

Figure 4.1-4: P3PMS Processes

- **Del. Pro. 3: O&M During Construction:** O&M Work carried out prior to commencement of the Operating Period. Its responsibility will be shared by the DB Team and the Developer.
- **Del. Pro. 4: Transfer:** This describes the process of acceptance of the facility by the Concessionaire once the DC Works are finished. As Corsan and Isolux are related companies, this interface will be a smooth transition and much easier than separate organizations.

Throughout the project, our Key Personnel and Task Managers control our P3PMS process, which will provide IFA/INDOT with the flexibility and responsiveness to mitigate issues

- **Del. Pro. 5: O&M After Construction:** O&M work carried out on and after commencement of the Operating Period. This will be the responsibility of the O&M Team of the Developer. This includes the Life Cycle Maintenance.
- **Del. Pro. 6: Handback:** This includes processes that ensure that the Project is delivered to the IFA in accordance with the Handback requirements and procedures established by the PPA after the termination of the concession period. This will be the responsibility of the Concessionaire.

Control Process (CP): To ensure that the I-69 DP Team controls every aspect of the works required to achieve the Project objectives. The CP is divided into five areas:

- **CP1: Project Integration Management:** Includes the processes and activities needed to identify, define, combine, unify and coordinate the various processes and project management activities.
- **CP2: Project Scope Management:** Ensures that all the work required to complete the Project successfully has been identified. Managing the Project scope is primarily concerned with defining and controlling what is and is not included in the Project.
- **CP3: Project Time Management:** Includes the processes required to manage timely completion of the Project, including definition, sequencing, estimation of resources and estimation of durations of the activities and the development and control of the schedule. Our objective is to minimize schedule deviations.

- **CP4: Project Cost Management:** Includes the processes involved in estimating, budgeting and controlling costs so that the Project is completed within the approved budget. Our main objective is to minimize the deviation in the cost.

- **CP5: Project Quality Management:** Includes the processes and activities of Quality management and sets forth quality policies, objectives and responsibilities needed to fulfill the Project requirements.

- **CP6: Project Safety Management:** Includes the processes and activities related to Project Safety, both for workers during and after construction as well as the road Users.

Support Process (SP): The intent is to ensure the proper implementation of the I-69 DP Delivery Process through the provision of all necessary resources. This includes management support, supply of qualified and experienced people, our supply chain, the input of technical experts, plants and equipment, public relations, financial support and Project documentation.

The Support Process is divided into four areas:

- **SP1: Project Human Resource Management:** Manages the Team workforce, including the recruitment, selection, training, assessment and rewarding of employees. It also oversees organizational leadership, On-The-Job training program and Workforce Diversity .
- **SP2: Project Communications Management:** Includes the processes required to ensure timely and appropriate generation, collection, distribution, storage retrieval and ultimate disposition of project information. It provides an effective liaison that ensures communication and creates a bridge between team members, IFA, INDOT and stakeholders.
- **SP3: Project Risk Management:** Includes conducting the management planning, identification, analysis, response planning, monitoring, and control of Project risk. Our objectives are to increase the probability and impact of positive events and decrease the probability and impact of negative events on the Project.

- **SP4: Project Procurement Management:**

Includes the procurement processes necessary to purchase or acquire services, materials and other commodities needed from outside I-69 DP Team. It also identifies the processes to manage and control the contracts with the suppliers and the relations with DBEs.

Each of the Delivery Processes (Finance, Design-Build, O&M During Construction, Transfer, O&M After Construction and Handback) has five Delivery Process links with the CP and the SP. These are:

1. **Initiating Phase:** Definition of a new phase of the Project by obtaining notice to proceed.
2. **Planning Phase:** Establishment of the scope of the Project, refinement of the objectives and definition of the course of action required to attain the objectives of the Project.
3. **Executing Phase:** Performance and completion of the work defined in the Project management plan to satisfy the Project specifications.
4. **Controlling Phase:** Monitoring and tracking of the progress and performance of the Project, identification of any areas in which changes to the plan are required, and the initiation of the corresponding changes.
5. **Closing Phase:** Finalization of all activities to formally closeout the Project or one of the phases of the Project.

4.1.1.a Management Structure and Personnel

Isolux has already executed a Design-Build Term Sheet with the Design-Build Contractor, Corsan. Corsan has executed a Design Agreement with AZTEC-TYPSA joint venture, the Lead Engineering Firm. AZTEC and TYPSA have drafted a Design Joint-Venture operating agreement. (Please refer to *Volume 1, Appendices* for these agreements). The Design-Build Contractor has also executed memorandums of understanding with the three main Indiana contractors (Gradex, Force Construction and E&B Paving) and AZTEC/TYPSA has also initiated Design Subconsultants agreements with several design firms (Burgess & Niple, Christopher B. Burke Engineering, Professional Service Industries, Keramida, iTunnel, Eco-Tech Consultants, Hard Lines Design, and VS Engineering). The I-69 DP Team commits that the Concessionaire will self-perform the O&M in an amount no less than 30% of the O&M Work, therefore no contract with a Lead

O&M Contractor is required. A visual depiction of the lines of agreements are shown in *Figure 4.1-1*.

I-69 DP's goal is to put the global knowledge of Isolux, Corsan, and AZTEC-TYPSA at the service of the IFA/INDOT. To provide that knowledge and to support our long-term commitment to the IFA, INDOT, and the citizens of Indiana, our Key Personnel and Task Managers have been selected to meet our strict qualification standards. Our key members are reinforced by experienced and competent support personnel assembled to deliver the Project efficiently, safely, on-time and within budget. We will provide services of the highest quality, consistent with best transportation P3 management practices and the requirements of the PPA.

4.1.1.a.i Project Management Organization Chart



Since the Equity Member and the Design-Build Contractor are related companies and the O&M work is going to be self-performed by the Developer, our organization avoids conflicting interests, accelerates the decision making process and mitigates risks. This relationship also allows for key functions to benefit from clear lines of authority and responsibility and enables the Team to work in a fully integrated manner, which is essential for a successful P3 project delivery.

I-69 DP has developed an integrated organizational structure, shown in *Figure 4.1-5*, to span the entire project period with four sub-organizations

- Concessionaire
- Design-Build
- Operations & Maintenance
- Independent Sub-organizations (Quality, Safety, and Environmental Compliance)

José R. Ballesteros (Project Manager) will apply the same leadership as he did on the \$130M A-4 Expressway, including O&M During Construction

The I-69 DP integrated organization in *Figure 4.1-5* identifies the sub-organizations, team member firms, key personnel and task managers that are assigned to critical responsibilities. The organization chart also illustrates the interrelationships of the sub-organizations and the formal lines of authority and

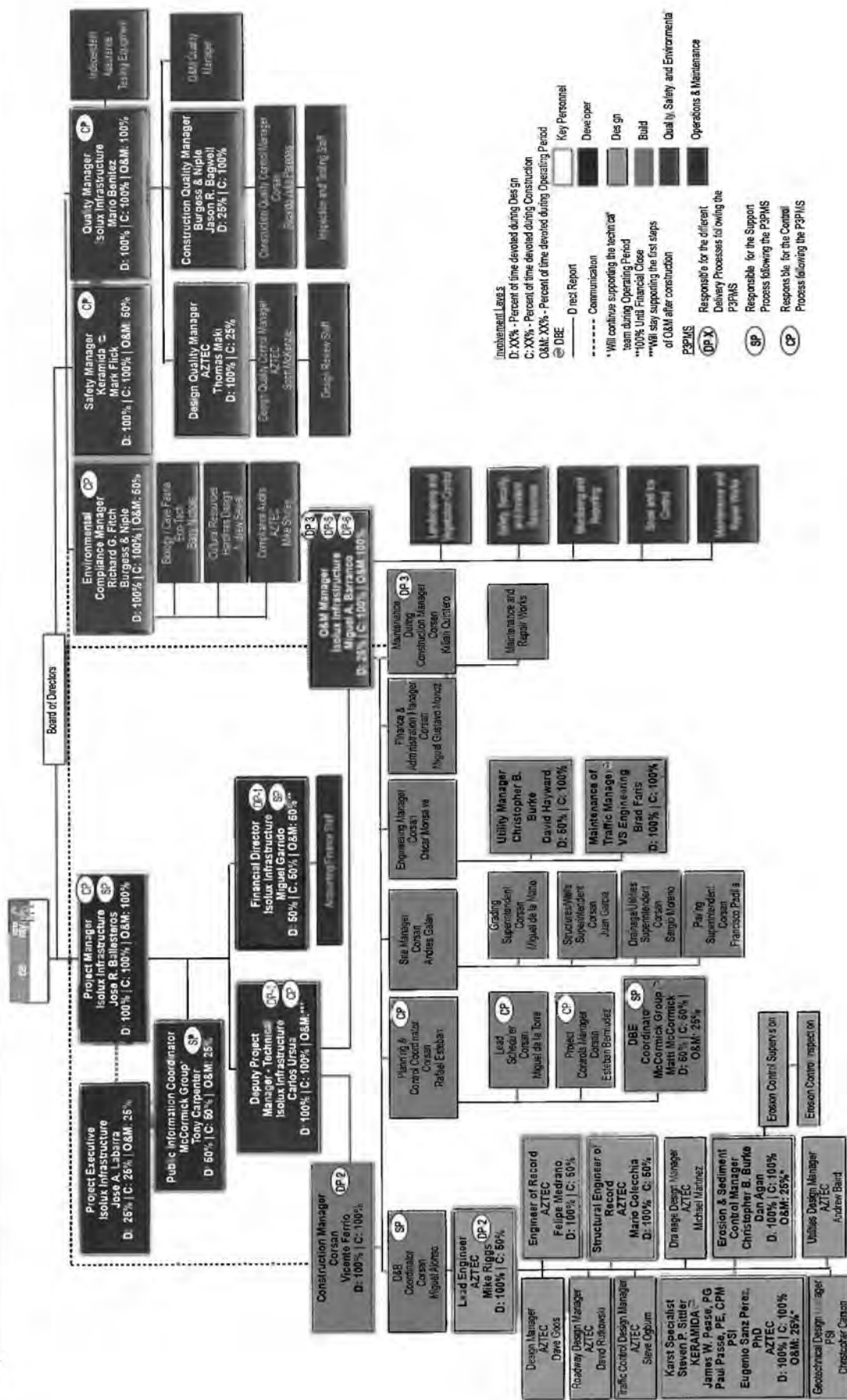


Figure 4.1.5: 169 DP Team Organization Chart

functional interfaces within our integrated organization. These lines of authority and functional interfaces are structured to facilitate the working relationships critical to a successful design-build effort, project finance and long-term O&M process. Each sub-organization and the interrelationships are described in further detail below:

Concessionaire

I-69 DP (the Concessionaire) will manage, be responsible for the project's success; and ensure efficient and effective communication, coordination and collaboration within the team (Please refer to **Volume 1, Appendix H-1** for resumes).

The Concessionaire lead and the single point of contact for IFA is José R. Ballesteros (Project Manager).



Jose R.
Ballesteros

José is a senior project manager with experience operating high profile and complex highways. Jose's experience in the US market includes serving as the lead for several procurement processes. He has also been the I-69 DP Project Manager and Proposer's Representative since the earliest stages of this PPA process. This continuity ensures consistency during transition from the procurement to project delivery.

Under our management approach, José is responsible for all facets of the concession, including finance,



Jose A.
Labarra

design-build, and O&M. He will report to the board of directors and will benefit from the advice of Jose A. Labarra, our Project Executive and former CEO of a \$1 billion DBFOM transportation project in Texas.

The Concessionaire will oversee all the D&C Work. A strong technical department, led by Carlos Ursua, Deputy Project Manager - Technical, will be responsible for monitoring the Design-Build activities and will ensure that the Team is fully compliant with all requirements of the PPA and the Design-Build contract.



Carlos
Ursua

Carlos will also oversee the O&M During Construction and will ensure coordination of main activities and tasks involved.

Once the construction has been completed, Carlos will lead the transfer of the facility from the Design-Build Team

to the Concessionaire and then remain for a short

Carlos will ensure a smooth transition for O&M from the Construction Period to the Operating Period



duration as the Deputy Project Manager – Technical supporting the first steps of the O&M After Construction.

The Financial department will be led by Miguel Garrido, Financial Director. . External advisors will assist in Project auditing and accounting.

The Concessionaire will develop and implement a final Public Involvement Plan (PIP), including public involvement outreach and education strategies designed to gain community understanding and acceptance of the project and its impacts. Our Public Information Coordinator, Tony Carpenter will work closely with the D-B Team and will be our liaison with the representatives of IFA, INDOT and local stakeholders, ensuring consistent messaging. He will coordinate public meetings, conduct outreach with relevant stakeholders and maintain communication materials including a project website, hotline and information brochures. The Concessionaire will also be responsible for:

- Management of the PPA and other contracts such as the Design-Build contract and the financing contract
- Oversight of the Design-Build Team
- Management of insurances

Design-Build



Vicente
Ferrio

Managed by Vicente Ferrio (Construction Manager) and overseen by Carlos Ursua (Deputy Project Manager – Technical), the Design-Build Team is responsible for meeting the all the Project's technical requirements and the on-time delivery of the Project. Vicente's team is a fully integrated Design-Build Team with a strong local component that understands the project goals and has been involved in the Project during the proposal phase. This will be the fourth major P3 project for Vicente and the fifth major P3 project for Carlos.

Miguel Alonso will serve as the Design-Build Coordinator. He will act as the liaison between design and construction to ensure that designs are constructible and compliant with the PPA requirements.



Our four Karst specialists, Steven P. Sittler, James W. Pease, Paul Passe and Eugenio Sanz and Dan Agan, our Erosion and Sediment Control Manager will continue supporting the technical team after the Construction Period, working directly for our O&M Manager.

The Erosion and Sediment Control Manager and a Karst Specialist will continue to serve the Team through the Operating Period



Operations and Maintenance



Miguel Barranco

The O&M Team will be led by the O&M Manager, Miguel A. Barranco. I-69 DP's approach to O&M is tailored to successfully conduct the services and obligations specified in the PPA. Most of the tasks will be self-performed by the Concessionaire who will hire the best professionals in the local market to fill key O&M roles. Some specific tasks which involve workload peaks, such as landscaping activities, pavement marking, and snow and ice control activities will be subcontracted to local specialized subcontractors. This approach is further detailed in **Section 4.3, Preliminary Operations and Maintenance Plan**.

The O&M Team will be responsible for all O&M work upon receiving NTP2 with some of the routine maintenance tasks during construction undertaken by the Design-Build Contractor (see **Section 4.3.1.2.e**)

Our O&M Team will also be in charge of Life Cycle Maintenance. When needed, a transparent, fair and compliant procurement process will be used to procure capable local contractors interested in performing the specialized work. Compliance with IFA/INDOT's requirements in terms of quality and safety will be the key drivers of the procurement process.

Quality, Safety and Environmental Compliance

A Sub-Organization, independent of the Design-Build and Concessionaire teams, will manage quality, safety and environmental compliance. This autonomy ensures that quality, safety and environmental compliance are not compromised due to production demands of the other team members.



Mario Benitez



Jason R. Bagwell



Tom Maki



Mark Flick



Richard Fitch

Our Quality Team will develop and enforce procedures, conduct audits and impose corrective actions that ensure all phases of the Project adhere to our Quality Management Plan. Mario Benitez, our Quality Manager, Jason R. Bagwell, PE, our Construction Quality Manager, and Tom Maki, our Design Quality Manager, will consult regularly with Jose R. Ballesteros and Carlos Ursua, informing them of quality conformance and easing continuous improvements. Once the construction has been completed, Mario will remain as Quality Manager for O&M.

Mark Flick (Safety Manager) will conduct safety trainings and audits; enforce our Safety Plan, safety regulations and requirements; and enforce safety-related corrective actions. Richard Fitch, AICP, (Environmental Compliance Manager) is responsible for all elements of our Environmental Compliance Plan, including ensuring that the design meets all environmental commitments, that monitoring during construction occurs and that all required mitigations are implemented.

