of respondents gave negative responses, 60% neutral responses, and 21.7% gave positive responses (15.0% gave no response). For Construction Oversight consultants 15.2% gave negative responses, 41.9% gave neutral responses, and 40.7% gave positive responses.

How would you rate the amount of MC staff utilized on this project?
This question (8a on the LPA survey, 7a on the Design consultant survey, and 16a on the Construction Oversight consultant survey) offered response choices of “Much too low,” “Somewhat too low,” “About right,” “Somewhat too high,” and “Much too high.” For this question, “About right” was taken as a positive response, with all other responses being negative. LPA respondents responded positively 68.3% of the time, and negatively 20% of the time. 3.3% gave a rating of “Much too low” and 0% gave a rating of “Much too high” (11.7% gave no response or responded “N/A”). For Design consultants, 57.1% responded positively and 36.4% responded negatively. 2.6% responded “Much too low” and 6.5% responded “Much too high.” For Construction Oversight consultants, 89.5% responded positively, and 9.4% responded negatively, with “Much too low” and “Much too high” each receiving 1.2% of the responses.

How effective was the MC in monitoring and coordinating with involved parties to keep the project on schedule?
This question (14 on the Design consultant survey, 6 on the Construction Oversight survey) offered response options of “Not at all effective,” “Not very effective,” “Somewhat effective,” “Very effective,” and “Extremely effective.” “Not at all effective” and “Not very effective” were taken as negative responses, “Somewhat effective” was taken as a neutral response, and “Very effective” and “Extremely effective” were taken as positive responses. Design consultants responded 29.9% negatively, 46.8% neutrally, and 23.4% positively. Construction Oversight consultants responded 2.3% negatively, 18.6% neutrally, and 76.7% positively.

How timely was the evaluation by the MC of contract modifications when requested on this project?
This question (7 on the Construction Oversight consultant survey) offered response options of “Very slow,” “Slow,” “About as expected,” “Fast,” and “Very Fast.” “About as expected” was taken as a neutral response, “Very slow” and “Slow” were taken as negative responses, and “Fast” and “Very fast” were taken as positive responses. 9.3% responded negatively, 38.4% responded neutrally, and 50.0% responded positively.

How would you rate the amount of your interaction with MC personnel on this project?
93.0% responded “About right” to this question (16c on the Construction Oversight consultant survey). 6.9% responded low or much too low, and 1.2% responded too high.

How would you rate the amount of your interaction with WisDOT personnel on this project?
72.1% responded “About right” to this question (16d on the Construction Oversight consultant survey). 15.1% responded “Somewhat too low” and 2.3% responded “Much too low” (10.5% responded N/A).

7.4.2.1. Costs Summary
The results of the stakeholder survey gave mixed indicators regarding factors related to costs of the MC program. The majority of respondents viewed overall costs as too high, but design and construction change costs as appropriate. Of those LPAs who had disputes on their projects, the majority responded favorably regarding the costs of those disputes. Most Construction Oversight consultant and LPA respondents viewed their time commitment as appropriate, while fewer design consultants felt this way. Most Construction Oversight consultants and fewer Design consultants felt the MCs improved project
Most LP projects were delivered on time. Timeliness was rated very well by Construction Oversight consultants, about half positive by LPAs, and mostly negative by Design consultants. Most Construction Oversight consultants, and the majority of LPAs and Design consultants viewed the MC staff allocation as appropriate. Most Construction Oversight consultant respondents felt the amount of their interaction with MC personnel and WisDOT personnel was about right.

Two thirds of LPA respondents and over 80% of Construction Oversight consultants felt their time commitment was appropriate, while just over one quarter of Design consultants responded positively to this question.

The MCs’ impact on project schedule was seen as effective by 23.4% of Design consultant respondents and 76.7% of Construction Oversight consultant respondents. 30% of Design consultant respondents responded negatively, as did 2.3% of Construction Oversight consultants.

70% of LPA respondents and almost 80% of Design and Construction Oversight consultants responded that their project was delivered on time. 13.3% of LPA respondents were not sure. Of those whose projects were not delivered on time, more LPAs felt the MC was responsible than not, half of the Design consultants felt the MCs were somewhat responsible. Slightly more Design consultants felt the MC was not very or not at all responsible than felt the MC was very or extremely responsible. Almost 90% of Construction Oversight consultants responded that the MC was not at all responsible for a project not being delivered on time.

The timeliness of MC responses were measured by three questions. 45% of LPAs, 27.3% of Design consultants, and over 75% of Construction Oversight consultants felt that the MC was timely in responding to their requests. 20% of LPAs, 28.6% of Designers, and 3.5% of Construction Oversight consultants felt the MC was not, with most of the remaining respondents neutral. The timeliness of MC reviews (asked only of LPAs and Designers) scored similarly, with 41.7% of LPAs and 32.5% of Design consultants rating them positively, and 20% of LPAs and 36.4% of Design consultants responded negatively. LPAs and Construction Oversight consultants were asked about the speed of processing change orders. 3.3% of LPAs gave negative responses, 21.7% gave positive respondents, and 60.0% gave neutral responses, 15.2% of Construction Oversight consultants gave negative responses and 40.7% gave positive responses. The largest number of respondents answered these questions neutrally. Construction Oversight consultants also felt that contract modifications were evaluated in a timely fashion. 88.4% responded that MCs responded about as expected or better.

The amount of MC staff utilized on LP projects was generally viewed as appropriate by respondents. 68.3% of LPA respondents, 57.1% of Design consultants, and 89.5% of Construction Oversight consultants felt the amount of MC staff was appropriate.

93% of Construction Oversight consultant respondents felt the amount of their interaction with MC personnel was about right, and 72.1% felt the amount of their interaction with WisDOT personnel was about right.

**7.4.3. Compliance**

The questions addressing compliance dealt with MCs’ focus, satisfaction of LPAs and Designers, project performance, and issues with Environmental Documents and PS&Es.

*How satisfied were you with the balance between the MC’s focus on compliance with WisDOT/FHWA regulations and the MC’s assistance to you on this project?*

This question (4 on LPA survey, 3 on Design and Construction Oversight surveys) offered response choices of “Not at all,” “Not very,” “Somewhat,” “Very,” and “Extremely.” A response of “Somewhat” was taken as neutral, with “Not at all” and “Not very” as negative responses and “Very” and “Extremely” as positive responses. For LPAs, 25% of responses were negative and 43.3%
positive, for Design consultants 15.6% of the responses were negative, and 32.5% positive, and for Construction Oversight consultants, 3.5% of the responses were negative, and 80.2% positive.

How would you rate the level of focus on compliance with WisDOT and FHWA regulations for this project?

This question (8f on the LPA survey, 7b on the Design consultant survey, and 16e on the Construction Oversight consultant survey) offered response choices of “Much too low,” “Somewhat too low,” “About right,” “Somewhat too high,” and “Much too high.” For this question, “About right” was taken as a positive response, with all other responses being negative. For the LPA respondents, 55% responded positively, and 38.3% responded negatively, with 18.3% responding “Somewhat too high” and 18.3% responding “Much too high.” For Design consultant respondents, 58.4% responded positively, and 39.0% responded negatively, with the overwhelming majority of those responses being “Somewhat too high” (26.0%) and “Much too high” (11.7%). For Construction Oversight consultants, 93.0% responded positively, and 4.7% replied “Somewhat too high” or “Much too high.”

How satisfied were you with the compliance with laws and regulations on the project?

This question (11e on the LPA survey and 23a on the Design consultant survey) offered response choices of “Not at all,” “Not very,” “Somewhat,” “Very,” and “Extremely.” “Somewhat” was taken as a neutral response, “Not at all” and “Not very” were taken as negative responses, and “Very” and “Extremely” were taken as positive responses. For LPAs 8.3% of responses were negative, 26.7% were neutral, and 60.0% were positive. For Design consultants, 2.6% of responses were negative, 42.9% were neutral, and 52.0% were positive.

How well did your project meet WisDOT and Federal requirements?

This question (11d on the LPA survey, and 11 on the Construction Oversight consultant survey. These two questions had slightly different wording – see Appendix D for exact wording) offered response choices of “Not at all,” “Not very,” “Somewhat,” “Very,” and “Extremely.” “Somewhat” was taken as a neutral response, “Not at all” and “Not very” were taken as negative responses, and “Very” and “Extremely” were taken as positive responses. For LPAs 3.3% of responses were negative, 15% were neutral, and 76.7% were positive. For Construction Oversight consultants, 0.0% of responses were negative, 5.8% were neutral, and 94.2% were positive.

Did MC involvement improve compliance with WisDOT, State, and Federal standards and regulations?

This question (14 on the LPA survey, 17 on the Design consultant survey, and 14 on the Construction Oversight consultant survey) was a Yes/No question. For the LPA respondents, 38.3% responded “Yes,” 10.0% responded “No,” and 46.7% responded “Not sure.” For Design consultants, 45.5% responded “Yes,” 23.4% responded “No,” and 31.2% responded “Not sure.” For Construction Oversight consultants, 68.6% responded “Yes,” 5.8% responded “No,” and 23.3% responded “Not sure.”

Were federal compliance issues detected on the MC project?

This question was asked only of LPAs (question 15 on the LPA survey) and was a Yes/No question. 76.7% of respondents answered “No,” 13.3% answered “Yes,” and 10.0% gave no response.

If yes, please indicate how many issues were detected (Question 16 on the LPA survey)
87.6% of respondents who detected issues responded “A few,” and 12.4% responded “Some.”

If yes, please indicate the level of severity of these issues (Question 17 on the LPA survey)
50.0% of respondents who detected issues responded “Not at all severe,” 37.5% responded “Somewhat severe,” and 12.4% responded “Very severe.”
Was the Environmental Document returned from WisDOT or FHWA for revisions or rework?

This question (question 19 on the LPA survey and 18 on the Design consultant survey) was a Yes/No question. On the LPA survey, 63.3% responded “Not sure,” 26.7% responded “No,” and 6.7% responded “Yes.” On the Design consultant survey, 64.9% responded “No,” and 32.5% responded “Yes.”

Question 19 on the Design consultant survey followed up to ask those who responded “Yes” on the previous question how many issues were detected. 51.9% responded “A few,” 22.2% responded “Some,” and 22.2% responded “Quite a few.”

Question 20 on the Design consultant survey followed up to ask those who responded “Yes” on question 18 to characterize the level of severity of these issues. 74.1% responded “Not at all severe,” 18.5% responded “A little severe,” and 3.7% responded “Somewhat severe.”

How much assistance was provided by MC involvement in the Environmental Document process?