Implementation of Greenroads™ Rating System



I-69 DP plans on submitting the I-69 Section 5 project for a Greenroads™ designation. Greenroads™ recognizes the sustainable attributes of a roadway project considering that sustainability is a system characteristic that reflects its capacity to support natural laws and human values. A Greenroads™ project is quantified by:

- Defining the features that contribute to sustainability on the project
- Providing accountability for sustainability
- Measuring and tracking specific sustainability goals over time
- Managing and improving roadway sustainability
- Encouraging new and innovative practices
- Promoting competitive advantage and other economic or market incentives for sustainability

- Communicating sustainable features to stakeholders in an understandable way, especially to the general public

More information can be found in **Appendix H-6**.

4.1.1.a.ii Key Personnel Involvement

The I-69 DP Team organization chart was presented in **Figure 4.1-5**. In this section we will further introduce our Key Personnel and their involvement in this project. The I-69 DP Key Personnel have been approved by the IFA and their relevant information is presented in **Figure 4.1-6**. Detailed resumes are included in **Appendix H-1**.

4.1.1.a.iii Qualifications and Experience of Task Managers

The I-69 DP Team will staff the Project using the I-69 DP Staff Selection Process establishes qualifications, responsibilities and required experience for each position.

Candidates will be recruited and selected based on the criteria shown in **Figure 4.1-7**. Examples of specific qualifications and experience required for selected Task Managers is shown in **Figure 4.1-8**.

Project-specific training will provided to ensure Task Managers exceed standards and keep developing and improving their skills.

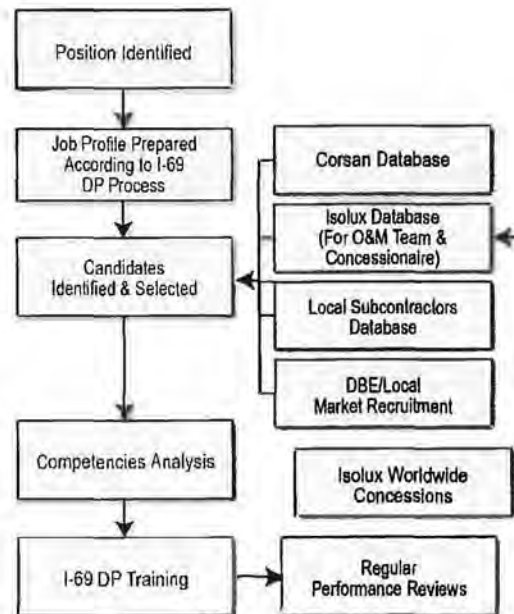


Figure 4.1-7: I-69 DP Team Project Staff Selection

Position	Qualifications	Experience	Name
DB Coordinators	Civil Engineer degree or equivalent	>8 years in construction/engineering including DB projects	Miguel Alonso
Design Managers	Registered Professional Engineer in Indiana	>8 years in construction/engineering in relation to specific area of activity	Dave Goos, David Rutkowski Michael Martínez, Steve Ogburn, Christopher Carson Andrew Baird
Site Manager	Civil Engineer degree or equivalent	>8 years in construction	Andrés Galan
Superintendents	Adequate experience and training	>8 years in construction >5 years in their area of responsibility (Grading, Paving, Structures, Drainage/Utilities)	Miguel de la Mano, Juan Garcia, Sergio Moreno, Francisco Padilla
Planning & Control Coordinator	Civil Engineer degree or equivalent	8 years in Project Controls Management and scheduling management	Rafael Esteban
Project Controls Manager	Civil Engineer degree or equivalent	>8 years in Project Controls Management	Esteban Bermudez
Lead Scheduler	Civil Engineer degree or equivalent	>8 years in Scheduling Management	Miguel de la Torre
Design QC Manager	Registered Professional Engineer in Indiana	>8 years in Design QC management	Thomas Maki
Construction QC Manager	Civil Engineer degree or equivalent	>8 years in Construction QC management	Jason R. Bagwell
Maintenance During Construction Manager	Civil Engineer degree or equivalent	>8 years in maintenance of highways and at least 2 projects maintained during construction	Killian Quintero
Engineering Manager	Civil Engineer degree or equivalent MOT Training	>8 years in utilities management and MOT	Oscar Monsalve
Finance & Administration Manager	B.S. Economics or Business Management	>5 years in financing and administration of construction projects including P3 projects	Miguel Gustavo

Figure 4.1-8: Task Manager Qualifications and Experience Requirements

69 Section 5

H&M Development Partners

69 DP TEAM KEY PERSONNEL		Key Responsibilities	Relevant Experience
CONSTRUCTION TEAM			
Project Executive	Jose A. Labarra	Advise the Project Manager. Ensure that adequate resources are devoted to the Project	<ul style="list-style-type: none"> CEO for a US DBFOM transportation project (SH130 in Texas) Project Executive for several Isotex DBFOM transportation projects
Project Manager	Jose R. Ballesteros	Overall lead and management of the Project. Point of contact with IFA and INDOT. Manages the I-69 DP Team. Responsible for fulfillment of the PPA contract and management of the Concessionaire's contracts. Reports Project progress and performance to IFA, lenders and shareholders	<ul style="list-style-type: none"> CEO for the A-4 Expressway P3 project, a very similar project to the I-69 Section 5 Project Manager and member of the Board of Directors for an availability payment project (Abal)
Deputy PM - Technical	Carlos Ursua	Oversee the DB Team and the O&M Department During the Construction Period. Coordinate O&M and Construction activities, integrate O&M into construction. Monitor the fulfillment of the contractual schedule and the other Design-Build contract requirements by the DB Team	<ul style="list-style-type: none"> CEO for the Monterrey Saltillo DBFOM P3 transportation project during its construction COO for the AP-41 DBFOM P3 project, in charge of the O&M department Deputy Project Manager - Technical for two projects NH-6 and NH-8 (India)
O&M Manager	Miguel A. Barranco	Hires the O&M staff in the local market and lead the O&M Department. Lead the Lifecycle process in coordination with Jose R. Ballesteros	<ul style="list-style-type: none"> O&M Manager for an Isotex DBFOM transportation project (Monterrey-Saltillo)
Financial Director	Miguel Garrido	Main objective: Reach of the financial close. Manage financial model, lenders and underwriters expectations and reporting. Control the concession finances and coordinate and manage financial accounting and reporting	<ul style="list-style-type: none"> Financial manager for the bonds issuance for Monterrey-Saltillo and Cachoera Paulista
Public Information Coordinator	Anthony Carpenter	Provide ongoing information to the public concerning the development, construction, operation and maintenance of the Project	<ul style="list-style-type: none"> I-69 Section 6 Tier 2 (INDOT) I-465 Accelerate 465 Reconstruction Project (INDOT)
DESIGN TEAM			
Quality Manager	Mario Benitez	Ensures that the overall quality system is established, implemented, and maintained. Produces regular performance reports on the quality system to I-69 DP Team's management for review and improvement. Supervisees directly the efforts of the Design Quality Manager and Construction Quality Manager	<ul style="list-style-type: none"> Quality Manager for an Isotex DBFOM transportation project (Monterrey-Saltillo)
Construction Quality Manager	Jason R. Bagwell, PE	Lead the quality assurance, surveillance and auditing, and continuously improve quality management. Manage IFA QA feedback. Assess, monitor and report compliance with relevant law and Conson policies and objectives. Manage and coordinate the QA reporting process	<ul style="list-style-type: none"> An INDOT-certified inspector
Design Quality Manager	Thomas Maki, PE	Manage design quality compliance. Coordinate design quality with construction team. Conduct project. Report to the Quality Manager and be functionally independent from the production of the Design Documents. Identify and report Nonconforming Work, track, monitor, and report on the status of outstanding design-related nonconformance reports	<ul style="list-style-type: none"> Thorough understanding of INDOT standards through work on five similar projects in the state I-95 Managed Lanes, P3, Ft. Lauderdale, FL US 290 program management project (\$2B)
Safety Manager	Mark Flick	Develop, maintain and manage health and safety activities. Ensure safety exceeds expectations of IFA and the Concessionaire. Audit, inspect, train, manage, and continuously improve in all aspects of safety. Responsible for the approval of the Safety Plan and Safety Standards	<ul style="list-style-type: none"> Access road construction for installation of large propane storage vessels. Raleigh Durham Airport - Concourse A Renovation
Environmental Compliance Manager	Richard Fitch, AICP	Develop, deploy and review and maintain environment protection and sustainability activities for I-69 DP. Deliver environmental standards exceed expectations of IFA, stakeholder and environmental bodies. Provide advice, training, and guidance on environment and sustainability issues during design and construction. Responsible for Developer's compliance with all the environmental commitments and conditions of Environmental Approvals required for the Project	<ul style="list-style-type: none"> Currently Director of the NEPA/Ecological/Phase I ESA Section Completed more than 100 hazardous waste screenings. Phase I ESAs, Phase II ESAs, and remediation plans for transportation-related projects including 13 INDOT/FTA Transit systems
CONSTRUCTION TEAM			
Construction Manager	Vicente Ferris	Accountable for delivery of the DB Contract, project management and team direction, sing's point of contact for the Concessionaire, Deliver Conson objectives, satisfy IFA and stakeholder requirements, take responsibility for Project safety. Report Project progress and performance	<ul style="list-style-type: none"> Construction Manager with Conson in three large Isotex DBFOM transportation projects such as Monterrey-Saltillo in Mexico and Via Bahia in Brazil
Lead Engineer	Mike Riggs, PE	Oversee the development of the design and compliance with PPA and technical requirements. Ensure timely flow of design information and resolve design issues. Coordinate construction team input through Design-Build Coordinator	<ul style="list-style-type: none"> Design Coordinator for South Fraser Perimeter Road DBFOM P3 in British Columbia, Canada Discipline leader for US 60, SR 202, and I-17 DB projects in Arizona Discipline leader for SR 500/Thurston Way DB project in Washington State
Construction Engineer of Record	Felipe Medrano, PE	Provide design, engineering or construction certifications with respect to the Project	<ul style="list-style-type: none"> Project Engineer for several major highway improvement projects such as the McDowell Road in Lehi - Mesa Drive to Gilbert Road, Salt River Pima - Maricopa Indian Community, AZ
Structural Engineer of Record	Mario Colechia, PE	Provide Structural certifications with respect to the Project	<ul style="list-style-type: none"> Project Engineer for US-36 Managed Lanes Phase 2 DBFOM P3 project in Colorado
Utility Manager	David Hayward, PE	Principal contact for all Utility-related Project activities. Coordinate and work with Utility Owners. Information of construction schedules, changes to the Utility Adjustment Plans. Ensure Utility Owners are involved in making the decisions that affect their own Utilities.	<ul style="list-style-type: none"> Registered Indiana Professional Engineer Bridge Design Lead and Engineer of Record for I-10/SR303L Traffic Interchange in Arizona Bridge Design Lead and Engineer of Record for four bridges in Arizona
Karst Specialists	Steven Sittler, Eugenio Sanz, Paul Passie, James Pesse	Responsible for Reasonable investigation karst features. Responsible for the preparation of design scenarios dependent upon karst location	<ul style="list-style-type: none"> Licensed Indiana PE State Road 46 Corridor Improvements, Columbus, IN (INDOT) Rocky Ford Road, Columbus, IN Broad experience as geotechnical engineers
Erosion and Sediment Control	Oan Agan, OPESC, CESSWI	Comply with all environmental/erosion and sediment control. Established Quality control checkpoints at stages of the construction progress. Responsible for developing Erosion Control Plans	<ul style="list-style-type: none"> City of Indianapolis Infrastructure Inspection
Maintenance of Traffic (MOT)	Brad Faris,	Coordinate all MOT activities and changes to access with emergency service providers, school transportation officials, and all affected local public agencies. Coordinate all construction traffic impacts with IFA's PIP Manager and TMP team, as well as Developer's Certified Worksite Traffic Supervisor (CWTS) who is responsible to monitor daily MOT activities, identify and resolve approval for all necessary temporary traffic signals.	<ul style="list-style-type: none"> I-69 Interstate Rehabilitation - Grant and Huntington Counties, IN (INDOT) R 65 Intersection Improvement (Owensville) - Gibson County, IN
O&B Coordinator	Matti McCormick	Lead liaison with Disadvantaged Business Enterprises (DBEs) Ensure national goals are exceeded. Lead liaison to coordinate diversity and SBE issues with IFA and the community	<ul style="list-style-type: none"> I-69 Section 6 Tier 2 (INDOT)
Figure 1-16: I-69 DP Key Personnel Function and Responsibilities (SUMMARY) Find the complete table in Appendix H1			<ul style="list-style-type: none"> I-465 Accelerate 465 Reconstruction Project (largest reconstruction project in INDOT history)

I-69 DP Team Member	Current Workload (Annual Capacity)	Current Backlog Projected Workload Compromised (2014)	Available Annual Capacity (2014)
AZTEC-TYPSA JV			\$58M
Corsan			\$300M
Gradex			\$70M
Force Construction			\$120M
E&B Paving			\$188M

Figure 4.1-9: I-69 DP Team Current and Projected Workload and Backlog

4.1.1.a.iv Project Team Current and Projected Workload and Backlog

Isolux, Corsan, and AZTEC-TYPSA have significant experience working on very large projects simultaneously. Combining the Team's international experience and local resources of personnel and equipment, the I-69 DP Team is fully prepared for safe, on-time delivery of the project. The I-69 DP Team's current and projected workload and backlog is detailed in Figure 4.1-9.



One of the main points of our proposal is a strong local presence. Our three major subcontractors (Gradex, Force

Construction, and E&B Paving) are based in Indiana and have extensive experience working with INDOT as well as with each other on various other highway projects throughout Indiana. Through these three firms and other local subcontractors to be added as the Project progresses, our Team brings an important local component including labor, equipment, plants and materials. Relevant information is shown in Figure 4.1-10.

Additionally, seven of our design consultants (B&N, CBBEL, VS Engineering, KERMIDA, PSI, The McCormick Group, and Eco-Tech) have offices in Indiana, employing well over 175 people.

4.1.1.b Internal Organization Systems

To guarantee the successful delivery of the Project, our Internal Organization Systems combine:

- An agile decision-making process
- Clear lines of communication within I-69 DP Team
- Proactive and harmonious communications with IFA/INDOT and other stakeholders
- An experienced and recognized Public Information Coordinator
- A robust Public Involvement Plan

4.1.1.b.i Team Decision-Making Process



As previously described in Section 4.1.1.a, the I-69 DP Team organization is simple and clear. Experienced personnel have been assigned to the various Project tasks and elements.

Local Contractor	N. Offices in Indiana	Total Employees and Employees Available for this Project	Pieces of Owned Heavy Equipment	Access to Local Suppliers and Quarries
Gradex	1 office with numerous temporary project field offices	Total: more than 400 For this Project: As needed	<ul style="list-style-type: none"> • More than 300 • 45 – Dozers, 40 – Excavators • 40 – Scrapers • 14 – Loaders • 13 – Backhoes • 10 – End Dumps • 27 – Compactors Plus over 100 other misc. pieces	Access to all local quarries and borrow pits as a customer. Close relationships with many local suppliers and material companies.
Force Construction	1 office with numerous temporary project field offices	Total: more than 250 For this Project: As needed	More than 100 including mass earthmoving, hoisting, hauling, paving, soil compaction, material handling, fine grading as well as hundreds of small-engine pieces of equipment.	Close relationships with many local suppliers and material companies.
E&B Paving	10 offices	Total: more than 750 For this Project: As needed	13 permanent asphalt plants, 5 portable asphalt and concrete plants strategically located throughout Indiana	Close relationships with many local suppliers and material companies.

Figure 4.1-10: I-69 DP Team Local Contractor Capabilities

In addition, many of the main companies forming the Team have experience working together. Most important, the Equity Member (Isolux) and the Design-Build Contractor (Corsan) are related companies and the O&M work will be self-performed by the concessionaire. This tight organization avoids conflicting interests within the Team, accelerates the decision-making process and mitigates the risk of dispute.