This question (20h on the LPA survey, and 22a on the Design consultant survey) offered response choices of “None,” “A little,” “Some,” “Quite a bit,” and “A great deal.” “None” and “A little” were taken as a negative response, “Some” was taken as a neutral response, and “Quite a bit,” and “A great deal” were taken as positive responses. 13.4% of LPA respondents responded negatively, 33.3% responded neutrally, and 26.6% responded positively (26.7% offered no response or responded N/A). On the Design consultant survey, 32.5% responded negatively, 44.2% responded neutrally, and 19.5% responded positively (3.9% responded N/A).

How much assistance was provided by MC involvement in the Environmental Document final product?

This question (20i on the LPA survey, and 22b on the Design consultant survey) offered response choices of “None,” “A little,” “Some,” “Quite a bit,” and “A great deal.” “None” and “A little” were taken as a negative response, “Some” was taken as a neutral response, and “Quite a bit,” and “A great deal” were taken as positive responses. 11.7% of LPA respondents responded negatively, 33.3% responded neutrally, and 26.7% responded positively (28.4% offered no response or responded N/A). On the Design consultant survey, 42.9% responded negatively, 36.4% responded neutrally, and 15.6% responded positively (5.2% responded N/A).

Was the PS&E package returned from WisDOT or FHWA for revisions?

This (Question 25 on the Design consultant survey) was a Yes/No question for Design consultants. 32.5% responded “Yes” and 67.5% responded “No.” Two follow-up questions (26 and 27 on the Design consultant survey) asked those who responded “Yes” to indicate the number of issues and the severity of issues detected. 72.0% responded “A few” issues, 24.0% responded “Some,” and 4.0% responded “Quite a few.” In terms of severity of the issues, 88.0% responded “Not at all severe,” 8.0% responded “A little severe,” and 4.0% responded “Somewhat severe.”

7.4.3.1. Compliance Summary

The level of focus on compliance by the MCs was rated positively by about half of LPA respondents, around 60% of Design consultants, and over 90% of Construction Oversight consultants. Over half of LPAs and Design consultants were satisfied with the compliance of their projects, and large numbers gave neutral responses. Three fourths of LPAs and nearly 95% of Construction Oversight consultants reported that their projects met requirements very or extremely well. Just under half of LPAs and Design consultants and just under three fourths of Construction Oversight consultants felt MC involvement improved compliance. A significant number of respondents were not sure.

Three fourths of respondents had no federal compliance issues detected on their projects, nearly 90% of these projects were classified as having “A few” issues, and half of these issues were described as “Not at all severe,” while 12.4% were described as “Very severe.”
Most LPA respondents were not sure whether their Environmental Documents were returned from WisDOT or FHWA for revisions. Approximately one third of Design consultants said that their Environmental Documents were returned. Of these, half responded that the documents’ had “A few” issues, and approximately one fourth responded “Some” and another fourth responded “Quite a few.” Three quarters of these respondents classified their issues as “Not at all severe,” and under 4% responded “Somewhat severe.”

Approximately one fourth of LPA and Design consultant respondents viewed the MC assistance with the Environmental Document process positively. 13.4% of LPAs and one-third of Design consultants responded negatively. One fourth of LPAs answered N/A. LPA responses about the MC assistance with the Environmental Document final product were essentially the same, while Design consultants’ were slightly more negative.

One third of Design consultants reported that their PS&E package was returned for revisions. Of these, about three fourths reported “A few” issues, one fourth reported “Some,” and 4% reported quite a few. Nearly 90% of these issues were reported as “not at all severe,” and 4% were reported as “Somewhat severe.”

It appears from these results that projects are meeting WisDOT and Federal requirements, and most LPAs and Construction Oversight consultants are satisfied with this performance. There is less agreement on whether MC involvement has led to this satisfactory performance. Significant portions of all three sets of survey respondents answered that they did not know whether this was the case.

### 7.4.4. Consistency

Consistency was addressed in two ways. First, for each of the three portions of the survey (LPA, Design consultants, Construction Oversight consultants), the data was analyzed by taking the highest value arrived at by adding any two neighboring responses together. Since the survey was distributed to recipients throughout all five Regions, chosen at random from the list of LP projects, this was taken as a representative sampling across the different Regions. The second portion of the analysis was done by breaking down responses to selected questions by Region, and comparing the distributions.

In the first method of analysis, the highest value arrived at by adding any two neighboring responses together was computed for each question, and these sums were broken up into three categories: High (a total of 75% - 100% between the two responses), Medium (50% - 75%), and Low (<50%). Tables in Appendix G categorize the questions from each of the three surveys according to this system for estimating consistency.

The responses to the direct cost question to LPAs (8b) fell into the highest category of consistency. Nearly 80% of respondents answered this question with “About right” or “Somewhat too high.” Other cost related questions that appeared in the highest category of consistency within all three survey groups included various measures of levels of interaction, and timeliness of MC responses. A number of compliance-related questions were answered consistently within the various survey groups. In addition, a number of more general, competence-related questions were consistent within all three groups. For example, responses evaluating communication with MCs were consistent within the three surveys.

Most of the Low Consistency questions involved questions about specific MC duties. As established from the PM interviews, MCs are not tasked with exactly the same duties from Region to Region, which most likely leads to inconsistencies in these areas. Supporting this hypothesis is the fact that nearly all of the Low Consistency questions, particularly for LPA responses, had a significant amount of respondents who gave no answer, or answered N/A.

In the second portion of the analysis, selected questions from the survey were broken down by Region to more specifically compare the variation of responses among Regions. The questions selected for inclusion in this analysis were intended to provide some insight into consistency of cost and compliance
across the Regions. Due to the variation of the number of projects in each Region, the random method for choosing projects for inclusion in the survey, as well as varying response rates, the sample size varied across Regions, and also varied within a Region across the three survey groups.

The first question analyzed in this manner was Question 1 (Based on your overall experience with the Management Consultant (MC) on the project described in the enclosed letter, please check all areas where you feel improvements could/should be made), for each of the three survey groups (Figures 4 – 6). From these figures, we can hypothesize that the performance of the MC program shows consistency across the five WisDOT Regions, especially for the Design and Construction Oversight consultants. Another interesting hypothesis that could be formed by looking at Figure 4 relates to the LPA responses. It appears that LPAs in the SE Region and NE Region were more satisfied overall than those in the other three Regions. SE Region has used MCs for a significant period of time before other Regions adopted the program. This may explain the higher satisfaction in the SE Region, but NE also appears to be more satisfied with the program than the other Regions.

![Figure 4. Consistency of LPA Survey Responses to Question 1](image-url)
The next question analyzed across Regions was Question 6d for LPAs and 4d for Construction Oversight consultants (how timely was the MC in responding to your requests for decisions?). The distributions in Figures 7 and 8 look generally similar, with the Construction Oversight consultants responding slightly more positively than the LPA respondents. Interestingly, NW Region appears to have a lower timeliness
rating than the other Regions from LPAs, but a much better rating than the other Regions from Construction Oversight consultants.

Figure 7. Consistency of LPA Survey Responses to Question 6d

Figure 8. Consistency of Construction Oversight Consultants Survey Responses to Question 4d

The third question analyzed across Regions was Question 8b for LPAs (*On this project involving MC oversight, how would you rate your costs for this project?*). Responses to this question were grouped together tightly as seen in Figure 9. The NW Region had the lowest number of “About right” responses and the highest number of “Much too high” responses.
The next question analyzed across Regions was Question 11c for LPAs and 5k for Design consultants (How well did the MC’s services reflect their knowledge of WisDOT policies, procedures, and requirements?). LPA responses (Figure 10) were consistent across Regions, with the exception of SE Region, which had an unusually high level of “Very Well” responses. This result might be expected, due to the fact that SE Region has used MCs longer than the other Regions, giving their MCs greater experience and their LPAs greater comfort with the program than other Regions. The Design consultant responses (Figure 11) were also consistent across Regions, but did not exhibit the higher ratings for the SE Region. Instead, NW and NE Regions rated slightly lower than the NC and SW Regions, with SE falling in between them.
The next questions analyzed across Regions were Question 20h for the LPAs (*How much assistance was provided by MC involvement in the Environmental Document process?*) and Question 20i for LPAs, corresponding to Question 22b for Design consultants (*How much assistance was provided by MC involvement in the Environmental Document final product*?). The distribution of the ratings of the level of MC assistance in the environmental document process did not appear as consistent as some of the other
questions evaluated for consistency (Figure 12). There appears to be some inconsistency in the environmental document process, in the view of LPA respondents.

![Figure 12. Consistency of LPA Survey Responses to Question 20h](image1)

Figure 12. Consistency of LPA Survey Responses to Question 20h

Figure 13 shows almost an identical pattern to Figure 12 for ratings of the level of assistance provided by MCs in the final environmental document, meaning those same inconsistencies evident in Figure 12 were perceived by LPA respondents to this question. The pattern of responses from Design consultants in Figure 14 is not as inconsistent as those of the LPA respondents in the two previous questions, but continues to indicate inconsistencies among the Regions in the level of assistance provided by MCs on the environmental documents.

![Figure 13. Consistency of LPA Survey Responses to Question 20i](image2)

Figure 13. Consistency of LPA Survey Responses to Question 20i
Figure 14. Consistency of Design Consultant Survey Responses to Question 22b

Question 22a (How much useful assistance was provided by MC involvement on this project in reviewing environmental documents?) was a more specific question for Design consultants about the environmental document review process. Figure 15 shows a more consistent pattern of ratings than in Figures 12 - 14, but there are definitely inconsistencies apparent in the perceptions of Design consultants in regard to this question, as well.

Figure 15. Consistency of Design Consultant Survey Responses to Question 22a

Question 3 for both Design and Construction Oversight consultants (How satisfied were you with the balance between the MC’s focus on compliance with WisDOT/FHWA regulations and the MC’s assistance to you on this project?) was also analyzed across Regions. Figures 16 and 17 both show
consistent patterns of ratings, with a “Very satisfied” outlier (NE Region) in the Design consultant survey and an “Extremely satisfied” outlier (NW Region) in the Construction Oversight consultant survey.

Figure 16. Consistency of Design Consultant Survey Responses to Question 3

Figure 17. Consistency of Construction Oversight Consultant Survey Responses to Question 3

The question of timeliness was addressed by Question 5d for Design consultants (In your opinion, how timely was the MC in responding to your requests for decisions?). Figure 18 shows a consistent pattern across Regions in responses to this question, indicating that MCs are consistent in the timeliness of their responses across the five Regions.
Finally, responses to Question 24 for Design consultants (How useful were the reviews received from the MC during this project?) gathered consistently around the neutral “Somewhat useful” response (Figure 19).

Survey respondents showed consistency in their pattern of answers to the question asking for areas of the MC program that required improvement. Costs of the MC program was the number one issue cited by LPAs, followed by level of assistance. Design consultants were relatively split among the various aspects of the program that needed improvement, with the across-Region variation for a given response being low, while Construction Oversight consultants were consistently content with the MC program as it is. The ratings for the timeliness of response of MCs was generally consistent within LPA and Construction
Oversight consultant groups. Responses from LPAs to the question of rating their costs were consistent. For the most part, MC competence was rated consistently, with the exception being that LPAs in the SE Region gave their MCs a higher rating than other Regions, which may have to do with the longer period of time MCs have been in place in the SE Region, and a greater level of comfort with the program among the LPAs in the Region. The results of this analysis show a higher level of inconsistency among LPA and Design consultant respondents in regard to the Environmental Document process and final product, which is consistent with the individual responses discussed in Section 7.4.3, where many respondents had answered “Not sure” to a number of compliance-related questions. The respondents’ views on the MCs’ focus on compliance, the timeliness of MC responses, and the usefulness of MC reviews all demonstrated consistency in their responses.

Inconsistencies were cited by multiple designers and one construction oversight consultant in their comments on the stakeholder survey. The responses that MCs were stricter, more stringent, or more aggressive than WisDOT may indicate that the MCs are enforcing regulations more forcefully than was the case under WisDOT management, or may be the result of the respondent working on LP projects with stricter requirements after having worked on state projects that do not have the Federal requirements inherent in an LP project. While individual experiences are difficult to gauge from an open-ended request for comments, it appears from the survey results that inconsistencies do exist across the five WisDOT Regions, but that these inconsistencies are not large enough to strongly affect stakeholder participants on a large scale.

7.5. Cost Analysis

Analyses comparing costs from project to project or from year to year within an organization are notoriously difficult. Each project is unique, in a different location, with different site conditions, different project participants and different constraints. Cost data from the pre-MC era are difficult to compare with current costs. It is difficult to locate sets of comparable projects with complete cost data for comparison. While there is the classic problem that each project is subject to differing site conditions and other factors, there is also the problem that the MC program appears to be delivering a different product from the past years. The MC program was implemented to improve compliance with FHWA requirements. A change was deemed necessary by FHWA to bring WisDOT’s LP into compliance so that it could continue to receive Federal funds. As it appears from the stakeholder survey, FHWA interviews, WisDOT personnel interviews, and PM interviews, compliance has improved through the implementation of the MC program. Thus, there is a difficulty in comparing costs for a pre-MC program that was poorer in compliance to the current MC program with better compliance. These difficulties make it nearly impossible to directly compare, for example, costs of projects before MC implementation with projects managed by MCs, or LP projects managed by MCs with State program projects managed by WisDOT.

Due to many of the difficulties discussed in Section 6 for comparing costs of contractors with in-house performance, the decision was made to study the quantity of FTEs provided to WisDOT through the MC program, and compare that with the number of FTEs that would be required to replace the services of the MCs. The approach taken was to compare the level of resources necessary to maintain an in-compliance Local Program with the resources provided by the current MC program. This approach was also chosen in an attempt to minimize the difficulties encountered when attempting to compare costs compiled by public and private entities, including those in estimating different indirect cost rates.

Trends in LP costs were identified, and a staffing level approach was taken to do cost analysis. LP cost and effort data from 2002 through 2011, provided by WisDOT’s Financial Management Section, allowed for the calculation of the full-time equivalent (FTE) positions dedicated to the LP. This number of FTEs is tied directly to the cost of the program. From there, two main thrusts were pursued. First, the number of FTEs dedicated to the LP each year was compared to FHWA recommendations on the number of FTEs necessary to adequately run a local program. Second, cost effectiveness of the MC program was analyzed
by calculating and comparing the amount of LP dollars managed per FTE both before and after the statewide implementation of the MC program.

7.5.1. LP Cost Data Trends

Table 7a presents WisDOT’s total expenditures on the LP (Column 2), WisDOT’s total in-house expenditures on delivery of the LP (Column 3), WisDOT’s total expenditures on consultants, including MCs, to deliver the LP (Column 4), WisDOT’s expenditures for MCs working on the LP (Column 5), and WisDOT’s expenditures on MCs in proratable and non-participating programs (Column 6). This allows Columns 7 – 13 in Table 7b to be calculated.

Table 7a. Cost Analysis Summary - WisDOT Data Values

<table>
<thead>
<tr>
<th>Year</th>
<th>Total $ for Local Highway Programs</th>
<th>Total $ for In-House Delivery for LP*</th>
<th>Total $ for Consultant Delivery for LP Including MCs</th>
<th>$ for MCs in LP</th>
<th>MC Expenditures in Proratable and Non-Participating Programs (303)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>$180,880,283</td>
<td>$3,967,894</td>
<td>$25,656,034</td>
<td>$398,909</td>
<td>$622,094</td>
</tr>
<tr>
<td>2003</td>
<td>$170,443,132</td>
<td>$3,880,158</td>
<td>$25,504,328</td>
<td>$533,071</td>
<td>$521,256</td>
</tr>
<tr>
<td>2004</td>
<td>$171,554,593</td>
<td>$3,937,079</td>
<td>$22,844,099</td>
<td>$646,474</td>
<td>$568,231</td>
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<tr>
<td>2006</td>
<td>$178,418,238</td>
<td>$2,320,917</td>
<td>$25,895,190</td>
<td>$1,024,950</td>
<td>$712,705</td>
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<tr>
<td>2007</td>
<td>$200,750,275</td>
<td>$1,956,310</td>
<td>$24,055,687</td>
<td>$2,091,539</td>
<td>$2,161,602</td>
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<tr>
<td>2008</td>
<td>$170,955,021</td>
<td>$1,552,670</td>
<td>$22,427,396</td>
<td>$3,323,806</td>
<td>$2,593,209</td>
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<tr>
<td>2009</td>
<td>$184,905,750</td>
<td>$1,167,290</td>
<td>$21,349,444</td>
<td>$3,536,014</td>
<td>$2,921,549</td>
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<tr>
<td>2010</td>
<td>$252,496,109</td>
<td>$1,361,539</td>
<td>$30,989,330</td>
<td>$6,002,272</td>
<td>$4,037,876</td>
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<tr>
<td>2011</td>
<td>$255,202,848</td>
<td>$1,486,640</td>
<td>$38,345,779</td>
<td>$6,287,598</td>
<td>$3,144,780</td>
</tr>
</tbody>
</table>

*(Does not include proratable allocation)

Column 7 gives the total WisDOT expenditures on MCs (sum of columns 5 and 6). Column 8 calculates the value of the LP construction award program, which is the total amount of money available from the Federal government for constructing projects in the LP in Wisconsin (not including delivery costs), and is calculated by subtracting Columns 3 and 4 from Column 2. Column 9 calculates the total in-house expenditures for WisDOT as a percentage of the total LP Expenditures. Column 10 calculates the total expenditures for consultants including MCs as a percentage of the total LP expenditures and Column 11 calculates the MC expenditures as a percentage of the total expenditures for the LP. Column 12 calculates the total expenditures for MCs as a percentage of the total cost for consultants, and Column 11 calculates the total management expenditures (consultant expenditures plus in-house expenditures) as a percentage of the total LP expenditures. The dashed line below the row for 2005 in tables throughout this section represents the changeover to statewide implementation of the MC program. Prior to 2005, only two Regions (Districts) were using MCs to manage the LP.

Total in-house WisDOT expenditures for delivery of the LP as a percentage of total LP expenditures (Col. 9) have clearly declined since implementation of the MC program, as would be expected, since WisDOT is delegating much of the day-to-day management of LP projects to MCs.

The trend for WisDOT expenditures on MCs as a percentage of the total LP expenditures (Col. 11) has been upwards, with the last two years (2010 and 2011) nearing 4%. A similar trend can be seen in WisDOT’s expenditures on MCs as a percentage of the total LP expenditures for consultant delivery
(Col.12), reaching over 30% in 2010. From this table it is apparent that the portion of LP expenditures going to MCs and the portion of consultant costs going to MCs have risen since statewide implementation of the program.

Table 7b. Cost Analysis Summary - Calculated Data Values

<table>
<thead>
<tr>
<th>Total Expenditures on MCs</th>
<th>LP Construction Award Program $</th>
<th>Total $ for In-House Delivery for LP as % of Total $ for LP</th>
<th>Total $ for Consultant Delivery for LP including MCs as % of Total $ for LP</th>
<th>Total $ for MCs in LP as % of Total $ for LP</th>
<th>Total $ for Consultant Delivery in LP as % of Total LP Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>(7)</td>
<td>(8)</td>
<td>(9) = (5) ÷ (6)</td>
<td>(10) = (2) – (3) – (4)</td>
<td>(11) = (3) ÷ (2)</td>
<td>(12) = (7) ÷ (2)</td>
</tr>
<tr>
<td>$1,021,002</td>
<td>$151,256,355</td>
<td>2.19%</td>
<td>14.18%</td>
<td>0.56%</td>
<td>9.80%</td>
</tr>
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<td>$1,054,327</td>
<td>$141,058,646</td>
<td>2.28%</td>
<td>14.96%</td>
<td>0.62%</td>
<td>4.13%</td>
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<td>$1,214,704</td>
<td>$144,773,415</td>
<td>2.29%</td>
<td>13.32%</td>
<td>0.71%</td>
<td>5.32%</td>
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<td>$1,385,390</td>
<td>$148,887,723</td>
<td>2.09%</td>
<td>12.10%</td>
<td>0.80%</td>
<td>6.60%</td>
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<td>$1,737,654</td>
<td>$150,202,131</td>
<td>1.30%</td>
<td>14.51%</td>
<td>0.97%</td>
<td>6.71%</td>
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<td>$4,253,140</td>
<td>$174,738,278</td>
<td>0.97%</td>
<td>11.98%</td>
<td>2.12%</td>
<td>17.68%</td>
</tr>
<tr>
<td>$5,917,014</td>
<td>$146,974,955</td>
<td>0.91%</td>
<td>13.12%</td>
<td>3.46%</td>
<td>26.38%</td>
</tr>
<tr>
<td>$6,457,562</td>
<td>$162,389,016</td>
<td>0.63%</td>
<td>11.55%</td>
<td>3.49%</td>
<td>30.25%</td>
</tr>
<tr>
<td>$10,040,147</td>
<td>$220,145,240</td>
<td>0.54%</td>
<td>12.27%</td>
<td>3.98%</td>
<td>32.40%</td>
</tr>
<tr>
<td>$9,432,377</td>
<td>$215,370,429</td>
<td>0.58%</td>
<td>15.03%</td>
<td>3.70%</td>
<td>24.60%</td>
</tr>
</tbody>
</table>

The total consultant delivery costs as a percentage of WisDOT’s total LP expenditures (Col. 10) has risen and fallen throughout the six years of the statewide implementation of the MC program. The average value for the four years of data prior to statewide implementation of the MC program is 13.6%, while the average value for the six years since is 13.1%. While not conclusive, it appears from these data that the total consultant delivery costs have not changed significantly as a percentage of WisDOT’s total LP expenditures since statewide implementation of the MC program. The same pattern holds for the total management costs as a percentage of total LP expenditures (Col. 13). The average value before statewide MC implementation was 15.9% and after statewide implementation it was 13.9%.