Having a single Design-Build Contractor supported by local subcontractors gives the I-69 DP Team a clear advantage, due to the absence of conflicting interest. Our decision-making process is more agile, concise and precise. The I-69 DP Team Task Managers at every level are aware of their autonomy to make decisions. Decisions are made and issues are resolved quickly at the lowest possible level where implications of the issue are best recognized. Only if these concerns cannot be resolved are they escalated to the next level. This system ensures that issues are addressed quickly, thereby minimizing the risk adverse impacts on cost, schedule and quality. We use a formal, Project-specific dispute resolution process that anticipates the potential impacts that can occur between disciplines regarding such elements as safety, cost and schedule. All decisions related to design and construction work will be made within the DB Team. The Concessionaire's staff, principally Carlos Ursúa (Deputy Project Manager - Technical), will be in charge of overseeing and supervising the Design-Build Team but will not get involved in the decisions related to Design-Build except in the

unlikely event of Change Orders or Change Requests. In regards to O&M decision-making, while most of the decisions will be resolved at or below the O&M Manager level, those that cannot be resolved will be escalated to Jose. In the event an internal dispute occurs, our simple vertical dispute process will be used to resolve the matter at the lowest level possible using our dispute resolution and decision-making hierarchy process. The I-69 DP Team's dispute resolution and decision-making hierarchy process is illustrated in Figure 4.1-11.

4.1.1.b.ii Internal Communications

The I-69 DP Team's internal communication process is designed to encourage a continuous flow of information with clear and open lines providing both lateral and vertical organizational communications. Formal lines of communication and direct reports between management personnel within the I-69 DP Team are established by our Team organization. These lines of reporting and communication apply both across and within sub-organizations facilitating effective communication throughout the entire Team.

Key personnel are responsible for implementing effective lines of communication within their specific task group. Cross-discipline and cross-organizational communications are encouraged for the task groups and other integrated activities. The vast majority of the Team will be co-located which facilitates communication, coordination and efficiency. The I-69 DP Team Project Office in Bloomington will be the center of operations and production.



Figure 4.1-11: I-69 DP Dispute Resolution and Decision-Making Hierarchy

Figure 4.1-12 provides a listing of the key internal meetings. Our protocols require that all meetings have clear agendas and conclude with recording and assignment of action items (with due dates) to responsible parties. Minutes of meeting will be posted in our Digital Central Library (DCL).

4.1.1.b.iii Interfacing with IFA

The I-69 DP Team will continually interface with IFA and INDOT, their consultants and any other stakeholder such as federal, state and local agencies, the Bloomington MPO, City of Bloomington, Morgan County,

Monroe County, Town of Ellettsville, City of Martinsville and local police and fire departments. The I-69 DP Team commits to maintain transparency and clarity of communications with all stakeholders throughout the entire term of the Project. Periodic meetings will be conducted with stakeholders and I-69 DP management personnel will be open to any meeting or communication requested by IFA/INDOT or other stakeholders. Our main goal is to develop proactive and harmonious communications that will benefit the Project. **Figure 4.1-13** shows how we will interface with the IFA for this project.

For efficient Project delivery, I-69 DP Team will provide facilities as required in Section 1 of the Technical Provisions for IFA and INDOT in the Project and Field Offices.



4.1.1.b.iv Public Information and Community Outreach Qualifications and Experience

Public Information and Community Outreach will be provided by The McCormick Group which is a certified Indiana DBE firm with over two decades of experience. They have extensive experience in community relations and public involvement project leadership for transportation projects, including work on other Sections of the I-69 corridor. The qualifications of The McCormick Group are outlined in **Appendix H-4**.

In the execution of this Project, The McCormick Group will allocate the necessary resources to meet the proposed schedule, budget and client expectations. The McCormick Group has assigned Tony Carpenter to lead the PIP effort. He has worked on multiple transportation projects leading and providing a full range of public involvement services.

Of note, The McCormick Group planned and executed an Accelerate 465 Information Fair which received over one million free media exposures in a two day period. McCormick Group has also served in I-69 Section 6 Tier II



4.1.1.b.v Public Involvement Plan (PIP)

Among the factors most critical to the success of this project will be the ability to work with, receive input and foster cooperation through consensus-building among a large and diverse group of stakeholders. Our approach will be a proactive, structured, yet fluid process of public involvement.

In a project with diverse stakeholder groups, it is critical that an execution protocol for public involvement be established and consistently followed. From our experience, public involvement has evolved from single meeting management to an integrated discipline, requiring an understanding of local markets and synergistic management of public involvement techniques. We understand from experience that effective meetings, clear and concise information materials and continual information flow are required for successful PIP execution.

Our technical approach will be multidimensional. With IFA input and approval, we will finalize the PIP. With stakeholder/ target audiences identified, an information fact sheet will be developed for public information and placed on a website link for public access. The specifics of our approach are as follows:

- We will identify target audiences by categories of responsibility.
- We will develop communication tools, including web based and print as a definition of the project's goals, scope, timeline, expected outcomes, FAQs and contact follow-up.
- We will plan and execute public meetings as required, in the initial launch phase to educate and receive input regarding public perceptions and Project goals and later in the Project to receive feedback on the progress.
- We will establish an ongoing presentation service to participate in neighborhood and special stakeholder meetings throughout the duration of the Project.
- We will develop a monthly information update through an e-distribution to deliver a central message and keep the public pro-actively engaged. PI representatives will serve as resource contacts to maximize information exchange.
- We will identify key stakeholders) and utilize them as information sources for outreach to their respective constituencies.

Meeting	Key Attendees	Purpose/Focus	Frequency
Play-of-the-day Pre-activity	Construction Management Staff/workforce Management Staff/workforce	Five minute recap by foreman to crew of day's activities and important features and safety components. Before starting a construction activity, the work plan will be thoroughly presented to crew performing the work as needed.	Daily during construction As needed
Task Force	Deputy Project Manager - Technical, Construction Manager, O&M Manager and Lead Engineer	Re-organizing work procedures, OC elements and safety. DB Team and O&M Department to integrate and build constructability into the design. Ensure the design takes into account the whole life of the project.	Weekly during design
Design Coordination	Lead Engineer, Engineering of Record, Design Unit Managers, DB Coordinator, Construction Manager, Construction Superintendents, DB Coordinator, Quality Manager, Lead Engineer, Engineer-of-Record	Coordination, Communication of design progress. Resolution of potential conflicts between various disciplines. Discussion of schedule, safety and quality issues.	Weekly during design Weekly during construction
DB Integrated Schedule	Construction Manager, Lead Engineer, DB Coordinator and other relevant DB Team Members	Coordination of all DB Work, including sub-contractor activities. Review overall schedule, cost and compliance with project goals.	Weekly during construction
Quality management	Quality Manager and quality team	Ensure that all the components of the quality service team are communicating on project issues, schedule and re-ordering requirements associated with the overall quality plan and sub-plans.	Weekly during design and construction Monthly during Operating Period
O&M During Construction	Deputy Project Manager - Technical, O&M During Construction Manager and O&M Manager	Manage interfaces and coordinate O&M in sections under construction and in sections not under construction.	Weekly during construction
Coordination	Schedule of O&M Activities and interfaces between workforces		Weekly during Operating Period and construction
O&M Planning	Project Manager, O&M Manager and O&M task managers	Monitor overall progress versus schedule, project objectives and targets; address/escalate any issues as necessary.	Every Two Weeks during construction
Progress Review	Project Manager, Deputy Project Manager - Technical, Construction Manager, Lead Engineer		Weekly during design and construction Monthly during Operating Period
Risk Management	Project Manager, Construction Manager, Lead Engineer, O&M During Construction Manager and O&M Manager	Identify new risks, follow risk evolution and update the risk matrix.	Weekly during design and construction Monthly during Operating Period
Meeting after Incident	Project Manager, Construction Manager, Safety Manager and O&M Manager	Review incident, lessons learned and to make changes to incident response procedures as needed.	Within 2 days of any incident
Board of Directors	Project Manager, members of the Board of Directors from Isotex	Review of the overall project performance, compliance metrics and reports from the Project Manager and the Quality Manager. Strategic decisions making.	Monthly during construction, Quarterly during Operating Period

Figure 4.1-12: I-69 DP Team Key Internal Meetings

Stakeholder	Key Personnel	Meeting Communication Methods
IFA	Project Manager Quality Manager	I-69 DP will provide a written report on progress and performance every two months, and meetings with IFA to plan feedback. To reinforce the independence of the quality team, Luis J. Leon, our Quality Manager, will be the primary point of contact to IFA for all issues relating to our Quality Management Plan.
IFA (in issues related to quality)		Quarterly meetings held by IFA/INDOT. To discuss traffic incidents, resolutions and procedures.
Traffic Incident Management Meeting	Project Manager, Safety Manager	The Department and consultants will have the option to be included in relevant design review and workshops to ensure a closely coordinated review process.
The Department/ Consultants for DB Issues	Construction Manager, Lead Engineer	I-69 DP will establish monthly meetings with the appropriate Department representatives to discuss O&M During Construction and O&M After Construction, including future lane closures; the maintenance activities of the previous month, Planned Maintenance, incidents and any other pertinent information.
The Department for O&M Issues During and After Construction	Deputy Project Manager - Technical, O&M Manager, O&M During Construction Manager	Early consultation meetings to ensure potentially affected parties are identified and aware of the risks. Advanced warnings provided via the Project Website, local media and on site notice boards. A phone number and email address is provided to which queries, concerns or complaints can be addressed.
Residents near the construction site	Public Information Coordinator	Interface with environmental agencies to ensure all requirements, including testing and remediation approvals are met. Establish key points and methods of contact; develop and obtain approval for all project emergency plans. Monthly updates communicate potential risks.
Environmental Agencies Emergency Services	Environmental Compliance Manager Safety Manager	I-69 DP uses ongoing communication through informal contact and weekly meetings to mitigate impacts on the traveling public, and ensure safety.
Transportation Agencies	MOT Manager	Identify and manage all interfaces and eliminate risk of impact on utilities. Communication is particularly important where any services are relocated.
Utilities	Utilities Manager, Lead Engineer, Design Unit Managers	Consultation activities, regular meetings, third-party contact details, and inform public of upcoming service disruption.
Third Parties	Public Information Coordinator	

Figure 4.1-13: I-69 DP Team Communication Methods

The combination of proactive grass roots, web based, key stakeholder and message continuity through multiple outreach will define our efforts. We will work to create and maximize opportunities to inform, educate and build a successful public involvement effort. The PIP is further described in [Appendix H-5](#).

4.1.1.b.vi Approach to Project Documents and Information

A significant volume of data will be generated, processed and shared within the Team and with the IFA/INDOT on a daily basis over the life of the Project. The Project information management approach includes the processes required to ensure the appropriate and on time generation, collection, distribution, storage and the final disposition of the project information necessary for success. The I-69 DP Team will control this information in our electronic document management system known as the Digital Central Library (DCL).

Medium for Maintaining Documents

All records and documentation produced during the project including but not limited to memos, reports, minutes of meetings, letters, drawings, diagrams, and contracts will



Figure 4.1-14 The McCormick Group is experienced in conducting public general meetings.

be securely stored and controlled digitally until the final acceptance of the project. The DCL will be organized and assembled to store all the information produced on digital media, and will be updated with any changes made. Information will be also stored in paper format. All the documentation generated by the project will be coded and maintained in storage where it can be accurately searched and easily.

A record of changes during the Project will be used so their impact in terms of time, costs and risks will be communicated to appropriate parties. A record of incidents will also be used to document and monitor the resolution thereof. Lessons learned on the resolution of incidents will be documented and distributed so that they become part of the historical database for both the Project and the I-69 DP Team members. Records of entry/exit of all documents will be maintained. At all stages of construction, records will be available to the IFA. Upon the start of the

Operating Period all documents will be transferred to the I-69 DP O&M Team.

Electronic Format

Documents to be distributed for information and review only will be stored as PDF files, preventing unauthorized changes. Original and editable versions of documents are accessible only by authorized personnel. Documents are stored in the most relevant format including Microsoft Office, Primavera P6, MicroStation or other formats, as appropriate.

Security and Backup

The I-69 DP DCL shall comply with the following security and backup for project documentation:

- Secure access to dedicated documents, procedures and forms for each project management process will be provided online via a fully interactive version of the P3PMS, linked to the DCL
- Specific authorization of access will be implemented only to authorized personnel
- User registration and changes
- Firewall
- Access via Internet and/or VPN
- Data will be backed up to a secure cloud provider, where it is encrypted
- Secure and redundant off-site data storage location to allow for disaster recovery.

4.1.2 Preliminary Baseline Schedule

Design and Construction Baseline Schedule

The I-69 DP Team has developed a Preliminary Baseline Schedule through an iterative process. Alternative Work Breakdown Structures (WBS) were developed and reviewed to create a preliminary outline that would accurately reflect the entire project scope and provide a sensible and accurate tool for planning the project through completion.

The IFA has provided a detailed outline of requirements that will meet the expectations of all local stakeholders. Our schedule incorporates critical requirements to essentially provide a summary checklist for IFA and I-69 DP Team as we meet each of the requirements for obtaining Commencement of Design Work, NTP 1, Financial Close, NTP2, Commencement of Construction, Substantial Completion, and Final Acceptance. These significant deadlines are shown on [Figure 4.1-15](#) and listed on [Form N](#).

EXHIBIT 2-F

PRELIMINARY DESIGN-BUILD PLAN

[attached]

4.2 Preliminary Design-Build Plan

4.2.1 Design-Build Technical Solutions

The I-69 DP Team has developed a preliminary Design-Build Plan (DBP) for the I-69 Section 5 Project that is tailored to provide the State and its residents with the best value, quality, innovation, and sustainable solutions. The I-69 DP Team's approach incorporates technical solutions with innovative features that exceed the contract requirements, while delivering IFA a world-class Project. Our integrated team combines local, national and global knowledge and experience.



The I-69 DP Team's DBP is built on the principles of Quality, emphasizing 'Safety First' and 'Right the First Time'. Our

development processes are strengthened through vertical integration. Isolux Infrastructure (Equity Member) and Corsan (DB Contractor) are related companies and have extensive experience working together. The I-69 DP Team will be formed to self-perform O&M, both during and after construction.

The I-69 DP Team is led by our Project Manager; Jose R. Ballesteros. Jose has managed many successful projects throughout the world. He has the proven skills for understanding all aspects of the Project including construction, operations, life cycle maintenance, and routine maintenance including snow and ice services.

Our DB Team, led by the Construction Manager, Vicente Ferrio, understands the established Project expectations and goals. We have developed the DBP to exceed IFA's and the public's needs and expectations.

4.2.1.1 Roadway Elements

This Project will convert approximately 21 miles of State Route (SR) 37 in Morgan and Monroe Counties, Indiana, into an interstate facility which will be designated as I-69. As part of the conversion, the existing partially-controlled limited access facility will be upgraded to have fully controlled access and will include four new interchanges at Fullerton Pike, Tapp Road, Sample Road and Liberty Church Road. The improvements also include the construction of four grade separated crossings at Rockport Road, Vernal Pike, Kinser Pike and Chambers Pike. After construction

is complete, access to I-69 will be provided via new parallel services roads to locations where existing or new Interchanges are located.

The south terminus of Section 5 is located at the intersection of That Road/SR 37 in Monroe County just north of the I-69/SR 37 interchange (currently being constructed as part of the Section 4 project). The corridor proceeds to the northeast through northern Monroe County into southern Morgan County. The north terminus of Section 5 is the south bridge approach of the Indian Creek Bridge which is located south of the existing SR 39/SR 37 interchange within the Section 6 project limits. Within the I-69 Section 5 corridor, existing SR 37 runs along the west side of the City of Bloomington, through rural Monroe and Morgan counties, ending south of the City of Martinsville. The Project is located in the Indiana Department of Transportation's Seymour District and is part of the I-69, Evansville to Indianapolis, corridor. Figure 4.2-1 illustrates the I-69 DP Section 5 Project Limits and Construction Zones. For purposes of reference and analysis,

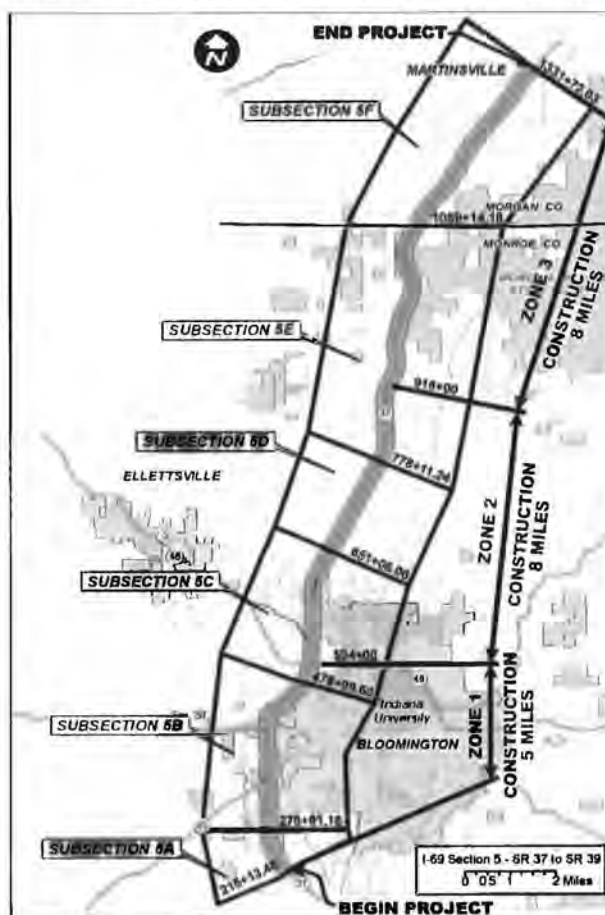


Figure 4.2-1: I-69 Section 5 Project Limits and Construction Zones.

the I-69 Section 5 corridor was divided into six (6) subsections. Each subsection was designated with a "5," representing Section 5 of the I-69 EIS Tier 2 corridor, and a letter – 5A, 5B, 5C, 5D, 5E, and 5F. Subsections were deemed necessary to meet varying topography, urban/rural design criteria, design speeds and jurisdictional differences.



The I-69 DP Team have reviewed the RFP documents in great detail and through months of refinement are providing IFA/INDOT with an improved construction plan that will better serve the public interests and increase construction efficiencies through a well-organized and easier to maintain facility. In creating our improved plan, we developed a number of Alternative Technical Concepts (ATCs). The IFA ultimately approved seven of them (six of which will be implemented). The I-69 DP Team also developed added value items which, along with the approved ATCs, are shown in Figure 4.2-3.

4.2.1.1.a Construction Staging & Traffic Control

4.2.1.1.a.i Traffic Management and Control and Sequencing



The I-69 DP Team has developed detailed Transportation Management Plans (TMP), which will ensure a safe, continuous operating roadway for the traveling public and limit disruptions during construction. The TMP includes elements listed in Figure 4.2-2.

Traffic Management Plan Elements

- Temporary Traffic Control Plan with MOT plans & traffic analysis
- Temporary pavement design and unrestricted access details for all businesses & residents
- MOT phase change procedures with clear responsibilities and processes for temporary signage markings that provide for safe traffic diversions with limited disruptions
- Work zone access, truck routes, & haul route maps to allow for safe ingress/egress for personnel and traveling public
- Detour routes & project closures to be approved by IFA
- Traffic Operations Plan describing key personnel & responsibilities
- Emergency Plan & coordination with emergency responders
- Coordination meetings with adjacent projects, transit operators, utility owners, & local public agencies
- Coordination with Public Involvement Plan & public communication implementation
- Maintenance of roadway drainage during construction, including temporary drainage facilities as needed

Figure 4.2-2: Traffic Management Plan Elements

With approval of I-69 DP's ATC to allow the SR 45/2nd Street Interchange to remain in its current configuration, Bloomington residents will have an unencumbered route across SR 37 for the duration of the project

4.2.1.1.a.ii Conceptual Construction Staging Diagrams

The I-69 DP Team's conceptual construction staging is shown in Figure 4.2-1. Zone 1, construction will include all of Subsections 5A and 5B ending just north of the SR 46 overpass. Zone 2 will start just north of SR 46 and continue to a point one-half mile south of Chambers Pike. Finally, Zone 3 will construct the remainder of the project from Chambers Pike to the northern project limits. In order to maximize mobility during construction, there will be no restrictions to consecutive intersections on SR 37. To accommodate this mobility initiative, the Fullerton Pike interchange will be constructed in Zone 2, allowing all other Bloomington interchanges to be completed in 2014 and 2015.

The I-69 DB Team developed detailed construction staging and MOT plans to ensure all components of the Project are coordinated. Staging and MOT was developed jointly by the Design Team and the Construction Team in intensive focus meetings.

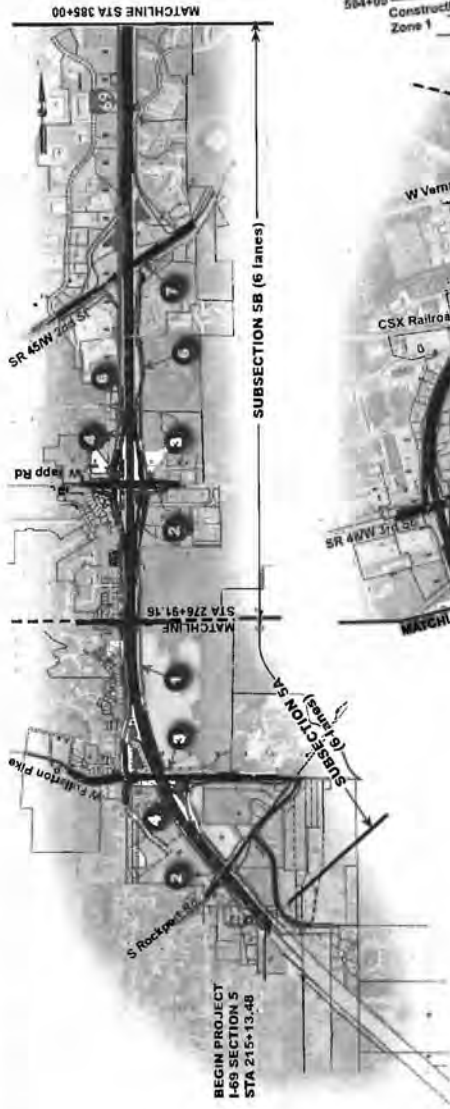
Detailed MOT staging roll plots are included in the Volume 2 Appendices (H-2: Technical Drawings)

4.2.1.1 a. iii Access to Business and Residential Properties



The sequencing of all construction activities will prioritize accessibility to all existing SR 37 at-grade access points by ensuring that an adjacent at grade intersection is kept fully operational and by opening and maintaining alternative access routes to both sides of SR 37. In many cases, the alternative access route will require the construction of either permanent or temporary access roads. These connections will be fully operational prior to the closure of the affected at-grade intersection.

Key ATC/Added Value Technical Solutions	
1	Pavement structural section improvements
2	Lower profiles of cross road to reduce earthwork
3	Reduce/eliminate median width on cross roads
4	Use flush median across the bridge
5	Raise Arlington Bridge in lieu of reconstructing mainline pavement (ATC 8)
6	Eliminate CD road between Tapp Road and SR452nd St. (ATC 2)
7	Retain Existing SR452nd St. TI Configuration (ATC 10)
8	Replace NB Mainline Bridge over Little Indian Creek



ATC/Added Value Technical solutions	
ATC 2	Eliminate CD Road between Tapp Road and SR 452nd Street Interchanges
ATC 9	Raise Arlington Road Bridge in-lieu of Reconstructing Mainline Pavement
ATC 10	Retain Existing SR 452nd Street Interchange configuration
ATC 12	Roundabouts at Liberty Church Road Interchange (not implemented due to additional ROW requirements)
ATC 18	Use of Wied Barrier and Gravel In-lieu of Seeding Adjacent to Cable Barrier to Increase Workers Safety and Minimize O&M costs
ATC 22	Placement of O&M Facility
ATC 23	Added Value 1
Added Value 1	Change Profile of S-Line Roads to Reduce Earthwork
Added Value 2	Develop Compil and Alternative Pavement Structural Sections to reduce costs

Figure 4.2.3: I-69 DP ATCs and Value-Added Solutions

ATC/Added Value Technical Solutions	
1	Pavement structural section improvements
2	Lower profiles of cross road to reduce earthwork
3	Reduce/eliminate median width on cross roads
4	Use flush median across the bridge
5	Raise Arlington Bridge in lieu of reconstructing mainline pavement (ATC 9)
6	Eliminate CD road between Tapp Road and SR45/2 nd St. (ATC 2)
7	Retain Existing SR45/2 nd St. TI Configuration (ATC 10)
8	Replace NB Mainline Bridge over Little Indian Creek

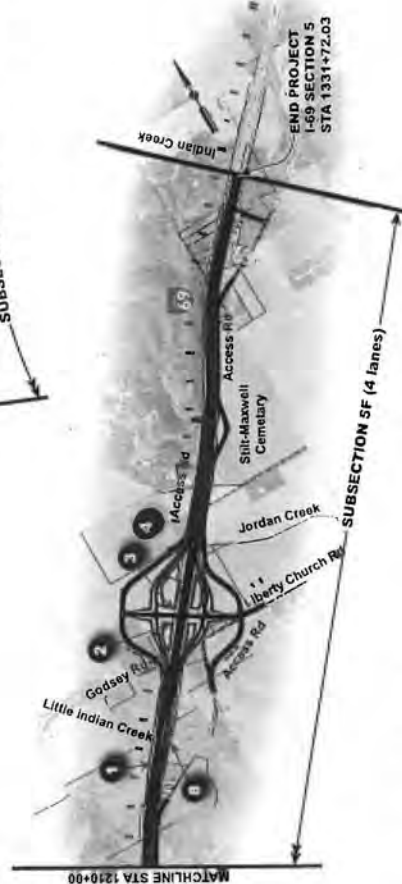
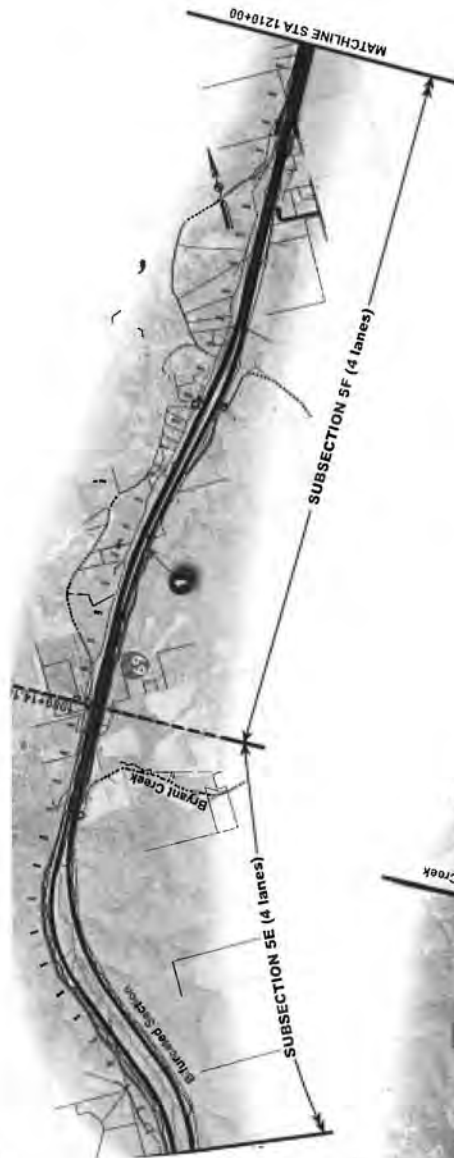


Figure 4.2.3: I-69 DP ATCs and Value-Added Solutions (continued)

The I-69 DP Team's PIP will include specific procedures for interacting with local residents, businesses and other stakeholders near each interchange, including the Fern Hills National Conference, Tapp Road Medical Park, Monroe County Fair and Indiana University.

The I-69 DP Team will ensure that local stakeholders are informed of potential construction impacts throughout the duration of Interchange construction. Our intent is to build on the INDOT "Kitchen Table Meeting" (KTM) process used for land acquisition. We will hold preconstruction and construction update meetings where local access plans will be presented and discussed in detail for each Interchange construction staging phase. These measures are in addition to our proactive public relations approach to maintain public trust and integrity. Figure 4.2-4 summarizes this proactive approach.

Proactive Public Relations

- Sponsor local pre-construction and update meetings
- A toll free hotline will accept public feedback which will be discussed at weekly progress meetings
- An Emergency Response Plan will be developed in coordination with police and fire departments
- Monitor local roadways used for alternative access – maintain driving surface
- Portable Variable Message Signs will inform drivers of upcoming traffic control changes and detours
- Detours and closures will be publicized in local newspapers and on local TV and radio stations

Figure 4.2-4: I-69 DP Team's Proactive Public Relations

4.2.1.1.a.iv Scheduling and Sequencing Construction

I-69 DP Team has developed a sequencing plan which will construct a great part of the mainline I-69 in the Bloomington area, with the exception of the Fullerton Pike Interchange, during the 2014

construction season. In the 2015 construction season, work will begin just north of the SR 46 overpass and includes access roads, the Sample Road Interchange, the Kinser Pike overpass and the Chambers



Figure 4.2-5: Sequencing Meeting



Figure 4.2-6: Jacking Existing Bridge

Pike overpass, among other workfronts. The I-69 DP Team proposes raising the Arlington Road overpass bridge (rather than lowering the I-69 mainline grade) to expedite construction and

prioritize mobility on mainline I-69 and SR 46 ramp access. From Chambers Pike to the north, mainline I-69, access roads, and the Liberty Church Interchange will be constructed during second half of 2015 construction season. This sequencing plan prioritizes accessibility in the Bloomington area and overall system mobility. As indicated in Figure 4.2-7, we will complete all required milestones on or before the dates required in the ITP.

Schedule Item

Milestone Date

Bloomington Area	Initiated in 2014	✓
That Road - Local Access Roads & Improvements	Completed by June 1, 2015	✓
Rockport Road Local Access Roads & Improvements	Completed by June 1, 2015	✓
Fullerton Pike - Interchange & Associated Ramps	Completed by December 31, 2015	✓
Tapp Road - Interchange & Associated Ramps	Completed by December 31, 2015	✓
Vernal Pike Overpass	Completed by December 31, 2015	✓
Substantial Completion	October 31, 2016	✓

Figure 4.2-7: ITP Milestones

The I-69 DP Team has incorporated environmental protection and mitigation into the sequencing plan for construction, including:

- Specific erosion control plans for all construction stages
- Minimize temporary pavement which expands the construction footprint
- Protect and avoid karst features during all construction activities
- Avoid tree clearing between April 1 and September 30 (Indiana Bat)

These mitigation measures will ensure that our construction activities respect the existing landscape, ultimately providing a facility with minimal environmental impact.



Throughout the design of Section 5, alternative design solutions will be developed to expedite construction and limit the impacts to the traveling public. The options below not only reduce costs for the project, they also reduce construction time and impacts to traffic.

- **Fullerton Pike** – Reduced overpass bridge width will expedite the opening of the Fullerton Pike Interchange by one month
- **Arlington Overpass** – Jacking the Arlington Bridge prioritizes mainline traffic flow and access to SR 46 while reducing overall construction duration by one month
- **Liberty Church Road** – Reduced overpass bridge width will expedite the opening of the Liberty Church Road Interchange by two months

The I-69 DP D-B approach allows significant construction in the Bloomington area in 2014, which will allow IFA/INDOT to meet its commitments.

4.2.1.1.a.v Locations to be used during Construction

Due to the length of the project and the sequencing of the works, multiple locations will be used during construction as staging areas and laydown yards. In addition, we will utilize off-site borrow pits to import materials needed for embankment construction. A portable asphalt plant for this Project will be strategically located to minimize transportation costs. INDOT approved material sources will be delivered to the plant site for asphalt production.



Figure 4.2-8: E&B Paving Portable Asphalt Plant.

Equipment will be staged at various cross-road locations to allow for refueling and maintenance access in the evening and to minimize transportation expenses. The staging areas will be carefully delineated and all

environmentally sensitive areas will be marked to prevent accidental intrusion. Spill containment areas and truck cleanout sites will also be provided at the staging areas.