7.5.2. Staffing Levels

In their 2004 review of the Local Program, FHWA laid out their estimates of the minimum number of total FTE positions necessary for effective LP oversight, based on the size of the LP construction program (6). These estimates are presented in Table 8.

Table 9 gives the LP yearly construction program expenditures from 2002 – 2011, calculated from data provided by WisDOT staff (See Column 8 of Table 7b). Although the two most recent years have increased substantially, this has been influenced by the influx of ARRA funds, a trend that is not anticipated to continue. With this information from Table 9, it is possible to enter Table 8 to arrive at the number of FTEs recommended by FHWA for a LP of WisDOT’s size. These recommendations, highlighted in Table 8, range from 45 to 48 FTEs dedicated to the LP for the years 2002 - 2011. Table 9 also lists the number of FTEs recommended by FHWA by year.
Table 8. FTE Oversight Guidelines Based on Program Size

<table>
<thead>
<tr>
<th>Recommended STA FTEs</th>
<th>Construction Award Program</th>
<th>Recommended Dollars of Construction Program per FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>= (2) ÷ (1)</td>
</tr>
<tr>
<td>43</td>
<td>$100,000,000</td>
<td>$2,325,581</td>
</tr>
<tr>
<td>45</td>
<td>$150,000,000</td>
<td>$3,333,333</td>
</tr>
<tr>
<td>46</td>
<td>$200,000,000</td>
<td>$4,347,826</td>
</tr>
<tr>
<td>48</td>
<td>$250,000,000</td>
<td>$5,208,333</td>
</tr>
<tr>
<td>49</td>
<td>$300,000,000</td>
<td>$6,122,448</td>
</tr>
<tr>
<td>51</td>
<td>$350,000,000</td>
<td>$6,862,745</td>
</tr>
<tr>
<td>52</td>
<td>$400,000,000</td>
<td>$7,692,307</td>
</tr>
<tr>
<td>54</td>
<td>$450,000,000</td>
<td>$8,333,333</td>
</tr>
<tr>
<td>55</td>
<td>$500,000,000</td>
<td>$9,090,909</td>
</tr>
<tr>
<td>57</td>
<td>$550,000,000</td>
<td>$9,649,122</td>
</tr>
<tr>
<td>58</td>
<td>$600,000,000</td>
<td>$10,344,827</td>
</tr>
<tr>
<td>60</td>
<td>$650,000,000</td>
<td>$10,833,333</td>
</tr>
<tr>
<td>61</td>
<td>$700,000,000</td>
<td>$11,475,409</td>
</tr>
<tr>
<td>63</td>
<td>$750,000,000</td>
<td>$11,904,761</td>
</tr>
<tr>
<td>64</td>
<td>$800,000,000</td>
<td>$12,500,000</td>
</tr>
<tr>
<td>66</td>
<td>$850,000,000</td>
<td>$12,878,787</td>
</tr>
<tr>
<td>67</td>
<td>$900,000,000</td>
<td>$13,432,835</td>
</tr>
<tr>
<td>69</td>
<td>$950,000,000</td>
<td>$13,768,115</td>
</tr>
<tr>
<td>70</td>
<td>$1,000,000,000</td>
<td>$14,285,714</td>
</tr>
</tbody>
</table>

Table 9. WisDOT LP Construction Program Awards by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>LP Construction Program Awards</th>
<th>FHWA Recommended FTEs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>2002</td>
<td>$151,256,355</td>
<td>46</td>
</tr>
<tr>
<td>2003</td>
<td>$141,058,647</td>
<td>45</td>
</tr>
<tr>
<td>2004</td>
<td>$144,773,415</td>
<td>45</td>
</tr>
<tr>
<td>2005</td>
<td>$148,887,724</td>
<td>45</td>
</tr>
<tr>
<td>2006</td>
<td>$150,202,131</td>
<td>46</td>
</tr>
<tr>
<td>2007</td>
<td>$174,738,277</td>
<td>46</td>
</tr>
<tr>
<td>2008</td>
<td>$146,974,955</td>
<td>45</td>
</tr>
<tr>
<td>2009</td>
<td>$162,389,015</td>
<td>46</td>
</tr>
<tr>
<td>2010</td>
<td>$220,145,240</td>
<td>48</td>
</tr>
<tr>
<td>2011</td>
<td>$215,370,428</td>
<td>48</td>
</tr>
</tbody>
</table>

Table 10 presents data provided by WisDOT Financial Management Section, listing the estimated hours spent on the LP, in columns broken down into: (2) in-house; (3) consultants including MCs; (4) MCs; and (5) proratable and non-participating MC hours.
Table 10. Estimated LP Hours per Fiscal Year

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>In-House Delivery Hours for Local Highway Programs*</th>
<th>Estimated Consultant Delivery Hours for LP Including MCs</th>
<th>Estimated MC Hours in Local Highway Programs</th>
<th>MC Hours in Proratable and Non-Participating Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>77,892</td>
<td>405,980</td>
<td>6,312</td>
<td>9,844</td>
</tr>
<tr>
<td>2003</td>
<td>70,157</td>
<td>383,654</td>
<td>8,019</td>
<td>7,841</td>
</tr>
<tr>
<td>2004</td>
<td>67,240</td>
<td>345,826</td>
<td>9,787</td>
<td>8,602</td>
</tr>
<tr>
<td>2005</td>
<td>64,354</td>
<td>291,745</td>
<td>9,162</td>
<td>10,089</td>
</tr>
<tr>
<td>2006</td>
<td>46,788</td>
<td>368,293</td>
<td>14,577</td>
<td>10,136</td>
</tr>
<tr>
<td>2007</td>
<td>27,245</td>
<td>315,924</td>
<td>27,468</td>
<td>28,388</td>
</tr>
<tr>
<td>2008</td>
<td>14,390</td>
<td>282,170</td>
<td>41,818</td>
<td>32,626</td>
</tr>
<tr>
<td>2009</td>
<td>11,410</td>
<td>259,279</td>
<td>42,943</td>
<td>35,481</td>
</tr>
<tr>
<td>2010</td>
<td>21,150</td>
<td>380,235</td>
<td>73,635</td>
<td>49,544</td>
</tr>
<tr>
<td>2011</td>
<td>21,555</td>
<td>462,973</td>
<td>75,914</td>
<td>37,969</td>
</tr>
</tbody>
</table>

* Does not include proratable allocation

Table 11 shows the calculation of FTEs provided by WisDOT’s LP. FTEs were calculated based on a figure of productive hours per FTE per year of 1759 hours, based on discussions with WisDOT Financial Management section. Adding the MC-provided FTEs to the WisDOT-provided oversight FTEs and the FTEs based on 303 (proratable and non-participating) hours gives the total FTEs that were part of the LP program each year (Col. 6).

Table 11. FTE Calculations

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>FTEs based on in-house hours</th>
<th>FTEs based on Consultant hours (including MC)*</th>
<th>FTEs based on MC hours</th>
<th>FTEs based on MC 303 hours</th>
<th>Total FTEs provided to LP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>44.3</td>
<td>230.8</td>
<td>3.6</td>
<td>5.6</td>
<td>53.5</td>
</tr>
<tr>
<td>2003</td>
<td>39.9</td>
<td>218.1</td>
<td>4.6</td>
<td>4.5</td>
<td>48.9</td>
</tr>
<tr>
<td>2004</td>
<td>38.2</td>
<td>196.6</td>
<td>5.6</td>
<td>4.9</td>
<td>48.7</td>
</tr>
<tr>
<td>2005</td>
<td>36.6</td>
<td>165.9</td>
<td>5.2</td>
<td>5.7</td>
<td>47.5</td>
</tr>
<tr>
<td>2006</td>
<td>26.6</td>
<td>209.4</td>
<td>8.3</td>
<td>5.8</td>
<td>40.7</td>
</tr>
<tr>
<td>2007</td>
<td>15.5</td>
<td>179.6</td>
<td>15.6</td>
<td>16.1</td>
<td>47.2</td>
</tr>
<tr>
<td>2008</td>
<td>8.2</td>
<td>160.4</td>
<td>23.8</td>
<td>18.6</td>
<td>50.5</td>
</tr>
<tr>
<td>2009</td>
<td>6.5</td>
<td>147.4</td>
<td>24.4</td>
<td>20.2</td>
<td>51.1</td>
</tr>
<tr>
<td>2010</td>
<td>12.0</td>
<td>216.2</td>
<td>41.9</td>
<td>28.2</td>
<td>82.1</td>
</tr>
<tr>
<td>2011</td>
<td>12.3</td>
<td>263.2</td>
<td>43.2</td>
<td>21.6</td>
<td>77.0</td>
</tr>
</tbody>
</table>

*Does not include proratable allocation

**FTE calculated based on figure of productive hours per FTE per year of 1759 hours

Table 12 compares the number of FTEs provided by WisDOT’s LP to the number of FTEs recommended by FHWA for running a LP the size of WisDOT’s. In the years prior to statewide implementation of MCs (2005 and earlier), the differential between the total number of FTEs provided by the WisDOT LP and the number recommended by FHWA was consistently positive: that is, WisDOT’s LP was providing more FTEs than FHWA recommended. Figure 20 presents a plot of the WisDOT yearly LP construction program (right-hand vertical scale) along with the differential between the number of FTEs provided by WisDOT and the number recommended by FHWA for that year (left-hand vertical scale). After statewide
implementation, the differential dropped to 5.35 FTEs short (negative differential) of FHWA recommendations in 2006. In 2007, the number of FTEs approached the recommended number. Then, in 2008 and 2009 the FTE differential returned to around the pre-2006 level, and in 2010 and 2011 there was a sharp increase in LP expenditures and an even sharper increase in the total FTEs working on the LP. The increase in expenditures was due to additional ARRA funding, and a rise in FTEs would be expected. The much faster rise in FTEs relative to cost may indicate that WisDOT paid a cost premium to the MCs to complete the ARRA projects in an accelerated timeframe. This premium would not be entirely unexpected, due to the sharp rise in workload, increased tracking and management requirements, and commensurate expedited schedules of many of the ARRA projects.

Table 12. Comparison of FHWA Recommended FTEs to Total WisDOT LP FTEs.

<table>
<thead>
<tr>
<th>Year</th>
<th>LP Construction Program Awards</th>
<th>FHWA Recommended FTEs (From Table 9)</th>
<th>Calculated WisDOT LP Total FTEs (From Table 11)</th>
<th>FTE Differential</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>$151,256,355</td>
<td>46</td>
<td>53.47</td>
<td>7.47</td>
</tr>
<tr>
<td>2003</td>
<td>$141,058,647</td>
<td>45</td>
<td>48.90</td>
<td>3.90</td>
</tr>
<tr>
<td>2004</td>
<td>$144,773,415</td>
<td>45</td>
<td>48.68</td>
<td>3.68</td>
</tr>
<tr>
<td>2005</td>
<td>$148,887,724</td>
<td>45</td>
<td>47.53</td>
<td>2.53</td>
</tr>
<tr>
<td>2006</td>
<td>$150,202,131</td>
<td>46</td>
<td>40.65</td>
<td>-5.35</td>
</tr>
<tr>
<td>2007</td>
<td>$174,738,277</td>
<td>46</td>
<td>47.24</td>
<td>1.24</td>
</tr>
<tr>
<td>2008</td>
<td>$146,974,955</td>
<td>46</td>
<td>50.50</td>
<td>5.50</td>
</tr>
<tr>
<td>2009</td>
<td>$162,389,015</td>
<td>46</td>
<td>51.07</td>
<td>5.07</td>
</tr>
<tr>
<td>2010</td>
<td>$220,145,240</td>
<td>48</td>
<td>82.05</td>
<td>34.05</td>
</tr>
<tr>
<td>2011</td>
<td>$215,370,428</td>
<td>48</td>
<td>77.00</td>
<td>29.00</td>
</tr>
</tbody>
</table>

Figure 20. FTE Differential and LP Annual Construction Program
7.5.3. **Measures of MC Program Cost Effectiveness**

Table 13 presents the calculation of dollars of construction program per FTE (Column 4). This value represents the amount of LP construction program award (Column 2) managed per total FTEs provided by WisDOT for managing the LP (Column 3).

**Table 13. Dollars of Construction Program per FTE**

<table>
<thead>
<tr>
<th>Year</th>
<th>LP Construction Program Awards</th>
<th>Calculated WisDOT LP Total FTEs (From Table 11)</th>
<th>Dollars of Construction Program per FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>2002</td>
<td>$151,256,355</td>
<td>53.47</td>
<td>$2,828,974</td>
</tr>
<tr>
<td>2003</td>
<td>$141,058,647</td>
<td>48.90</td>
<td>$2,884,590</td>
</tr>
<tr>
<td>2004</td>
<td>$144,773,415</td>
<td>48.68</td>
<td>$2,973,970</td>
</tr>
<tr>
<td>2005</td>
<td>$148,887,724</td>
<td>47.53</td>
<td>$3,132,503</td>
</tr>
<tr>
<td>2006</td>
<td>$150,202,131</td>
<td>40.65</td>
<td>$3,695,070</td>
</tr>
<tr>
<td>2007</td>
<td>$174,738,277</td>
<td>47.24</td>
<td>$3,698,650</td>
</tr>
<tr>
<td>2008</td>
<td>$146,974,955</td>
<td>50.50</td>
<td>$2,910,215</td>
</tr>
<tr>
<td>2009</td>
<td>$162,389,015</td>
<td>51.07</td>
<td>$3,179,651</td>
</tr>
<tr>
<td>2010</td>
<td>$220,145,240</td>
<td>82.05</td>
<td>$2,682,991</td>
</tr>
<tr>
<td>2011</td>
<td>$215,370,428</td>
<td>77.00</td>
<td>$2,797,126</td>
</tr>
</tbody>
</table>

Figure 22 plots the dollars of LP construction program managed per FTE, both for WisDOT’s number of LP FTEs (calculated in Table 13) and for FHWA’s recommended number of FTEs given WisDOT’s LP construction program size (from Table 8). The plot shows that the number of FTEs provided by WisDOT tracks FHWA’s recommended values fairly closely for the most part, until the two most recent years (2010 and 2011). The 2010 and 2011 program expenditures were significantly higher than previous years due to increased funding available through the ARRA program. During these ARRA years, the program dollars managed per FTE declined slightly from previous years. From Figure 22 and Table 8 above it is apparent that, as program value increases, FHWA’s recommended number of FTEs to administer the LP leads to an increase in dollars managed per FTE. The WisDOT program did not track this trend to increase the dollars managed per FTE. The amount of LP construction award program managed per FTE provided by WisDOT (including FTEs provided by MCs) appears to have consistently been slightly below the amount calculated using FHWA’s recommended number of FTEs. A large jump was seen in this difference in the most recent three years of data. This jump appears to be due largely to increases in the amount of program managed per FTE built in to the number of FTEs recommended by FHWA to run a LP of a given size. The amount of construction program dollars managed per WisDOT-provided FTE has dropped off from its peak in 2006-2007, but has approximately returned to pre-MC (pre-2006) levels. This drop from 2006-2007 peak levels may partially represent the cost premium paid by WisDOT to deliver ARRA projects with compressed schedules and enhanced reporting requirements, but the drop began in 2007, before ARRA funding was available.

These calculations and conclusions are complicated by the fact that project costs have changed throughout this period as well. It may be that the number of projects is not increasing as fast as the overall funding for the LP. In other words, while construction program awards may increase by a given amount, that does not represent an equivalent percentage rise in number of projects because each project costs more than it would have the year before. Thus, overall funds may rise faster than the number of projects constructed using these funds. If this is the case, each FTE would be expected to manage more dollars as project costs increased. However, if higher project costs also correspond to higher project complexity, these expectations would change.
Finally, the FHWA recommendations for FTEs were published in 2004. Changing conditions, such as those mentioned above, may make comparison more difficult for years further removed from 2004. In this regard, it may be notable that the WisDOT FTEs tracked the FHWA recommendations most closely for the years 2004-2006. Thus, the comparisons with the recommended FHWA numbers presented here are imperfect, particularly for the most recent years (2010-2011). However, the trend of WisDOT’s value of LP dollars managed per FTE appears to be consistent. It also appears that, with the exception of 2010 and 2011, changes in this value for WisDOT have tracked those that would be recommended by FHWA.

Figure 22. Dollars of Local Construction Program Managed per FTE

Table 14 presents the dollars of program managed per FTE by year for WisDOT, and a comparison of each of these years with a baseline value set to the 2005 value. The 2005 value was chosen as a baseline both because it was the last year before statewide implementation, and because it is close to the recommended FHWA value. It is important to keep in mind, when looking at this table that negative values in column (5) represent decreases in cost effectiveness, because they mean that fewer program dollars were being managed by each FTE. Figure 23 presents these changes graphically. From Table 14 and Figure 23, it appears that, before statewide implementation of the MC program in 2006, the dollars of program managed per FTE were steadily rising. After statewide implementation, the dollars managed per FTE rose to a peak in 2006, and then declined in 2008. In 2009 the dollars managed per FTE recovered to within 1.5% of the pre-MC 2005 level. Then in 2010, with the influx of ARRA funds, the level of dollars managed per FTE declined again. 2011 showed a partial recovery from that decline.
Table 14. Changes in WisDOT LP Management Cost Effectiveness

<table>
<thead>
<tr>
<th>Year</th>
<th>WisDOT Annual LP Construction Program</th>
<th>WisDOT FTEs</th>
<th>LP Construction Program Dollars Managed/FTE</th>
<th>Percent Change from 2005 Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>$151,256,355</td>
<td>53.47</td>
<td>$2,828,974</td>
<td>-9.7%</td>
</tr>
<tr>
<td>2003</td>
<td>$141,058,647</td>
<td>48.90</td>
<td>$2,884,590</td>
<td>-7.9%</td>
</tr>
<tr>
<td>2004</td>
<td>$144,773,415</td>
<td>48.68</td>
<td>$2,973,970</td>
<td>-5.1%</td>
</tr>
<tr>
<td>2005</td>
<td>$148,887,724</td>
<td>47.53</td>
<td>$3,132,503</td>
<td>-</td>
</tr>
<tr>
<td>2006</td>
<td>$150,202,131</td>
<td>40.65</td>
<td>$3,695,070</td>
<td>18.0%</td>
</tr>
<tr>
<td>2007</td>
<td>$174,738,277</td>
<td>47.24</td>
<td>$3,698,650</td>
<td>18.1%</td>
</tr>
<tr>
<td>2008</td>
<td>$146,974,955</td>
<td>50.50</td>
<td>$2,910,215</td>
<td>-7.1%</td>
</tr>
<tr>
<td>2009</td>
<td>$162,389,015</td>
<td>51.07</td>
<td>$3,179,651</td>
<td>1.5%</td>
</tr>
<tr>
<td>2010</td>
<td>$220,145,240</td>
<td>82.05</td>
<td>$2,682,991</td>
<td>-14.3%</td>
</tr>
<tr>
<td>2011</td>
<td>$215,370,428</td>
<td>77.00</td>
<td>$2,797,126</td>
<td>-10.7%</td>
</tr>
</tbody>
</table>

Figure 23. Change in LP Construction Program Dollars Managed per FTE as a Percentage of 2005 Baseline

The important question that must be answered in the coming years is whether the long-term value of program dollars managed per FTE is closer to the 2009 value (1% less than 2005 baseline) or the 2010 value (14% less than 2005 baseline). It is possible that the learning curve for the program participants was bringing the costs close to the pre-MC value of dollars managed per FTE, and that ARRA funds in 2010 and 2011 presented an anomalous situation in which the dollars managed per FTE fell due to increased workloads and time pressures. It is also possible that the trend was not stabilizing and that, even without the changed conditions brought about by ARRA the dollars managed per FTE would have settled back closer to a true mean value closer to the 2008 value. The average change from the 2005 baseline value for the six years since statewide implementation is an improvement in program dollars managed per FTE of 0.9%. The standard deviation of these values is 14.3%, which gives a wide range. Due to this large
standard deviation and the small sample size, this cost effectiveness trend cannot be extrapolated using present data. The length of time that the MC program was implemented statewide before the changed conditions of ARRA funding was too short to make a full determination. However, the average change from the 2005 baseline value of the three years prior to 2005 was -7.6% with a smaller standard deviation of 2.3%. When compared to this pre-2005 average, the post-2005 average program dollars managed per FTE over the six years of statewide implementation of the MC program is 8.5% higher. However, the higher standard deviation since 2005, along with the short time period of data, does not allow for a definitive statement to that effect. This analysis does, however, show that since the statewide implementation, cost effectiveness of the management of the LP, measured in terms of dollars of programs managed per FTE, has not measurably decreased, and may in fact have increased.