For structures, laydown areas located immediately adjacent to each structure will be provided. We will also take advantage of just-in-time deliveries, so that the laydown area required is reduced as much as possible and all environmentally sensitive areas are avoided.

In all cases, we will coordinate staging areas and laydown yard locations with local agencies and residents to minimize noise and traffic impacts.

Drainage Design Approach

The key to drainage design for this project is to upgrade the existing storm drainage system to handle the increased runoff from the widened highway and to not increase flows downstream of the facilities. Existing culverts will be extended to drain to their historic outlets and to fix any hydraulic deficiencies. Detention basins will be designed and placed in locations to assure the appropriate volumes and flow rates of storm water arrive at these outlets. In addition, karst mitigation features such as geomembrane liners along the drainage ditches will be provided in accordance with the Technical Provisions.



Figure 4.2-9: Existing Drainage Facilities Will Be Retained If Feasible.

I-69 hydrology and hydraulics will utilize the 100-year storm in the analysis of the existing and proposed drainage facilities.

Materials unsuitable for embankment will be used for ditch and detention basin bottoms.

Proposed I-69 on-site drainage features include roadside ditches, detention basins, inlets (roadside and curb), manholes, storm drain, and pavement underdrains. Existing drainage facilities will be used where practical.

The Technical Drawing roll plots identify the location of all of the drainage improvements. Figure 4.2-10 and 4.2-11 list the mainline culvert improvements provided.

Circular Pipe Size	Pipe Type	Left Side Extension Length (ft)	Right Side Extension Length (ft)	Total Constructed Length (ft)	Quantity of New End Sections
15"	CMP	0	67	67	1
15"	RCP	0	12	12	1
24"	CMP	15	0	15	2
24"	RCP	10	125	135	4
30"	RCP	0	12	12	1
36"	CMP	844	110	954	15
36"	RCP	120	162	282	9
36" Inside 54"	CMP	20	0	20	1
42"	CMP	15	0	15	1
48"	CMP	70	0	70	1
48"	RCP	60	65	125	2
54"	CMP	95	0	95	2
66"	CMP	0	44	44	1
72"	CMP	10	0	10	1
84"	CMP	60	0.0	60	1
90"	CMP	262	156	418	4

Figure 4.2-10: I-69 Section 5 Mainline Culvert Summary

CMP – Corrugated Metal Pipe Culvert
RCP – Reinforced Concrete Pipe Culvert

Box Culvert Size	Type	Left Side Extension Length (ft)	Right Side Extension Length (ft)	Total Constructed Length (ft)	Quantity of New Headwalls
2' x 3'	RCB	0	147	147	5
3' x 3'	RCB	90	60	150	4
3' x 4'	RCB	0	60	60	1
4' x 4'	RCB	0	60	60	2
4' x 5'	RCB	0	40	40	2
5' x 5'	RCB	0	90	90	1
6' x 4'	RCB	0	20	20	1

Elliptical Pipe Size	Pipe Type	Left Side Extension Length (ft)	Right Side Extension Length (ft)	Total Constructed Length (ft)	Quantity of New End Sections
56" x 72"	CMP	140	80	220	4
78" x 102"	CMP	60	0	60	2
28" x 42"	CMP	0	75	75	1
34" x 48"	CMP	0	35	35	1
43" x 63"	CMP	16	0	16	1

Figure 4.2-11: I-69 Section 5 Mainline Culvert Summary Table

CMP-Corrugated Metal Pipe Culvert
RCB- Reinforced Concrete Box Culvert

Signing and Pavement Marking Approach

Prior to starting design, we will conduct an inspection of all existing signs in the project limits to assess the condition of the sign sheeting and mountings. Wherever possible, existing signs will be reused. Signs that need replacement and new signs will use diamond grade sign sheeting. The use of diamond grade sheeting provides reflectivity consistent with the requirements of the Indiana Manual of Uniform Traffic Control Devices (InMUTCD), alleviates the need for sign lighting and

requires minimal maintenance over the life of the sign.

Thermoplastic pavement markings will be used throughout the project limits and will meet all INDOT standards for design, materials and reflectivity. Snowplowable Raised Pavement Markers will also be provided. All pavement marking and signing design will conform to the InMUTCD

The design life of the signs is approximately 15 years which coincides with the I-69 DP Team's pavement design life. Thus, signing will be refreshed with each new paving cycle.



Traffic Signals Design Approach

Figure 4.2-12 lists the work required for new and existing traffic signals within the Project limits.

New signals will be constructed as span, catenary, and tether support signals. Modernization of existing signals will include replacement of signal heads (with backplates), new pedestrian signal heads/pushbuttons, new loops (where widening of change of lane position occurs), possible replacement or relocation of controller cabinet and signal electrical service, and in some cases new strain poles and span, catenary and tether supports. Span wire mounted signs will be replaced or rehabilitated as necessary.

Any new traffic signal interconnect installed under the Project will use wireless communications. Existing fiber-optic interconnect will remain in place if it meets the Project Standards.

Design and construction will be in accordance with the IDM Chapter 502 Traffic Design Draft, the INDOT MUTCD and the INDOT Standard Specification/Recurring Special Provisions.

Highway Lighting Design Approach

Full interchange lighting will be provided at the following interchanges with I-69; Fullerton Pike, Tapp Road and Sample Road. Partial interchange lighting will be provided at the Liberty Church Road/I-69 interchange.

Existing interchange lighting will be retained at the following interchanges with I-69; SR 45/2nd Street,

SE 48/3rd Street, SR 46 and Walnut Street. Where local roads are currently lit, the lighting system will be retained, relocated or replaced in kind.

If lighting of local roads is required, the I-69 DP Team will work with the local agencies for standards they may have for lighting levels and equipment.

A key lighting decision will be the height of light poles at the Sample Road interchange as the area is more rural than Fullerton Pike or Tapp Road and light intrusion may be an issue.

4.2.1.1.b Addressing Geotechnical-related Issues

From a geotechnical standpoint, I-69 Section 5 is a somewhat complicated project. Besides the considerable amount of karst present on the project, there is also limestone and shale.

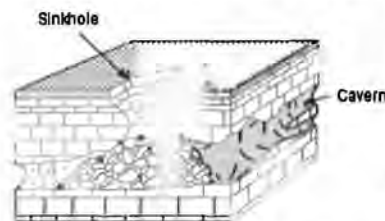


Figure 4.2-13: Sinkhole Formation

In addition, based on the density tests conducted as part of IFA's geotechnical exploration, approximately 49% of the soils are classified as A-7-6

(Clay). This correlates to approximately 22% of the samples tested exhibiting a maximum Proctor Density less than 100 pcf. Soils with unit weights less than 100 pcf will not be useable as embankment fill without modification. However, these clay soils have a low permeability rate and can be used to line ditches and detention ponds. Where good materials are encountered in ditches or detention ponds, we will over excavate to mine the suitable embankment materials and replace them with the unsuitable material.

Location	New Signal	Signal Modernization	Signal Interconnect
SB and NB I-69 Ramps at Fullerton Pike	✓		✓
SB and NB I-69 Ramps at Tapp Road	✓		✓
SB and NB I-69 Ramps at SR 45/2nd Street		✓	✓
SR 45/2nd Street at Basswood Drive		✓	✓
SR 45/2nd Street at Liberty Drive		✓	✓
SB and NB I-69 Ramps at SR 48/3rd Street		✓	✓
SR 48/3rd Street at Franklin Road		✓	✓
SR 48/Gates Avenue			✓
SB & NB I-69 Ramps at SR 46			✓

Figure 4.2-12: I-69 Section 5 New and Existing Traffic Signals



Additional soil borings will be obtained to further identify the bedrock surface and rock characteristics along the project.

Geophysical testing will be a critical part of identifying the presence of previously undetected karst features. This will be especially important at structure locations. A combination of Refraction Microtremor (Re-Mi) analysis and 2-dimensional electrical resistivity will be used at each structure where karst features are suspected. Based on the results of the geophysical testing, additional soil borings and rock coring will be conducted to confirm the extent of the karst feature and develop a mitigation procedure. The goal of the karst mitigation is to obtain the most economical solution with minimal environmental impact and adequate performance of the structure in question. **Figure 4.2-14** explains our proposed karst mitigation.

Karst Feature	Mitigation
Exposed Sinkhole	Excavate to remove the soil and bedrock void. Fill with rip rap and cap.
Drainage ditches within 50 feet of an exposed sinkhole, depressed existing ditch or springs	Line with riprap and an impervious geomembrane for the limits +10' of the surveyed feature
Storm water detention basins within the karst sinkhole or buried sinkhole regions	Line with geomembrane
Roadway drainage that discharges to sinking streams or sinkholes	Treat storm water in accordance with SWPP BMPs

Figure 4.2-14: I-69 DP Team Karst Mitigation

Approach to Pavement Design

At Handback, the pavement is required to have 10 years of useful life. The I-69 DP Team's approach is to use an initial 15 year pavement design, followed by two 15-year renewals (at year 15 and year 30 of the Operating Period. Preliminary pavement designs were completed using ASSHTOWare.

We propose an initial 15 year pavement design with subsequent renewals at year 15 and 30 of the Operating Period

Based on overall construction cost, schedule and ease of maintenance/renewals, full depth hot-mix asphalt (HMA) and mill and overlay with HMA will be employed throughout the project.

Traffic loading for the pavement design was based on the traffic volume and truck percentage information contained in Chapter 9 of the Technical Provisions. To determine traffic loading in years beyond 2035, a 1.0% compounded growth factor was used. We believe that the initial pavement may last longer than the 15 year life, as traffic growth predicted by the travel demand model for the Project is quite high and it may take more than 15 years to reach those volumes. Subsequent renewals will be based on updated traffic projections.

4.2.1.1.c Maintaining and Protecting ROW and Adjacent Roads



The I-69 DP Team will maintain and protect the right-of-way (ROW) and adjacent roads during the Project Term. The processes and procedures to accomplish this task include:

- Permanent noise walls will be constructed early to mitigate noise impacts
- Haul routes will be strategically identified to minimize dust and impacts to residents
- Project-specific vibration plan/monitoring will be prepared
- Local roads will be maintained and protected from damage
- S-Lines profiles will be lowered to reduce the amount of fill required
- Dust palliative will be used to control dust
- Erosions control plans and measures will be prepared and implemented
- All on-site contractor use areas, borrow sites and waste sites will be identified
- Local water wells and properties will be protected
- Existing animal crossings will be maintained

When combined with regular and periodic maintenance, I-69 DP's proposed rehabilitation activities will extend the service life of the existing bridges through to Handback.

The PIP will include provisions for Project Hot Line signs and flyers to foster community interaction from project inception.

4.2.1.1.d Preliminary Roadway Schematic

The Preliminary Roadway Schematic has been prepared and is presented on 36" x 120" color roll plot drawings (1"=100' scale) which are described further in **Appendix H-2**. There are thirteen roll plots depicting the mainline roadway, ramps and access roads. There are four additional roll plots showing the interchanges and grade separated cross roads for the project. The Technical Drawing roll plots are presented with different colored shapes and hatching to represent the multiple types of pavement overlay, widening and replacement throughout the project. Included on the roll plots are:

- Existing & Proposed Drainage Features
- Retaining & Noise Walls
- Guard Rail & Median Cable Barrier
- Limits of Karst Buried Sinks, Sinkholes & Sinking streams
- Mainline Roadway Profiles
- Replacement & Widening of Bridges
- Concrete Median Barrier
- Curbs, Sidewalks & Bike Lanes
- Proposed ROW with Cut & Fill Grading Lines to Delineate Construction Limits
- Typical Sections

4.2.1.2 Bridge Structures, Retaining Walls, Noise Walls and Other Structures

There are 32 bridges within the project limits; twenty are existing and twelve will be newly constructed. Nineteen of the twenty existing bridges will undergo varying degrees of rehabilitation and widening; one of the twenty existing bridges will not be modified during this project. Twelve bridges are newly constructed to provide grade-separated crossings over I-69 or to allow access roads and ramps to cross creeks and rivers. **Figure 4.2-15** provides a brief description of each structure and scope of work to be performed.

In addition to widening, existing bridges will undergo rehabilitation aimed at extending their service life and minimizing service interruptions. Cracked and spalled concrete will be repaired; steel bearing assemblies will be replaced with elastomeric bearing pads; end bents will be made semi-integral; steel bridges not painted within the past five years will be painted; wearing surfaces with less than 10 years of remaining life will be replaced.

There are 33 proposed retaining walls within the project limits. 15 retaining walls are constructed around the end bents of new bridges crossing over I-69 to retain the embankment of the cross roads and reduce bridge span lengths. 18 retaining walls are located along the I-69 mainline or cross roads to reduce the reach of cut and fill slopes. The majority of retaining walls are constructed in fill conditions; however, two walls are constructed in cut conditions. **Figure 4.2-16** provides a description of the wall type.

There are three noise walls within the project limits. They are located along the I-69 mainline in the more populated areas between Fullerton Pike and SR48. The walls range in height from 12 feet to 18 feet. Two of the noise walls are ground mounted while one of the noise walls is mounted to the top of a retaining wall. **Figure 4.2-17** indicates the location and limits of each noise wall.

4.2.1.2.a Approach to Materials Selection

Concrete, with its lower initial cost and lower life-cycle maintenance cost, is the preferred material for structures and its aesthetic characteristics also compliment the local environment of Monroe and Morgan Counties. All new bridge structures will be constructed with prestressed concrete bulb-tees or prestressed concrete box beams.

The D-B Team and the O&M Team have had extensive interaction on determining bridge materials, methods and rehabilitation strategies.

Existing bridges which require additional beams for widening will be widened in-kind with reinforced concrete beams, prestressed concrete beams, rolled steel beams, or welded steel plate girders. Steel superstructures will be painted; no weathering steel will be used on bridges since none has been used on any of the existing bridges throughout the project limits.



Mechanically Stabilized Earth (MSE) with concrete facing panels will be used for retaining walls in fill conditions to expedite construction. Cast-in-place concrete will be used for retaining walls in cut conditions to reduce the amount of over excavation required behind the wall.

Bridge Name	Improvements	Structure Type	Spans	Abutment Type	Pier Type	Vertical Clearance
Rockport Road over I-69	New Structure	Prestressed Concrete Bulb-Tee	98' - 98'	Integral on Driven HP Piles	Multi-Column on Driven HP Piles	16'-9"
Fullerton Pike over I-69	New Structure	Prestressed Concrete Bulb-Tee	105' - 119'	Integral on Driven HP Piles	Multi-Column on Driven HP Piles	16'-9"
Tapp Road over I-69	New Structure	Prestressed Concrete Bulb-Tee	83' - 83'	Integral on Driven HP Piles	Multi-Column on Driven HP Piles	16'-9"
SR45/2nd Street over I-69	Existing Structure to be Reconfigured	Welded Steel Plate Girder	149' - 146'	Semi-Integral on Driven HP Piles	Multi-Column on Spread Footing	16'-10"
Indiana Railroad Overpass	Existing Structure to Remain As-Is	Welded Steel Through Plate Girder	77.5' - 77.5'	Full-height on Spread Footing	Wall on Spread Footing	16'-0"
SR48/3rd Street over I-69	Existing Structure to be Widened	Welded Steel Plate Girder	117' - 117'	Semi-Integral on Driven HP Piles	Multi-Column on Driven HP Piles	16'-5"
I-69 NB over CSX Railroad	Existing Structure to be Widened	Welded Steel Beam	60' - 75' - 70'	Semi-Integral on Driven HP Piles	Multi-Column on Driven HP Piles	22'-1"
I-69 SB over CSX Railroad	Existing Structure to be Widened	Roller Steel Beam	60' - 75' - 70'	Semi-Integral on Driven HP Piles	Multi-Column on Driven HP Piles	22'-1"
Vernal Pike over I-69	New Structure	Prestressed Concrete Bulb-Tee	131' - 120'	Integral on Driven HP Piles	Multi-Column on Driven HP Piles	16'-9"
SR46 over I-69	Existing Structure to be Enhanced	Post-tensioned Concrete Bulb-Tee	131.8' - 131.8'	Integral on Driven HP Piles	Multi-Column on Driven HP Piles	16'-9"
Arlington Road over I-69	Existing Structure to be Raised	Welded Steel Plate Girder	110' - 110'	Semi-Integral on Spread Footing	Multi-Column on Spread Footing	16'-0"
Kinsler Pike over I-69	New Structure	Prestressed Concrete Bulb-Tee	110' - 103'	Integral on Driven HP Piles	Multi-Column on Spread Footing	16'-9"
I-69 NB over Griffy Creek	Existing Structure to be Widened and Lengthened	Prestressed Concrete I-Beam	55.5' - 55.5' - 57' - 56.25' - 55.5'	Semi-Integral on Driven HP Piles	Wall on Driven HP Piles and Spread Footing	NA
I-69 SB over Griffy Creek	Existing Structure to be Widened	Prestressed Concrete I-Beam	55.5' - 55.5' - 57' - 56.5' - 55.5'	Semi-Integral on Driven HP Piles	Wall on Driven HP Piles and Spread Footing	NA
I-69 NB over Bearblossom Creek	Existing Structure to be Widened	Welded Steel Plate Girder	90' - 112.5' - 90'	Semi-Integral on Driven HP Piles	Wall on Driven HP Piles	NA
I-69 SB over Bearblossom Creek	Existing Structure to be Widened	Welded Steel Plate Girder	90' - 112.5' - 90'	Semi-Integral on Driven HP Piles	Wall on Driven HP Piles	NA
Walnut Street Overpass	Existing Structure to be Enhanced	Welded Steel Plate Girder	133' - 129'	Semi-Integral on Driven HP Piles	Wall on Driven HP Piles	16'-0"
I-69 NB over Bearblossom Creek Overflow	Existing Structure to be Widened	Prestressed Concrete Box Beam	38' - 38.5' - 38.5' - 38'	Semi-Integral on Driven HP Piles and Driven HP Piles	Wall on Driven HP Piles and Driven HP Piles	NA
I-69 SB over Bearblossom Creek Overflow	Existing Structure to be Widened	Roller Steel Beam	38' - 38.5' - 38.5' - 38'	Semi-Integral on Driven HP Piles	Wall on Driven HP Piles	NA
Sample Road over I-69	New Structure	Prestressed Concrete Bulb-Tee	103' - 89'	Integral on Driven HP Piles	Multi-Column on Spread Footing	16'-9"
Chambers Pike over I-69	New Structure	Prestressed Concrete Bulb-Tee	94' - 119' - 119'	Integral on Driven HP Piles	Multi-Column on Spread Footing	16'-9"
I-69 NB over Bryants Creek	Existing Structure to be Widened	Prestressed Concrete I-Beam	44.6' - 53.1' - 44.6'	Semi-Integral on Driven HP Piles	Wall on Spread Footing	NA
I-69 SB over Bryants Creek	Existing Structure to be Widened	Roller Steel Beam	44' - 54.5' - 44'	Semi-Integral on Driven HP Piles	Wall on Spread Footing	NA
I-69 NB over Little Indian Creek	Existing Structure to be Replaced	Post-tensioned Concrete Bulb-Tee	85'	Integral on Driven HP Piles	NA	NA
I-69 SB over Little Indian Creek	Existing Structure to be Widened	Roller Steel Beam	75'	Semi-Integral on Driven Timber Piles and Driven HP Piles	NA	NA
Liberty Church Road over I-69	New Structure	Prestressed Concrete Bulb-Tee	89' - 89'	Integral on Driven Pipe Piles	Multi-Column on Driven Pipe Piles	16'-9"
I-69 NB over Jordan Creek	Existing Structure to be Widened	Reinforced Concrete Beam with Monolithic Deck	43'	Semi-Integral on Driven Timber Piles and Driven Pipe Piles	NA	NA
I-69 SB over Jordan Creek	Existing Structure to be Widened	Reinforced Concrete Beam with Monolithic Deck	43'	Semi-Integral on Driven Timber Piles and Driven Pipe Piles	NA	NA
Liberty Church SB Exit Ramp over Jordan Creek	New Structure	Prestressed Concrete Box Beam	57.5'	Integral on Driven Pipe Piles	NA	NA
Liberty Church West Access Road over Little Indian Creek	New Structure	Prestressed Concrete Bulb-Tee	77.25'	Integral on Driven Pipe Piles	NA	NA
Liberty Church West Access Road over Jordan Creek	New Structure	Prestressed Concrete Box Beam	57.5'	Integral on Driven Pipe Piles	NA	NA
Liberty Church East Access Road over Jordan Creek	New Structure	Prestressed Concrete Box Beam	51.25'	Integral on Driven Pipe Piles	NA	NA

Figure 4.2-15: I-69 DP Team Bridge Structures to be Widened or Constructed

Noise Walls	Location	Type	Length (FT)	Height (FT)	Area (SF)
NW-1	I-69 SB, Sta. 251+80 to Sta. 300+00	Ground Mounted	4820	12	57840
NW-2	I-69 NB, Sta. 326+50 to Sta. 341+00	Wall Mounted	1450	18	26100
NW-3	I-69 NB, Sta. 347+30 to Sta. 389+70	Ground Mounted	4240	14	59360

Figure 4.2-16: I-69 DP Noise Walls

Retaining Wall	Location	Type	Length (FT)	Area (SF)
RP-1	Rockport Road Bridge Abutment 1	MSE	185	3520
RP-2	Rockport Road Bridge Abutment 2	MSE	220	4450
F-1	Fullerton Pike Bridge Abutment 1	MSE	270	5900
F-2	Fullerton Pike Bridge Abutment 2	MSE	270	6300
T-1	Tapp Road Bridge Abutment 1	MSE	270	6160
T-2	Tapp Road Bridge Abutment 2	MSE	270	6160
V-1	Vernal Pike Abutment 1	MSE	220	3900
V-2	Vernal Pike Abutment 2	MSE	300	8450
K-1	Kinser Pike Abutment 1	MSE	190	3200
K-2	Kinser Pike Abutment 2	MSE	200	4110
S-1	Sample Road Abutment 1	MSE	230	5860
S-2	Sample Road Abutment 2	MSE	210	4740
C-2	Chambers Pike Abutment 2	MSE	215	4090
LC-1	Liberty Church Road Abutment 1	MSE	240	5980
LC-2	Liberty Church Road Abutment 2	MSE	240	5980
RW-1	Fullerton Pike EB, Sta. 68+50 to Sta. 70+85	MSE	235	1680
RW-2	Fullerton Pike WB, Sta. 67+25 to Sta. 73+94	MSE	669	8042
RW-3	I-69 SB, Sta. 275+00 to Sta. 280+00	CIP	500	5285
RW-5	SR48 WB, Sta. 42+50 to Sta. 47+00	MSE	450	5400
RW-6	SR48 EB, Sta. 41+80 to Sta. 47+05	MSE	525	5250
RW-7	SR48 EB, Sta. 53+00 to Sta. 57+90	MSE	490	7680
RW-8	I-69 NB, Sta. 727+08 to Sta. 734+57	CIP	749	9415
RW-9	I-69 SB, Sta. 756+18 to Sta. 757+78	MSE	160	2242
RW-10	I-69 NB, Sta. 765+09 to Sta. 774+84	MSE	800	24000
RW-11	I-69 SB, Sta. 940+41 to Sta. 943+28	MSE	287	3012
RW-12	I-69 NB, Sta. 945+50 to Sta. 947+50	MSE	200	3000
RW-13A	I-69 SB, Sta. 953+04 to Sta. 959+65	MSE	674	12037
RW-13B	I-69 SB, Sta. 951+93 to Sta. 958.38	MSE	746	16353
RW-14	I-69 SB, Sta. 1146+00 to Sta. 1157+75	MSE	1175	8120
RW-15	I-69 NB, Sta. 1159+00 to Sta. 1168+50	MSE	950	9545
RW-16	I-69 SB, Sta. 1173+75 to Sta. 1176+75	MSE	300	2945
RW-17	I-69 SB, Sta. 1180+50 to Sta. 1182+50	MSE	200	2000
RW-18	I-69 NB, Sta. 1181+50 to Sta. 1185+58	MSE	408	4636

Figure 4.2-17: I-69 DP Retaining Walls

It will also be used when the retaining wall must support a noise wall. Precast concrete panels with limestone veneer form liner pattern mounted between painted wide flange steel posts will be used for all noise walls. Noise walls will be accentuated with wide, limestone-clad pilasters at regular spacing. The materials and methods chosen are commonly used throughout the State and have a

MSE – Mechanical Stabilized Earth // CIP – Cast-in-Place

performance record that, with proper Routine Maintenance and Rehabilitation Work, will provide structures with at least the required Residual Life at Handback. All materials and methods used in the construction of the bridges and walls will be accordance with the Department Standard Specifications.

4.2.1.2.b Structures Schematics



The preliminary designs have been advanced with the goal of providing the most cost effective and attractive structures that can be constructed efficiently and with the least disruption to existing traffic. The Technical Drawing roll plots identify the location of each of the bridges, retaining walls, and noise walls throughout the project. The Technical Drawing roll plots are identified in **Appendix H-2**.

4.2.1.2.c Preliminary Durability Plan

Implementing a transportation structure Durability Plan is a key element in the overall Asset Management program for Section 5. The Durability Plan prepared by the I-69 DP Team will present a uniform approach and implementation to the design, construction, and operation and maintenance of bridges with goals to specifically exceed the specified condition rating of each structure at substantial completion.

The Durability Plan will include:

- Identification of deterioration mechanisms
- Materials selection during design
- Design detailing in accordance with durability goals
- Verification that construction quality and components are in compliance with durability requirements
- Development of an in-service inspection and deterioration modeling program to plan, prioritize and budget maintenance activities

The major stages in the Durability Plan implementation include:

- Preliminary and Final Engineering Design
- Construction Stage Methods and Detailing
- In-Service Operation and Maintenance and Inspection
- Residual Life at Handback

It will allow designers to make good decisions on materials, design details, construction methods and operational aspects, such as inspection access, with the goal of increasing service life and lowering maintenance costs.



The principal deterioration mechanisms for bridges and structures in Indiana are climatic and environmental. Freeze-thaw

cycles, rain, snow and de-icing materials accelerate the rate of degradation of structure elements. Other impacts to service life come from wear and traffic use and include traffic volumes, trucks over the load limit, and even extreme events that include petroleum spills, fires and earthquakes.

The type of concrete design used for various elements will consider special mix designs for low-permeability for decks, barriers and other areas exposed to weather and water splashing. Epoxy-coated reinforcing steel for bridge decks, barriers and portions of the substructure connected to the deck will reduce potential for corrosion and deterioration. The use of protective elements such as concrete sealants and paint and overlays for deck wearing surface are also planned for this project and will further slow deterioration.

The use of concrete for new bridge decks, girders and crash-tested barriers will lower the risk of environmental and life cycle events and decrease the rate of deterioration.

Past experience has shown that significant long-term maintenance issues are caused by poor design and/or poor construction detailing practices. An example of design detailing is the use of deck joints. It is well-documented that water intrusion occurs through deck joints, and in combination with ice and snow, will cause concrete spalling and deterioration of abutment and pier seats and accelerate bridge bearing failure. Use of integral and semi-integral abutments proposed for this project eliminates deck joints. Our design has been coordinated with both O&M and LCM to provide the most cost effective design.



The quality of construction can also be determinant to the overall service life. The quality and durability of construction materials and the processes taken to ensure conformance to the specifications and expected service life will be outlined in a Construction Quality Management Plan (CQMP). The CQMP will outline processes and methods that ensure quality control and testing and proper verification of quality conformance. Contractor and Sub-contractor work, manufacturers, products and materials suppliers will be subject to compliance with durability requirements.

Bridge inspection and reporting is a major component of the on-going evaluation of structure condition and the basis for establishing a baseline for deterioration models that measure deterioration rates of structure elements over life cycle and for predicting maintenance costs. Each bridge will be



Figure 4.2-18: Spalling of Concrete on Bridge Deck

inspected at least every two years and in-depth for critical elements such as fracture critical steel at intervals that vary depending on structure type. The conditions will be input to

deterministic deterioration models using the AASHTOWare BrM software and enable us to prioritize, budget and plan for annual maintenance activities. Additional discussion regarding our overall Project Durability Plan is provided in Section 4.1.5.2.

Bridge inspection reports will be prepared in NBIS format and include element-level condition assessments in accordance with the AASHTO Guide Manual for Bridge Element Inspection

4.2.1.3 Context Sensitive Solution Elements

The Section 5 corridor is visually separated into urban, rural, forested and agricultural segments. Our Aesthetic and Landscape Concept Master Plan will be designed to enhance the qualities of those areas. Contour grading, slope treatments, planting schemes and landscape surface treatments will reflect the landscape character of the overall regional landscape. For instance, the planting schemes in urban areas are more formal than those in rural or forested lands, Indiana Limestone outcroppings will be carefully excavated to expose features as they would appear in nature and retaining walls and sound walls will be designed to be reminiscent of these local limestone features. The Technical Drawing roll plots in Appendix H-2 depict the concepts to be employed. Context

sensitive site level solutions involve line, form, texture and color selections of landscape architectural treatments that create a sense of place. Examples of site level context sensitive solutions we will employ include the detailed design of the unique architectural treatment of abutments at bridges, enhanced light fixtures along sidewalks, and railings and parapets at bridges. Pedestrian and bicycle accommodations further enhance the settings and help introduce a pedestrian scale to the project.

Bridge Enhancements – Seven bridges, a combination of new and existing, have been



Figure 4.2-19: Indiana Limestone Veneer

selected to receive bridge aesthetic enhancements. These four types of aesthetic enhancements include Community Identifiers, Indiana Limestone

Veneer/texture in bridge elements, Ornamental Lighting, and Enhanced Architectural Railing.

- Tapp Road and Fullerton Pike bridges will receive all identified enhancements
- The SR 48/3rd Street and SR 45/2nd Street bridges will receive all identified enhancements except for the Indiana Limestone Veneer/texture
- SR 46 and Walnut Street bridges will only receive Community Identifiers
- Sample Road bridge will only receive the Community Identifier and the Indiana Limestone Veneer

In addition, all seven bridges will incorporate a natural color palette on the bridge structure elements such as the parapet walls, pilasters, girders, and bridge piers. Ornamental lighting will also be incorporated into the bridges to highlight the Community Identifiers and bridge sidewalks. The design team's landscape architects and bridge engineers will work together in the development and incorporation of these aesthetic enhancements, as shown in Figure 4.2-20.



Figure 4.2-20: Example of the bridge aesthetics the I-69 DP Team will incorporate on the Project

Streetscape Enhancements and Vegetation – The landscape palette selected for this Project includes a strategic array of native plants to provide visual interest in all seasons, introduce shade and minimize extensive maintenance.



Figure 4.2-21: SR 45/2nd Street Landscape Concept
Bicycle and Pedestrian Facilities - Bicycle and Pedestrian Facilities are integrated with the planned landscape, roadway and bridge structures. A concerted effort has been made to promote and encourage bicycle and pedestrian use of the overpasses through widened sidewalks and trails as well as signage to direct the users. Street tree planting concepts are planned to further make these areas more pleasing and compatible with pedestrian and bicycle travel. The City of Bloomington Bike Plan provides a wealth of background information to help accommodate the needs of the bicycle community. This Plan was referenced in the design of the Project.

Retaining Walls – Retaining walls will generally be less visible to the traveling public since they are constructed in cut sections and placed lower within

a traveler's viewshed, while the noise barrier walls loom as high as 20 feet above the landscape and often follow the roadway for long distances. The lower retaining walls will appear as limestone outcrops with Limestone Veneer form liners texturing the wall's face.



Noise Barrier Walls – Three noise barrier walls have been identified within the project limits. These walls range in heights from 12 feet to 18 feet and would be constructed of pre-cast concrete panels set between wide flange beam posts and pre-cast 30" wide pilasters. These noise barrier walls provide the opportunity for the introduction of texture and color. The pre-cast panels would have a natural limestone texture with a random pattern viewable from I-69. A color similar to that of the natural limestone will be applied as paint or stain.