7.5.4. Cost Analysis Summary

As would be expected, WisDOT’s in-house LP expenditures have declined as a percentage of total LP expenditures since implementation of the MC program. It appears that the portion of LP expenditures going to MCs and the portion of consultant costs going to MCs have both risen since statewide implementation of the program. However, it also appears that the total consultant delivery expenditures as a percentage of total LP expenditures have not changed significantly since statewide implementation of the MC program.

In the years prior to statewide implementation of MCs, WisDOT’s LP was providing more FTEs than FHWA recommends. The first year after statewide implementation, WisDOT provided less FTEs than recommended, followed by an increase to a level that approximated the recommended number. In 2010 and 2011 there was a sharp increase in LP expenditures and an even sharper increase in the total FTEs working on the LP, with WisDOT’s LP providing more FTEs than the FHWA recommended number.

When measured in terms of program dollars managed per FTE, WisDOT’s LP also closely approximated FHWA’s recommended levels for much of the period 2002 – 2011 under consideration. In 2010 and 2011, the program dollars managed per FTE declined slightly from previous years and diverged considerably from the FHWA recommendations. This may indicate a cost premium paid by WisDOT for accelerated delivery of the ARRA projects. Before statewide implementation of the MC program, the dollars of program managed per FTE rose slowly. After statewide implementation, the dollars per FTE rose, followed by a decline, slight recovery, and then a slight fall, with the level for 2011 approximately 11% below the 2005 baseline value. The values of program dollars managed per FTE have a large standard deviation, and a trend is not clear. However, when the values are averaged for the six years since statewide implementation of the MC program, the dollars managed per FTE are, on average, 0.9% higher than the 2005 baseline value. This indicates that, since the statewide implementation, cost effectiveness of the management of the LP measured in terms of dollars of programs managed per FTE, has not measurably decreased, and may in fact have increased.

It is recognized, for reasons discussed above, that this cost analysis is far from conclusive. It is also recognized that a LPA may potentially be required to spend more on LP projects since statewide implementation of the MC program. However, it is not clear that this is due to MC management. It has been suggested that this increase in costs seen by some LPAs may be due to three factors: (1) MC profit; (2) improved compliance; and (3) more effective assignment of actual management costs to LP projects. If this is the case, factor (1) would be an artifact of the switch to MCs, while factors (2) and (3) would be considered adjustments to a more accurate accounting of what the LP should have cost from the beginning, if it were in compliance with FHWA requirements and costs were accurately and completely captured and passed on to the LPAs. There is no evidence that MC management is costing WisDOT more than in-house management of the LP cost.
8. OTHER POTENTIAL BENEFITS OF USING MCS

Other potential benefits of using MCs noted throughout the study during review of literature, interviews, and survey results are described in this section.

MCs, who have more experience with Federally funded projects generally are able to streamline the federal funding process and minimize compliance issues that tended to occur when LPAs had a greater amount of responsibility for managing their own projects in the past.

It has also been suggested that MCs are often solely dedicated to the LP, and provide focus and commitment that would be difficult for WisDOT staff to match if personnel that worked on State projects also worked on LP projects. WisDOT staff may have multiple responsibilities in addition to LP management. It is in the MCs’ best interest to do a good job, as their reputations are on the line, and for many of them managing the LP is the core or majority of their business. MCs give a higher priority to LP projects than would happen under management by WisDOT, due to the fact that MCs are dedicated and focused solely on LP projects, and so the MC program leads to more time spent on LP projects with resultant higher oversight and better compliance. Management of the LP by WisDOT staff has, in the past, placed their focus first on state programs, with a corresponding reduction in the emphasis placed on the LP. However, the presence of the MCs can act as a buffer to prevent this, since their funded resources are dedicated to the local program.

Another benefit of contracting out work is that WisDOT acquires access to specialized skills or expertise that they may not have in-house (1). MCs have a better ability than WisDOT to bring in appropriate experience, expertise, or specialists from elsewhere in their organizations as needed, and to better utilize them for short time periods. MCs can more easily utilize part-time administrative staff for the LP, leading to increased personnel resource efficiency. Hiring in-house full-time staff would cost WisDOT more than utilizing a part-time MC employee as needed, because of the difficulties in allocating these full-time personnel among LP and State program functions.

Once concern of WisDOT when administering the LP in-house was that costs were not being adequately captured for LP projects. Various concerns were raised through interviews with WisDOT staff, including the inability of PMs to track an adequate number of project IDs on their reporting forms, short periods of time spent working on LP projects being lost in the larger amounts of time being spent on State projects, and ‘free-ride’ problems, where, for example, a trip to inspect a both a State and LP project was charged entirely to the State project. MCs tend to be more concerned with charging their time to the appropriate project than WisDOT personnel, due to the billable culture of profit-driven consultant organizations, capturing the entire cost of a LP project more accurately.

Since MCs need to master and implement things like FDM changes the same way WisDOT does, MCs in at least some Regions also assist or take the lead in tasks like updating guidelines, for which WisDOT staff do not always have adequate time. One other issue raised by one PM is that, when WisDOT policies change, their LP generally runs into any problems associated with that change first, due to the volume and diversity of their LP projects. The MCs often help to work out solutions to these problems, and so contribute to efficiency and consistency across a number of WisDOT programs and the state in addition to the LP.

Other potential benefits of retaining MCs involve workload fluctuations. Contracting out of work is useful for managing short-term workload fluctuation, provides added flexibility and allows WisDOT to respond more rapidly to spikes in their workload than if they had to bring new in-house staff on board. Contracting also allows state DOTs to reduce their workforce without having to lay off in-house employees when workloads decrease (1). It is not clear how state departments would have handled past demand increases, such as the recent implementation of ARRA projects, without MCs in place to handle the added workload. These increases in demand have effects on State DOTs with regard to hiring and training new staff, accommodating and equipping them, establishing the necessary support staff,
providing an organizational structure in which to operate and reducing staff when the demand decreases. Even if WisDOT could have ramped up their personnel to meet the demands of ARRA, there would have been a commensurate need to reduce staff when these projects were finished. MCs appear to be a functional solution to the personnel problems created for WisDOT by these fluctuations in demand. All of the Region PMs felt that ARRA projects could not have been successfully completed without MC assistance.

To ensure that consultants are able to handle peak demands when they arise, consultants need to be performing engineering tasks for the state on an ongoing basis and mechanisms must be in place and functioning within the state organization to handle consultant involvement (8).

MCs may also be essential for meeting specific time frames or for increasing the speed of completion of a task. Some other potential benefits of MCs that have been asserted include a reduced need for state DOTs to make capital investments in expensive equipment, added flexibility for DOTs to reduce staffing during slow periods (such as the winter), and increased competition generated by contracting out the work (1).

Additional factors that DOTs have reported as ‘important’ or ‘very important’ in decisions to contract out activities included (1):

- Shortage of in-house staff;
- Need to maintain flexibility or manage variations in department workload;
- Need to access specialized skills or equipment;
- Need to increase speed of completion or to meet specific time frames;
- Need to meet Federal or state legislative mandates, requirements or policy initiatives;
- Need to identify innovative new approaches or new techniques; and
- Need to obtain cost savings.

Finally, there are benefits realized from providing assistance to inexperienced design/construction oversight contractors. Small local units of government also often feel strongly that technical and program assistance is crucial to effectively advancing projects. They need clarification of guidance and help developing and processing non-routine project actions. Because LPA interests do not always align with Federal or State requirements, MC management also acts as an important intermediary.

9. OTHER POTENTIAL DISADVANTAGES OF USING MCS

Some DOTs have stated that they prefer to keep construction inspection and engineering activities in-house to retain greater control over the quality of contracted work. One DOT has indicated they do not like to have consultants oversee other contractors and consultants, but that they need to contract out inspection activity for projects that require expertise they do not have in-house (1). A small number of stakeholder survey respondents were concerned about consultants being overseen by consultants, MCs having too much influence over selection of other consultants, and the idea of competitors learning too much information about their operations. Reviewers and at least one Region PM have also mentioned that this could represent a conflict of interest, an unfair competitive advantage, and that negotiating contracts for design and construction oversight are an inappropriate area for MC involvement.

Some survey respondents expressed concerns that having MCs involved in selecting design and/or construction oversight consultants can create various types of conflicts of interest. Comments on the Interim Report from the American Council of Engineering Companies (ACEC) of Wisconsin also revealed concerns about whether it was proper to have MCs participating in negotiation of other consultants’ (design/construction oversight) contracts. There was also concern that this process was dangerously close to allowing a MC to dictate how much a design/construction oversight consultant will be paid for their services. The ACEC members’ foremost concern was the amount of influence MCs
wield in selection of design/construction consultants by LPAs, particularly in situations where the MC may in fact be a sub-consultant to a design/construction oversight consultant under consideration by the LPA, which can represent a substantial conflict of interest. ACEC members were also concerned that the MCs have access to much more confidential information than a non-MC consultant in Wisconsin, giving them advantages in marketing, negotiating, and performing services for WisDOT. ACEC members felt that MCs should be prohibited from being selected for any other (non-MC) WisDOT services. WisDOT has not been made aware of any specific situations where competition has been affected.

Factors that were reported by state DOTs as ‘important’ or ‘very important’ in making the decision to use Department staff, instead of contractors, to perform an activity included (1):

- Need to retain key skills and expertise in-house;
- Perceptions that cost of consultants/contractors is greater than using in-house staff;
- Perceptions that work will be of higher quality if performed by in-house staff;
- Perceptions that work can be performed more quickly using in-house staff;
- Legal restrictions or policy initiatives regarding the use of consultants or contractors;
- Required skills or expertise not available in private sector;
- Concerns with liability or accountability for contracted work; and
- Lack of competition/insufficient number of bidders.

The most commonly cited factor leading to a decision to keep work in-house in both interviews and the GAO survey of DOTs was the desire to retain key skills and expertise within the Department (1).

Excessive use of consultants in some organizations has also “generated resentment among in-house staff prompted by a fear that their organizations would be reduced in stature, prestige, and influence. In addition, there is concern that conditions of service in the department would be impacted by a reduced variety of work and fewer opportunities for career advancement” (11). Another morale effect may be that WisDOT personnel may not be happy if MCs, who charge much higher hourly rates, need additional assistance to complete projects, or need State personnel to increase their efforts to make deadlines. Additionally, some MC personnel do not work full-time, which can also lead to issues of timeliness. Region PMs indicated that solutions have been worked out between PMs and MCs to overcome most of these timeliness issues.

Some critics have raised concerns that the increased use of consultants and contractors can contribute to a loss of accountability of DOT personnel, and a decline in the skill levels and experience of public sector staff, resulting in lower quality projects (1). The concern is that, “as state staff become further removed from the day-to-day management of highway construction projects, they are less able to develop the experience, skills, and expertise needed to effectively oversee construction contractors and consultants” (10).

GAO found that, as consultant use is increased, state employees are increasingly further removed from the day-to-day oversight of the particular projects, and are more frequently overseeing a number of highway projects simultaneously. Also, DOTs have indicated that the decreasing number of experienced staff, combined with their departments’ increased reliance on contractors and consultants, may erode in-house expertise at their departments. Finally, with the increased involvement of consultants and contractors in almost all highway activities, from design to final inspection, more potential exists for conflicts of interest and for independence issues (1).

Finally, participants are concerned about potential inconsistency among various MCs. This report has attempted to understand the levels of inconsistency in the current MC program throughout Wisconsin. However, this will remain a concern, as it is very challenging to maintain consistency and very challenging to measure it. However, the fact also remains that the issue of inconsistency is not limited to
the MC program. In fact, concerns over inconsistency exist for WisDOT Region personnel, as well as for MC personnel.

10. CONCLUSIONS

Outcomes of the document and literature review and WisDOT interview portion of the current study indicate that most within WisDOT and FHWA are satisfied with the MC program. FHWA found, in 2008, that the Construction Administration and Financial Accountability aspects of the LP are in “reasonably good shape,” and that the LP had been improved since the 2004 and 2006 reviews, reflecting LP improvements since the statewide implementation of MCs. FHWA feels that WisDOT should focus its LP management efforts on strong and proactive oversight of the MCs, using a ‘trust but verify’ approach and selective spot checking of required MC activities (15).

There appear to be varying expectations among some project stakeholders (WisDOT Central Office, FHWA, LPAs) regarding the MCs’ roles and responsibilities, particularly in the area of the preliminary project scoping and programming phases. Contract language seems to identify MC roles and responsibilities clearly, but there needs to be more clarification, documentation, and training completed to create a common understanding amongst all parties. Some of this confusion is undoubtedly due to the fact that the MCs in different WisDOT Regions are responsible for different things, based on their contracts. The WisDOT PMs in each Region seem to have a good grasp of the roles and responsibilities of the MCs with whom they contract, and feel that the MCs also understand their roles and responsibilities.

None of the literature reviewed nor interviews conducted gave any indication that project design has suffered under MC supervision. In fact, the general consensus of interview subjects was that, if anything, the project design process has improved under MC management.

10.1. Cost

While stakeholders and LP users have indicated that there may be a cost premium associated with the MC program, there does not appear to be any evidence to support that. Many stakeholder comments from previous surveys indicated the belief that the MC program has led to increased costs. The results of the new stakeholder survey completed for the current project gave mixed indicators regarding factors related to costs of the MC program. The majority of respondents did view overall costs as too high. However, design and construction change costs were viewed as appropriate. Of those LPAs who had disputes on their projects, the majority responded favorably regarding the costs of those disputes. Most Construction Oversight consultant and LPA respondents viewed their time commitment as appropriate, while fewer design consultants felt this way. Most Construction Oversight consultants, and the majority of LPAs and Design consultants viewed the MC staff allocation as appropriate. Most Construction Oversight consultant respondents felt the amount of their interaction with MC personnel and WisDOT personnel was about right.

WisDOT and FHWA concur that there could be some cost increases associated with the MC program. However, no conclusive data has been located to establish this assertion, and there is some indication that increased costs may be due to requirements implemented by MCs that have brought LP projects into better compliance with Federal requirements. There is anecdotal evidence that the baseline for comparing costs with MC-managed projects may be inaccurate, since many of those projects, according to past FHWA program reviews, may have been out of compliance, and so had artificially low costs.

LPAs may be seeing higher costs on LP projects since statewide implementation of the MC program, but it may be that this increase in costs is attributable to factors other than MC management, including: (1) MC profit; (2) improved compliance; and (3) more effective assignment of actual management costs to LP projects. Factor (1) would be an artifact of the switch to MCs, and would be related to additional
costs, while factors (2) and (3) would be considered adjustments to a more accurate accounting of what the LP should have cost from the beginning, if it were in compliance with FHWA requirements and costs were accurately and completely captured and passed on to the LPAs.

As would be expected, the cost analysis found that WisDOT’s in-house LP expenditures have declined since implementation of the MC program. It appears that the portion of LP expenditures going to MCs and the portion of consultant costs going to MCs have both risen since statewide implementation of the program, but that the total consultant delivery costs as a percentage of total LP expenditures have not changed significantly since statewide implementation of the MC program.

In the years prior to statewide implementation of MCs, WisDOT’s LP was providing more FTEs than FHWA recommends. The first year after statewide implementation, WisDOT provided less FTEs than recommended, followed by an increase to a level that approximated the recommended number. In 2010 and 2011 there was a sharp increase in LP expenditures and an even sharper increase in the total FTEs working on the LP, with WisDOT’s LP providing more FTEs than the FHWA recommended number.

When measured in terms of program dollars managed per FTE, WisDOT’s LP also closely approximated FHWA’s recommended levels for much of the period 2002 – 2011 under consideration. In 2010 and 2011, the program dollars managed per FTE declined slightly from previous years and diverged considerably from the FHWA recommendations. This may indicate a cost premium paid by WisDOT for accelerated delivery of the ARRA projects. Before statewide implementation of the MC program, the dollars of program managed per FTE rose slowly. After statewide implementation, the dollars per FTE rose, followed by a decline, slight recovery, and then a slight fall, with the level for 2011 approximately 11% below the 2005 baseline value. The values of program dollars managed per FTE have a large standard deviation, and a trend is not clear. However, when the values are averaged for the six years since statewide implementation of the MC program, the dollars managed per FTE are, on average, 0.9% higher than the 2005 baseline value. The cost analysis indicates that, on a “dollars managed per FTE” basis, there is no evidence to suggest that the MC program has operated less cost-effectively than the LP operated prior to statewide implementation. There is no evidence that MC management is costing WisDOT more than in-house management of the LP cost.

The data necessary to perform these analyses would be greatly enhanced if WisDOT had the ability to gather accurate and extensive data on management costs for projects, both those managed by WisDOT PMs and by MCs. To be useful for these analyses, the data would require an accurate and complete accounting of time and effort spent on each project by project personnel, both MC and WisDOT personnel.

Other potential costs to the industry have also been mentioned in stakeholder surveys and by Interim Report viewers. These include costs that arise from MCs dictating low fees for consultants, from MCs oversight costing consultants more than they are paid by delaying projects, and inflation that leads to construction cost increases. These costs were not captured in the quantitative cost analysis, but the study attempted to qualitatively capture these costs in the stakeholder survey. WisDOT Region PMs did not feel that MCs were causing delays. A number of the comments from the previous LP users and stakeholder surveys addressed a lack of timeliness with MC projects, which could certainly add to costs by leading to inefficiencies, in design or construction, re-work after a project has been significantly delayed, or increased construction costs. Based on the existing surveys, timeliness and responsiveness of MCs to questions and requests from LPAs and design/construction consultants appears to be an area where improvement can and should be made to the MC program. The stakeholder survey completed for the current project also found that concerns remain over MC timeliness. Reviewers of the Interim Report indicated that there is a need for a greater partnering effort among MCs and other project participants to get projects completed on time.

In the survey completed for the current project, most Construction Oversight consultants and some Design consultants surveyed felt the MCs improved project schedules. Most LP projects were delivered
on time. Timeliness was rated very well by Construction Oversight consultants, about half positive by LPAs, and mostly negative by Design consultants. Impressions of timeliness varied across the various stakeholder groups. The majority of Construction Oversight consultants felt that the MC was timely in responding to requests. This decreased to 45% of LPA respondents and 27.3% of Design consultants. WisDOT Region PMs felt that timeliness problems were not widespread in the MC program, and that the roots of many of those timeliness problems could be traced back to the Design consultant or the original LPA-developed schedule constraints. There was a feeling that many of the timeliness problems experienced by designers were due to factors outside the MCs’ direct control, such as late submittals from the designers, low quality submittals from designers that require significant review time to correct, and bottlenecks that occur when PMs have to review documents before the MC can return them.

10.2. Compliance

WisDOT’s LPA Program Report from 2007 answered a “conditional yes” to the question of whether the State’s oversight program for Federally funded LPA projects was adequate for achieving compliance with Federal requirements. The compliance issues that did exist resulted mostly from lack of focus and support for the LPA program, not from a lack of regulations.

All interviews and documents reviewed indicated that compliance has improved since implementation of the MC program. Review of FHWA reports and interviews with FHWA personnel indicate that WisDOT’s LP is in much better compliance at present than in years past, specifically before statewide implementation of the MC program. The comments from LP users and outside stakeholders generally implied or stated that compliance had improved, although a number of respondents from sponsoring LPAs felt this had swung too far, resulting in overkill. This view does not seem to be widely shared by FHWA or WisDOT personnel. It appears from the results of the survey completed for the current research that most projects are meeting WisDOT and Federal requirements, and most LPAs and Construction Oversight consultants are satisfied with this performance. There is less agreement on whether MC involvement has led to this satisfactory performance. Significant portions of all three sets of survey respondents answered that they did not know whether this was the case. However, compliance is seen by WisDOT Region PMs as the MCs’ top priority, and this was felt to be appropriate, based upon their duties.

WisDOT BEES staff interviewed felt that overall there is little significant difference between environmental documents prepared by Region staff and those prepared by MC-supervised design consultant staff in terms of quality and compliance. Many of the issues that exist with MCs preparing environmental documents also exist with State WisDOT staff preparing them. While BEES can sometimes tell that MCs have not properly reviewed environmental documents, MCs are knowledgeable about requirements and process, and MCs can be helpful to ensure that the proper process is followed. All WisDOT Region PM respondents felt that their LP projects are meeting WisDOT and FHWA requirements well or very well. There was general agreement among WisDOT Region PMs that compliance of LP projects has improved significantly since implementation of the statewide MC program, and that this improvement was, in large part, due to MC involvement in managing LP projects. The Region PMs agreed that the Environmental Document process and final product were improved by MC involvement. The Environmental Documents are often approved more quickly by FHWA with MC input.

MCs, who have more experience with Federally funded projects generally are able to streamline the LP process and minimize compliance issues that tended to occur when LPAs had a greater amount of responsibility for managing their own projects in the past.

10.3. Consistency

There was general consensus among WisDOT Region PMs that MCs are providing WisDOT with value in terms of the goals set for the program, which were increased compliance and consistency within the
There was also general agreement among Region PMs that consistency among the Regions is one of the largest challenges faced by the LP.