The neighborhood side of the noise barrier walls will have a different texture. Three alternatives have been proposed, Running Bond Brick Pattern,

Horizontal Groove Pattern, and the Random Ashlar Pattern. These patterns along with other patterns and color alternatives will be presented to the public to determine the final neighborhood wall



Figure 4.2-22: Indiana Limestone Outcropping pattern and color.

Rock Cuts/Slope Rounding - Indiana Limestone will definitely be encountered throughout the corridor with concentrations in Segments 5D, 5E and 5F. Rock cuts will be carefully excavated to reflect the character of the limestone outcrops as they appear naturally creating additional visual interest along the roadway. The near vertical limestone faces will transition between sloped earth-cut slopes that will further accentuate the limestone outcrop as a visual feature. Earth slopes will be generously rounded to facilitate blending the project with the existing rolling terrain and dominant agricultural character of the area. Slopes will be seeded with native seed varieties and wild flowers to further blend the project with the

environment. All slopes will be protected with temporary and permanent erosion control features that include progressive grading and seeding, erosion control blankets and fiber rolls and a program to continually evaluate and maintain the landscape and erosion control features.

Woodlots – Mature woodlands and mixed hardwood trees are spaced randomly throughout the corridor. Where trees have to be removed to accommodate the widening, the result is a tree line of bare tree trunks with leaves clustered at the tree tops. The foliage that once reached to the ground

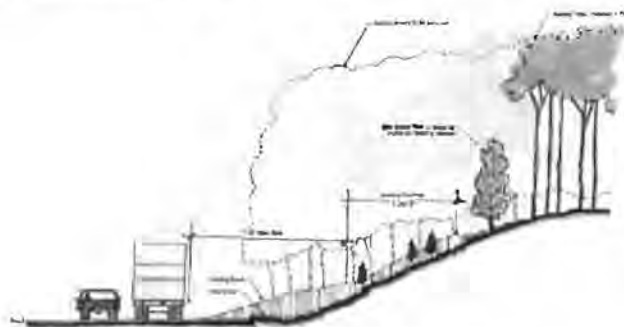


Figure 4.2-23: I-69 DP Woodlot Planting Scheme forming an attractive visual barrier will be gone. One way to help blend this roadway with the natural landscape is to reestablish a solid tree line edge. This will be done by planting caliper hardwood trees near the ROW where mature trees have been removed. Seedlings will also be planted on the grassy slopes closer to the roadway to create a vegetative transition between the roadway and mature forest vegetation. Over time, this planting scheme will provide visual interest to the traveling public and reestablish a visual screen for adjacent residents.

Selected Intersection Enhancements – We have taken the opportunity to enhance existing and new traffic interchanges and selected intersections within the context sensitive approach. Enhancements will include streetscape improvements include street tree and shrub plantings in medians and street furniture along sidewalks and bike and pedestrian amenities, where trails or multi-use paths are adjacent to or across the road.



Figure 4.2-24: SR 48/3rd Street Intersection Enhancements

4.2.1.4 Utility Relocation and Adjustment Work Elements

The I-69 DP Team has developed a Utility Master Plan included in the Technical Drawing roll plots. The plan includes protection in place, relocation concepts and priority relocation stages to ensure the highway construction stays within the allotted schedule and budget.

Included in our utilities approach is the overall goal to reduce protection work and utility relocations through value engineering, construction sequencing and clear understanding of the utility relocation process as it relates to overall construction.

We have identified and been in communication (with IFA's consent) with the following thirteen utility companies:

- AT&T (Distribution and Long Distance)
- City of Bloomington Utilities (CBU)
- Comcast Central Indiana
- Duke Energy
- Hoosier Energy Rural Electric Cooperative
- Indiana University
- Martinsville Utilities
- South Central Indiana REMC
- Southern Monroe Water Corporation
- Smithville Communication
- Washington Township Water Corporation
- Vectren Energy
- Zayo Fiber Solutions

4.2.1.4.a Performance of Utility Relocations, Adjustments and Protections

While all utilities within the project limits are critical facilities that must be protected in place or relocated, we have identified three major utilities that require immediate attention due to their:

- Relocations costs
- Location within the proposed first phase of construction
- Facility being critical to the utility company and/or the local users



Duke Energy: Duke Energy Transmission has existing 138kV overhead transmission within a 100' easement on the west side of I-69 from Fullerton Pike to 3rd Street. In a meeting held with Duke Energy on October 24, 2013, it was identified that this line could remain in the current alignment within their 100 foot easement with new, raised poles installed to meet clearance requirements above newly placed roadway embankment for the cross roads. This is circuit is part of a redundant system therefore it is permissible to take the line out of commission



Figure 4.2-25: Duke Energy Transmission Line

during the allowable outage dates of September 15th to June 1st. Construction of Rockport Road and Tapp Road crossroads and bridges will be sequenced to allow relocation of Duke Energy facilities prior to the start of work. In addition, Duke Energy has identified an existing pole at the intersection of the two circuits in the system. This pole, located just south of 2nd Street and must be protected in place as relocation of this pole would necessitate a shutdown of the entire redundant system, which is both costly and has the potential to impact the surrounding area. **Our plan to retain the existing configuration of the SR 45/2nd Street interchange allows this pole to remain in place.**

Vectren Energy: Vectren Energy Transmission has an existing 16" high pressure gas main on the west side of I-69 at both Fullerton Pike and Tapp Road. The existing line is located within a 50 foot

easement, which Vectren has requested be retained outside the LARW. INDOT has recently converted this relocation to a Type 1 relocation and although the this agreement will now be between the Utility and the State, easement acquisition for this relocated facility has the potential to impact scheduling of Phase 1 of construction. Our team will develop workarounds, like the one we proposed



Figure 4.2-26: CBU Lift Station on Vernal Pike

in an ATC which would allow the transmission line to remain in place until the bypass line is installed and two diversion valves are installed. The existing line could then be abandoned in place.

City of Bloomington: City of Bloomington Utilities (CBU) exists throughout the corridor at the southern end of the project. CBU has developed preliminary work plans for review by both INDOT and the development teams. In reviewing the work plan provided by the City and in a meeting held on October 10, 2013, the team has identified three requests by CBU which should be considered a betterment, meaning the costs of such request should be paid for by CBU:

- Dual casings at every crossing of I-69. The second casing is for future use and should be considered a betterment.
- Casings for sewer crossings. Per the INDOT Utility Accommodation Policy, one casing is required for crossings of utilities under pressure. Casings for gravity systems should be considered at the request of the utility and thus a betterment.
- Casings for future utilities. CBU is requesting several casings for future water line crossings.

4.2.1.4.b Construction Staging

In addition to those utilities listed above, we have created a Utility Matrix to continually track progress of all utilities at specific locations, expanding upon the Matrices provided by IFA during the bidding phase of the project. Our team has added tracking information such as required relocation timeline, agreement status, prior rights

determinations and comments. This matrix consists of 208 line items that will be used throughout design and construction of the project to guarantee utilities do not affect the critical path schedule.

4.2.1.4.c Coordination with Utility Owners

The I-69 DP Team has attended and/or held meetings with utility companies listed in **Figure 4.2-27**. In these meetings, we gained valuable insight including location specific solutions for protection-in-place and/or utility relocations which will be utilized and further expanded during final design to complete the relocation agreements and the relocations themselves in a timely manner and within budget. We will continue this proactive coordination during final design.

Date	Utility
Sept. 25, 2013	IFA Utility Forum
Oct. 10 & Dec. 19, 2013	Vectren Energy
Oct. 10, 2013	Hoosier Energy Rural Electric Cooperative
Oct. 24, 2013	Indiana University
Oct. 24 & Dec. 20, 2103	Duke Energy
Oct. 10 & Dec. 19, 2013	City of Bloomington Utilities
Oct. 10 & Dec. 19, 2013	Smithville Communications
Oct. 11, 2013	Washington Township Water Corporation
Oct. 24, 2013	AT&T Distribution
Dec. 20, 2013	South Central Indiana REMC

Figure 4.2-27: I-69 DP Team Utility Meetings

4.2.2 Design-Build Management Approach

The I-69 DP Team's approach to D-B management is based on the full integration of design, construction and quality control. This allows our team to provide timely input during the process to efficiently and effectively fulfill the IFA goals.

4.2.2.1 Organization

4.2.2.1.a Project Management Organization for Design and Construction

The I-69 DP Team organization will provide services of the highest quality, consistent with the best transportation P3 management practices and in accordance with the requirements of the RFP.

Section 4.1.1.a.i and Figure 4.1-5 identifies our overall project management organization and the participating firms and individuals involved in the design and construction of the project.

4.2.2.1.a.i Management Approach for Design Development and Coordination

Vicente Ferrio, our Construction Manager, will be responsible for the overall management of the D-B Team. Our Lead Engineer, Mike Riggs will manage the design team and coordinate with Vicente throughout the D-B process. This will result in an integrated, efficient, quality project that meets all of the IFA/INDOT objectives. Our coordination approach will include: Early Design Workshop, Internal Morning Design Coordination Briefings, Design Status Meetings and Task Force (TF) Meetings. All meetings will be held at the Project Office in Bloomington. Each of these meetings is described in **Figure 4.2-28**.

4.2.2.1.a.ii Approach for Design Delivery Project Team Location

The Key Personnel of the I-69 DP Team will be located in the Project Office 100 percent of the time as required in the PPA. The other design members will perform their work in their respective offices, but will be available to attend meetings and perform other activities at the Project Office. It is anticipated that the Project Office will be in Bloomington, Indiana.

Integration of Design to Ensure Consistency and Quality



To ensure consistency and quality, all I-69 DP Team members will be trained in a full-day workshop known as: "Our Success Design-Build Processes" which will include but is not limited to:

- Contract Requirements
- Documentation Requirements
- Filing Requirements
- Quality Control Requirements
- Electronic Document Procedures
- Utilization of INDOT CADD Standards
- Use of Project Wise to Control the Integrity of our CADD files
- Understanding the Baseline Project Schedule
- Project Team Commitments

The I-69 DP Design Team and the Construction Team has been working closely together for the past six months to develop a superior design and approach to constructing the project.

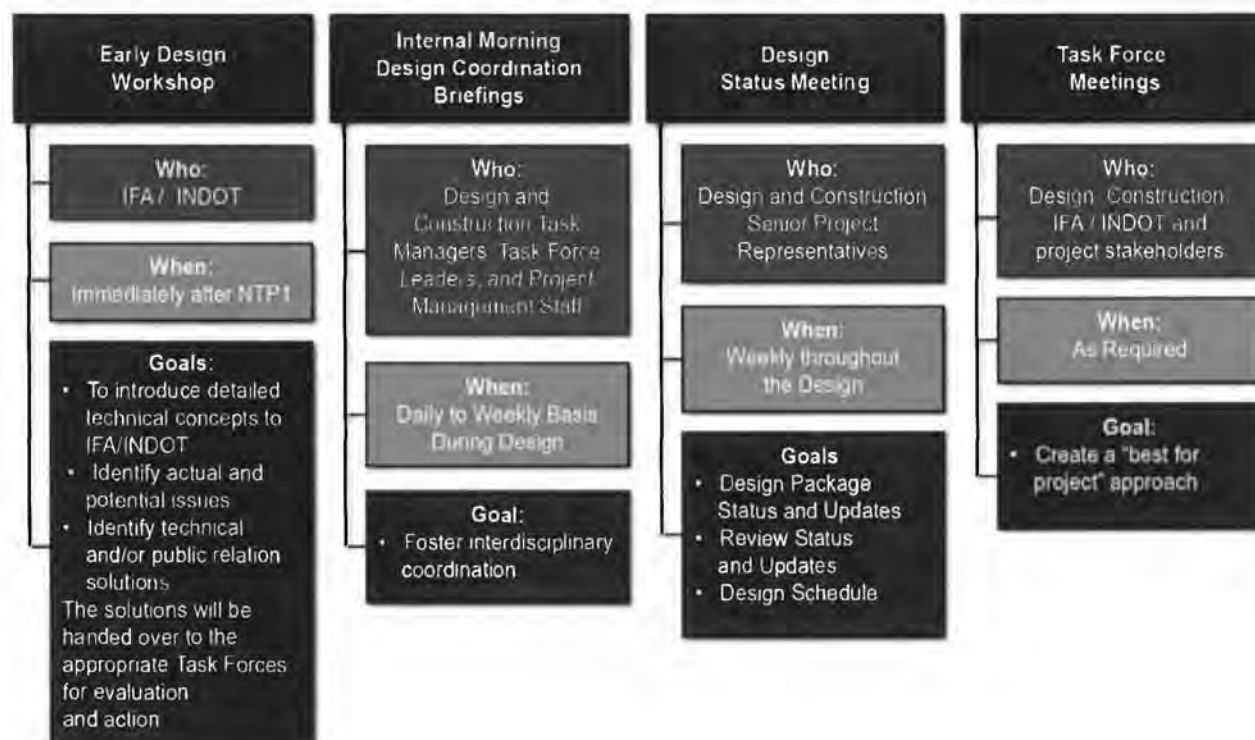


Figure 4.2-28: The I-69 DP Team Coordination Meetings

4.2.2.1.b Internal Organization Systems

The I-69 DP Organization System enables full design and construction integration. We have a proven management and delivery team that is results based driven and has successful completed projects similar in nature to this project. The features of our Organization System include:

- Safety First Mentality
- Integration of the Design and Construction Personnel
- Ownership of Work
- Accurate Reporting
- Informed Decision Making
- Coordination with Utilities and Project Stakeholders
- Coordination with O&M Personnel
- Dispute Resolution at the Lowest Staff Levels
- Schedule Driven Results

4.2.2.1.b.i Management Approach for Construction



As is shown in Figure 4.1-5 (the I-69 DP Team Organization Chart), clear lines of responsibility have been determined from

the Construction Manager to the various managers and superintendents. The Construction Manager will be responsible for coordinating the activities of the various managers and superintendents who in turn will manage subconsultants and subcontractors. The managers and superintendents will be empowered to make key decisions affecting the day-to-day construction of the Project. Weekly meetings will be held with the entire construction management team to plan for upcoming activities, and to discuss and reach resolution on any outstanding issues. Another very key element in the management approach for construction will be the inclusion of the design team in interaction with the construction team. For the past six months, the designers have been working closely with Corsan staff and representatives from the three major subcontractors (Gradex, E&B Paving and Force Construction) to ensure that the preliminary designs we are presenting have been fully vetted for constructability and value. This interaction will continue throughout the project.

4.2.2.1.b.ii Approach to Providing a Unified Work Effort

For design, we have broken the project into ten Design Units, each of which will be led by a Design Unit Manager, who will report to the Lead Engineer. Within the Design Units, various AZTEC/TYPSA disciplines and subconsultants will be tasked to develop portions of the design. The Design Unit Manager will be responsible for leading the Design Unit's efforts, making sure that all work efforts are unified. We will utilize Project Wise as a collaboration tool to share information between Design Unit team members. The Lead Engineer will manage the Design Unit Managers, making sure that they have adequate resources, clear design direction and that questions and issues are resolved in an expeditious manner. As with the construction team, the Design Unit Managers will be empowered to make key decisions affecting the day-to-day design of the Project.

Breaking the design portion of the Project into Design Units, each of which will have a Design Unit Manager, improves the span of control for the Lead Engineer.

4.2.2.2 Design-Build Baseline Schedule

The I-69 DP Team utilized Primavera P6 to develop the Design-Build Baseline Schedule. All major tasks associated with the design, construction, and O&M have been included and the critical path items have been determined for monitoring purposes. The Schedule is more fully discussed in Section 4.1.2 and Appendix H-3.

4.2.2.2.a Schedule

4.2.2.2.a.i Approach for Updating Schedule

The I-69 DP Team Lead Scheduler will update the baseline schedule on a monthly basis beginning with the first full month after receiving NTP1. The process will involve obtaining and documenting the percentage completed for all tasks started or in progress from the task manager in-charge of each work item. Once this information has been obtained, the P6 schedule will be updated and the appropriate data entered to determine the monthly progress for the project.