One way that consistency was measured was to analyze which questions in the stakeholder survey were answered most consistently. Most of the cost related questions appeared in the highest category of consistency within all three survey groups including the direct question of how much the MC program costs, various measures of levels of interaction, and timeliness of MC responses. A number of compliance-related questions were answered consistently within the various survey groups. In addition, a number of more general, competence-related questions were consistent within all three groups. For example, responses evaluating communication were consistent within the three surveys. Most of the Low Consistency questions involved questions about specific MC duties. As established from the PM interviews, MCs are not tasked with exactly the same duties from Region to Region, which could undoubtedly lead to inconsistencies in these areas. Supporting this hypothesis is the fact that nearly all of the Low Consistency questions, particularly for LPA responses, had a significant amount of respondents who gave no answer, or answered N/A.

Survey respondents showed consistency in their pattern of answers to the question that asked for areas of the MC program that required improvement. Costs of the MC program was the number one issue cited by LPAs, followed by level of assistance. Design consultants were relatively split among the various aspects of the program that needed improvement, with the across-Region variation for a given response being low, while Construction Oversight consultants were consistently content with the MC program as it is. The ratings for the timeliness of response of MCs was generally consistent within LPA and Construction Oversight consultant groups. Responses from LPAs to the question of rating their costs were consistent. For the most part, MC competence was rated consistently. The results of this analysis show a higher level of inconsistency among LPA and Design consultant respondents in regard to the Environmental Document process and final product, which is consistent with individual responses, where many respondents had answered “Not sure” to a number of compliance-related questions. The respondents’ views on the MCs’ focus on compliance, the timeliness of MC responses, and the usefulness of MC reviews all demonstrated consistency in their responses.

Inconsistencies were cited by multiple designers and one construction oversight consultant in their comments on the stakeholder survey. The responses that MCs were stricter, more stringent, or more aggressive than WisDOT staff that previously administered the program may indicate that the MC’s are enforcing regulations more forcefully than was the case under WisDOT management, or may be the result of the respondent working on LP projects with stricter requirements after having worked on other projects that did not have the Federal requirements inherent in an LP project. While individual experiences are difficult to gauge from an open-ended request for comments, it appears from the survey results that inconsistencies do exist across the five WisDOT Regions, but that these inconsistencies are not large enough to strongly affect stakeholder participants on a large scale.

Evidence from stakeholder input indicates that consistency has improved since the first implementation of the MC statewide. It is implicit that expanding the MC program from selected Regions to the entire state has put all participants in a more consistent position in regard to the LP, although there are still complaints regarding consistency from some LPAs and LP stakeholders.

Another issue of consistency identified in the stakeholder survey administered as part of this project was that of consistency from employee to employee within a given MC firm. A repeated criticism of the program was that various reviewers at a particular MC firm would give conflicting comments, or that timeliness would be affected by changes in personnel assignments at the MC firm. There is some concern that MC performance is inconsistent from project to project, with differing requirements for different projects. This was not a large concern among respondents to the stakeholder survey, though it was mentioned by a small number of respondents. There was agreement among WisDOT Region PMs, however, that these concerns have not been realized as widespread problems in the Regions.
There was also general agreement that movement of the management of the LP program back to Regions from the Central Office would likely lead to increased problems with consistency in the LP throughout the state. PMs noted a few specific areas they see as inconsistent among the Regions, including contract negotiations, materials and testing, and MC duties. Scoping was one area where inconsistencies were particularly evident among the Regions as noted in PM interviews.

There appears to be general agreement among WisDOT, FHWA, and stakeholders that the consistency with which LP projects are meeting Federal requirements has improved under the MC program.

### 10.4. Other Factors

Factors other than cost, compliance and consistency may be important in evaluating the utility of the MC program to WisDOT. MCs may streamline project processes, may provide focus and commitment that would be difficult for WisDOT to match in-house, and may give a higher priority to LP projects than shared State-LP WisDOT staff could. This likely leads to more time spent on LP project oversight with better compliance results, as well as other potential benefits like higher quality plans, specifications, and other documents, which can save WisDOT time and money in the long-term. It also can allow WisDOT staff to devote more time for dealing with LP program oversight and management issues. MCs also tend to capture the entire costs of a project more accurately than WisDOT does, because MCs operate within a profit-driven, billable environment, where necessity and the organizational culture make time and cost tracking even more important than in the WisDOT environment. MCs also provide easier access to specialized skills or expertise that WisDOT may not have in-house, and more flexibility with personnel resources. This allows MCs to manage short-term workload fluctuations more effectively than WisDOT would be able to, and to respond to workload peaks more quickly. Finally, MCs may provide other, unexpected collateral benefits. MCs can often take the lead or assist in periodic tasks such as updating guidelines or working out solutions to problems when changes are made to WisDOT procedures or requirements. MCs can also provide assistance to inexperienced design and/or construction oversight consultants, and to LPA organizations that may have limited experience completing Federally-funded LP projects.

Other disadvantages may make MC implementation less attractive. There is a feeling among a number of stakeholders that the MC program presents opportunities for conflicts of interest, with consultants managing other consultants, learning too much about competitors, and providing an unfair advantage for MC firms when competing for other WisDOT services. Use of an MC model may also lead to loss of key skills and expertise in-house at WisDOT, if those skills are needed on a less regular basis. Other concerns with using the MC model that are worth noting are the potential for loss of accountability of WisDOT personnel, a decline in experience levels among WisDOT personnel, potential liability issues for the contracted work, and the possibility that WisDOT morale may be adversely affected. Contracting out services, such as the management of the LP, could reduce work variety and satisfaction among WisDOT employees, could limit the experience gained and hence the available opportunities for career advancement among WisDOT employees, and could lead staff to fear that WisDOT’s stature, prestige, and influence may deteriorate. Finally, consistency across MCs and Regions remains a challenge, as does measuring this consistency.

It is apparent from the results of the current study that the local program could not currently be administered by WisDOT staff without a substantial internal staff reallocation. The MC program, in addition to providing apparent improvements in compliance, provides the means to accommodate current workloads with the current WisDOT personnel and organization. A significant amount of anecdotal evidence indicates that the flexibility provided by MCs also allowed WisDOT to implement a workload of ARRA projects that would have been impossible or very difficult to accommodate with WisDOT personnel alone. Without the access to MCs, it is likely that some of the benefits enjoyed by Wisconsin that resulted from the ARRA funding could have been lost. The provision of this added flexibility is an
important factor that must also be considered in any deliberations on the performance of the MC program and how the program should operate.

11. RECOMMENDATIONS

According to the FHWA Wisconsin Division 2011 Program Assessment, “WisDOT has made substantial improvements to their local program, and is reducing the number and severity of recurring problems and errors, largely due to the investment and efforts of the MCs” (17). However, several challenges remain to improve the LP.

The oversight and management of the program will require WisDOT leadership to clearly and convincingly communicate to all stakeholders, in particular LPAs, that WisDOT will fully enforce Federal requirements on WisDOT local projects. State leaders need to be convinced that Wisconsin will lose the ability to use Federal funds for local projects unless they commit sufficient resources to ensure that they have and will implement an effective oversight program. LPAs need to be convinced that they do not have an entitlement to use of Federal funds – that is, they must meet requirements to keep using Federal funds. There is additional need for technical training for the hands-on staff (16). Based on self-reported goals and challenges, MCs appear to view working with inexperienced LPAs and consultants as challenges. WisDOT also sees the LP as a place for ‘training’ new consultants, or at least has in the past. These challenges need to be addressed through education and training for LPAs and consultants.

FHWA has noted that there is no single party assigned responsibility for overall ‘financial management’ of projects. There is no single source for tracking the full cost of a LP project. Having a single party responsible for the financial management of LP projects could significantly improve WisDOT’s ability to ensure that each project expenditure is valid and adequately documented, and could allow for a much more in-depth cost analysis.

It is recommended that standardized data be collected from every LP project: (1) Timeliness data – was project delivered on time? and (2) detailed cost and time accounting of how much time and money were spent on each aspect of each project - maintain detailed, accurate timesheets for each LP project.

WisDOT Region PM input indicated that meetings involving all PMs and MCs from around the state are essential to maintaining and improving statewide consistency. One best practice described by a Region PM was to involve MCs directly in FHWA project reviews, so that the MC can develop a direct relationship with FHWA and understand FHWA expectations and implement this understanding in their management of LP projects.

11.1. Program Recommendations

This study has found that the MC program has improved compliance, and has not, on average, increased management costs per dollar of construction program. There is no evidence that costs have increased due to statewide implementation of the MC program. Consistency has been found to be a continuing challenge within the MC program, as has communication and training of all project participants, particularly smaller LPAs and inexperienced Design and Construction Oversight consultants. It has also
been established that MCs help mitigate spikes in workload, and that successful completion of ARRA projects would have been difficult or impossible without them. Additionally, it is clear from this research that WisDOT would have difficulty taking over the LP and maintaining a constant level of quality and compliance, unless a major personnel re-structuring were to take place.

Table 15. Summary of Findings and Recommendations

<table>
<thead>
<tr>
<th>Program Indicator</th>
<th>Findings</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Cost effectiveness has remained relatively constant over the switch to statewide implementation of MCs. The two most recent years have had lower cost effectiveness, possibly reflecting a cost premium for ARRA projects.</td>
<td>Monitor cost effectiveness going forward. Expect cost effectiveness to recover from ARRA premiums</td>
</tr>
<tr>
<td>Compliance</td>
<td>All indications are that LP compliance has markedly improved under statewide implementation of MCs.</td>
<td>Continue to monitor compliance.</td>
</tr>
<tr>
<td>Consistency</td>
<td>There is no evidence that consistency throughout the LP has suffered under statewide implementation of MCs. Consistency continues to be a concern of many stakeholders.</td>
<td>Address consistency concerns. Bring all MC staff and Region staff together with CO staff and FHWA on a regular basis to maintain consistency among regions. Develop a standard MC contract for use across all Regions.</td>
</tr>
</tbody>
</table>

It is recommended that the MC program be continued, with a re-evaluation of costs within the next five years to determine where the cost trend is headed. In the absence of large re-organization of WisDOT staff, the MC program seems to provide a solution to the problem of keeping the LP in compliance with FHWA regulations, has not been shown to appreciably increase costs, and is being accepted by the majority of the LP stakeholders. Finally, it is recommended that all appropriate steps be taken to ensure consistency across the MCs and the various Regions. This may take the form of increased monitoring of LP projects from the Central Office, increased interaction among the LP personnel from the five Regions and each of their MCs with each other and with FHWA, and standardized MC contracts across the Regions.

12. REFERENCES


(3) WisDOT. SWL Master Contract 0696-11-68. Wisconsin Department of Transportation.


(5) WisDOT. STATE/MUNICIPAL AGREEMENT FOR A HIGHWAY IMPROVEMENT PROJECT. Madison, WI : Wisconsin Department of Transportation, 2010.