We will submit monthly progress reports to the IFA no later than 7 business days following the end of each month. The progress report will contain the updated project schedule along with a narrative including the following information:

- A description of the Project progress as a whole, including all phases of the Work. We will identify start date and completion dates on major areas of the Work. The information will be grouped based on the WBS
- A summarization of QA/QC findings
- Identification of any pending or resolved claims during the period
- Identification of schedule activities planned for the upcoming period
- Identification of any problems and issues that arose during the month and issues that remain to be resolved
- Summarization of resolution of problems/issues raised in previous progress reports or resolved during the period
- Identification of Critical Path issues and proposed resolution
- Provision of a report on the Project Schedule Deadlines showing the schedule dates for the immediate prior month and current month. We will provide a narrative to explain variations greater than 30 days
- Provision of monthly expenditure projection curves
- Provision of monthly earned value report for all activities and a total earned value for the Project
- Identification of requested and/or required IFA actions for the next month
- Provision of digital progress photographs that accurately depict project progress as outlined in the Progress Report narrative

4.2.2.2.a.ii Work Breakdown Structure (WBS)

The WBS defines tasks that can be completed independently of other tasks, facilitating resource allocation, assignment of responsibilities, and measurement and control of the project.

A complex and/or large project is made manageable by first breaking it down into individual components in a hierarchical structure, known as the WBS. The I-69 DP Lead Scheduler has developed a WBS for this project that follows the following elements:

- The scope of the deliverables of the project
- The start and end time of the deliverables of the project
- The budget for the deliverables of the project
- The name of the person, group, discipline, or division responsible for the deliverables of the project

This detailed Primavera P6 schedule is contained in Appendix H-3.

4.2.2.2.a.iii Approach to Integrate Subcontractors

The I-69 DP Lead Scheduler has prepared the preliminary baseline schedule with input from subcontractors and suppliers and we will continue to integrate their input during monthly schedule updates to provide accurate information in the monthly progress reports. Future integration will be accomplished through a variety of methods including phone conversations, e-mails, visits to supplier's offices, and discussions with subcontractors at regularly scheduled project team meetings. We believe that the schedule is only as good as the information input and therefore we fully understand that all items must be updated accurately.

We will require our subcontractors to ensure schedule compliance.

4.2.2.2.a.iv Approach to Manage Resources and Activities

The I-69 DP Lead Scheduler will integrate the cost control module within Primavera P6 to manage resources and activities to take full advantage of the scheduling software capabilities. Should the work be delayed on any critical path item for the greater of either 30 days in the aggregate or the number of days in the aggregate equal to 5 percent of the days remaining until Substantial Completion, the next Project Status Schedule shall include a recovery schedule demonstrating the proposed plan to regain lost progress and how to achieve Substantial Completion by the specified date.

Sometimes the critical path items are not resources but are rather a supply issue. In this case, we will call other suppliers to try to obtain the materials sooner or we may ask to accelerate supplies scheduled in

later months to make up the negative schedule float. We have the experience and resources to deliver this project on our proposed schedule.

4.2.3 Design-Build Quality Management

Our DBQMP consists of the Design Quality Management Plan (DQMP) and the Construction Quality Management Plan (CQMP).

The I-69 DP Quality Manager, Mario Benitez, will be responsible for executing the Design-Build Quality Management Plan (DBQMP). The number one goal of our DBQMP is to ensure that the work conforms to the requirements of the PPA. We will produce the DBQMP by following the guidelines described in Section 2 of the Technical Provisions.

Implementation of a comprehensive and well-executed DBQMP will result in superior quality deliverables, shorter review times and a superior design product. I-69 DP has developed the plan to ensure preparation of quality products and compliance with IFA/INDOT requirements.

4.2.3.a Design Quality

Role	Responsibilities
Design Quality Manager (Tom Maki)	<ul style="list-style-type: none"> • Overall implementation of the DQMP • Verify that all design comments are appropriately resolved and incorporated • Verify that the review becomes part of the project record
Design Unit/Task Managers	<ul style="list-style-type: none"> • Selecting reviewers • Assembling the review packages for distribution by document control • Consolidating review comments • Resolving comments and their final disposition • Ensuring that comments are incorporated or addressed in their discipline's packages.
Document Control Manager	<ul style="list-style-type: none"> • Distributing the review packages • Recording receipt of review comments • Distributing the comments to the Design Unit/Task Managers • Maintaining a clear record of the reviews and updated design deliverables

Figure 4.2-29: Quality Team Responsibilities

All design documents that are submitted for formal review or release undergo detailed quality control checks beforehand. Detail checking is completed on all deliverables, including the following: Plans, Calculations, Computer Program Input, Specifications or Special Provisions, Structural Design Plans and Calculations and Studies, Reports, other Design Documents.

Several review procedures define the ongoing review of the design as it progresses from proposal stage to completed plan documents. These procedures include the following:

- **Coordination Reviews** that assure all aspects of the design are considered as the design progresses. These reviews are accomplished by routing the design documents of one discipline to all other disciplines for review and comment.
- **Technical Reviews** that utilize the technical expertise of senior staff to enhance the design process. The reviewers are chosen for their prior experience and extensive background and experience on similar projects. Reviewers are not involved directly in the project design, their reviews focus on assuring that the design meets all project requirements, utilizes the best technology and methodology available, and includes client-specific preferences. Their input is given periodically in formal comments that are written and tracked until resolution is reached

and the comments are incorporated into the design.

- **Constructability Reviews** assure that construction related expertise is incorporated into the design. Experienced construction engineers and managers will complete these reviews, adding practical construction considerations to the design. The reviews include the use of tracked and formal comments which are returned to the design team in written form. **The I-69 DP Team has been doing exactly this for the past six months, developing the preliminary design and Technical Proposal.**
- After all reviews are completed and comments are received, the Design Unit Team will assess the comments and meet with the reviewer to resolve them. Tracking forms will document this progress. Once all comments are resolved, the design package will be forwarded to the next steps in the agency review process.



The DQMP goes into detail for each of the listed functions, giving staff the quality roadmap for the project design development. Procedures will be included for preparing and checking all drawings, specifications, and other design submittals to ensure that they are independently checked by experienced and qualified professionals. Our Design Quality Management Process is shown in Figure 4.2-30.

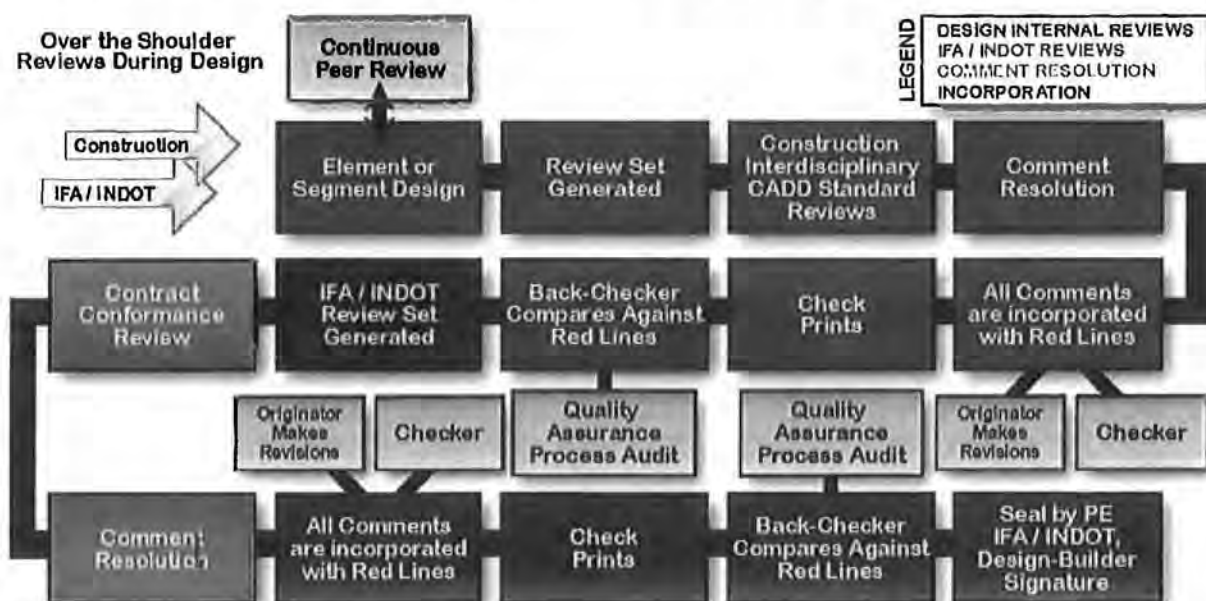


Figure 4.2-30: I-69 Design Quality Management Process

How the IFA/INDOT will be Involved

IFA/INDOT will have quality control personnel co-located with I-69 DP staff at the Project Office to oversee the I-69 DP Team QC efforts. On occasion, other organizations, such as municipalities, counties, or utilities will request to review and comment on the design. These reviews will be scheduled and scoped per the IFA's direction. The reviews will be documented and comment tracking forms will be used and entered into the standard review and comment resolution process.

Audits will be periodically performed by the IFA quality management staff to certify that the QC procedures and all applicable reviews have all been accomplished.

Proposers Approach to Working Relationships and Responsibilities

The I-69 DP Team believes positive working relationships lead to an on-time or early delivery of a high quality project. Through the one-on-one meetings with IFA/INDOT, we have begun development of a positive relationship. Internally, the six months of work between our designers, contractors and the concessionaire has built the foundation for continued synergy, which we will carry forward into final design, construction and the Operating Period. We will continually monitor the working atmosphere on the project and make improvements as necessary. All team members will fully understand their responsibilities and workshops will be held on a regular basis for updated procedures and policies.

IFA/INDOT Oversight Procedures to be Implemented

IFA/INDOT will perform Owner reviews in accordance with the contract requirements. Formal final reviews will include the use of electronically tracked, formal comments delivered to the design team for resolution. Each comment is tracked until resolution between the IFA/INDOT's reviewer and the designer is reached and the comment is incorporated into the design.

Conformance with Federal Oversight Requirements

The I-69 DP Team will review all Federal guidelines and implement procedures and training to all staff in

the Federal processes. We will incorporate the Federal guidelines into the design and design review procedures and follow through with the resolution of outstanding issues.

How Design Quality Management will be Documented

The Design Quality Manager will be responsible for the documentation of design quality management. All staff will be required to enter their quality management actions into ProjectWise (the document control system) at regular intervals.

The I-69 DP Team document control system will have a quality management tracking component that will contain all details of the quality management functions.

How Changes will be Made to Correct Design

Verification will be performed in accordance with DQMP procedures to ensure that the design packages have incorporated all applicable requirements and met all design standards. Validation will be performed in accordance with planned procedures to ensure that the resulting product is capable of meeting the requirements for the specified application and intended use. Non-conformances that are discovered will be addressed by corrective actions with follow-up by quality management staff for completeness. The I-69 DP Team will follow the detailed prescribed procedures in the DQMP for the resolution of non-conformances.

4.2.3.b Construction Quality



The benefits of a P3/DB project include faster delivery, improved constructability, less cost growth and early cost certainty. To assure the Owner of a quality project, the I-69 DP Team will have an excellent CQMP managed by experienced quality professionals.

The Federal Highway Administration's Transportation Construction Quality Assurance (QA) Reference Manual defines QC as "The system used by a contractor to monitor, assess, and adjust their production or placement processes to ensure that the final product will meet the specified level of quality"

The Construction Quality Manager will report directly to the overall Quality Manager who in turn reports directly to the Board of Directors. This

conveys support for quality control and minimizes potential conflicts with the production staff. The CQMP describes all of the quality control activities that are required to meet the specified level of quality.

Our CQMP consists of the following core elements:

- Contractor Quality Control
- Agency Acceptance
- Independent Assurance
- Dispute Resolution
- Personnel Qualifications
- Laboratory Accreditation

Coordination and communication between the design-builder and the Owner is essential for effective quality management. By working together within a well-defined QA program, the IFA and the D-B team can meet the goal of delivering a high quality project to the travelling public.

CQMP reviews and audits at prescribed intervals will be used to monitor conformance and success in meeting plan goals. The reviews will consist of an evaluation of the effectiveness of the quality processes.

Approach for Integrating with Design

Working with the Construction Quality Manager, the Design Quality Manager will assure integration of the construction quality process into the design areas. When the Project is being constructed, the Design Quality Manager will verify that all engineering design requirements are met. Design reviews with construction personnel will be conducted to evaluate that appropriate design, safety, environmental, and technical standards are being incorporated into the final contract documents. These design services continue during construction, as follows:

- Field design changes
- Notice of design changes
- Requests for information from the field
- Coordination with the construction contractor to answer and resolve any design related questions
- Participation in the construction conferences
- Participation in construction meetings when requested
- Review of shop drawings, project information, shop and material certifications and test results
- Review requests for contractor change orders and provide recommendations

Discussions and decisions rendered during these meetings or communications will be documented in writing. These decisions will be considered as the recommended course of action and will follow the procedures outlined in the DQMP and CQMP.

Our Construction Quality Manager, Jason Bagwell, is responsible for overall implementation of the CQMP. The I-69 DP CQMP will detail the procedures, criteria and directives to assure conformance with the contract. The plan will highlight inspection requirements as well as management procedures and document preparation and control for such items as Inspector Daily Reports, Field Supplemental Agreements, Work Orders, Supplemental Agreements, and claim file development. Our construction quality management process is shown in Figure 4.2-31.



All personnel performing sampling and testing for QC used in the acceptance decision, verification, or Independent Assurance (IA) will be qualified. The D-B contract documents will specify the minimum qualifications for design-build personnel performing QC sampling, testing, and inspection. Minimum qualifications for the I-69 DP quality management personnel will also be clearly stated in the CQMP to ensure staff has a thorough understanding of QA principles and experience working under QA specifications.

I-69 DP will follow the processes and procedures contained in the CQMP plan and will document their quality control activities. Major features of the CQMP plan address quality objectives including: Analysis, Strategy, Staff, Administration, Procedures, Certifications, Records, Subconsultant Quality Management.



An example of our CQMP process, specifically our paving workflow chart, is shown in Figure 4.2-32. Quality Assurance certifications for construction materials will be checked for conformance to project standards and specifications upon delivery to the project site. Materials will be tested by CEI staff prior to placement and used only when quality control measures have been verified. All material certifications will be filed in the field office for ease of access. Whether discovered by the D-B Team or the IFA, materials or workmanship that do not meet

the specified level of quality will be properly documented, including the nature of the non-conformance, location, extent, and disposition. The non-conformances will then be corrected as prescribed in the CQMP.

How the IFA/INDOT will be Involved

IFA/INDOT will be involved by having representatives at meetings concerning the development of the construction portion of the project. IFA/INDOT will convey their industry practices related to construction at each step of the development process.

During construction, IFA/INDOT will perform Independent Assurance (IA) functions related to construction. The purpose of the IA system is to assure the reliability of all data used by the agency in the acceptance determination. This includes the agency's verification data and the design-builder's QC data. This ensures validated quality control data is included in the final acceptance determination. Independent Assurance is intended to confirm that the sampling and testing activities performed by the agency and the design-builder are conducted by qualified personnel using proper procedures and properly calibrated and functioning equipment.

An engineering firm not associated with the I-69 DP Team or IFA will be retained to implement the

CQMP procedures to control inspection, measuring, and test equipment. The Quality Manager will work directly with this firm to ensure that they are implementing the control procedures without bias to the DB Team.

On this Project, it may be challenging to conduct verification testing at the specified rate due to the large quantities of material being placed and the fast-paced nature of the work. The I-69 DP Team will work cooperatively with IFA/INDOT to provide access and to find solutions to these issues to ensure quality will not be sacrificed due to large material quantities or fast-paced work.

Also, visual inspection will be a key part of IFA/INDOT acceptance on this project. We will provide all access for inspection of the component materials at the time of placement or installation, as well as the workmanship and quality of the finished product.

How Construction will be Documented and Corrected

During construction, a team of experienced construction inspectors and technicians will monitor and document all aspects of the construction process. Material tests will be completed at an acceptable frequency and reports issued for quality assurance record keeping.

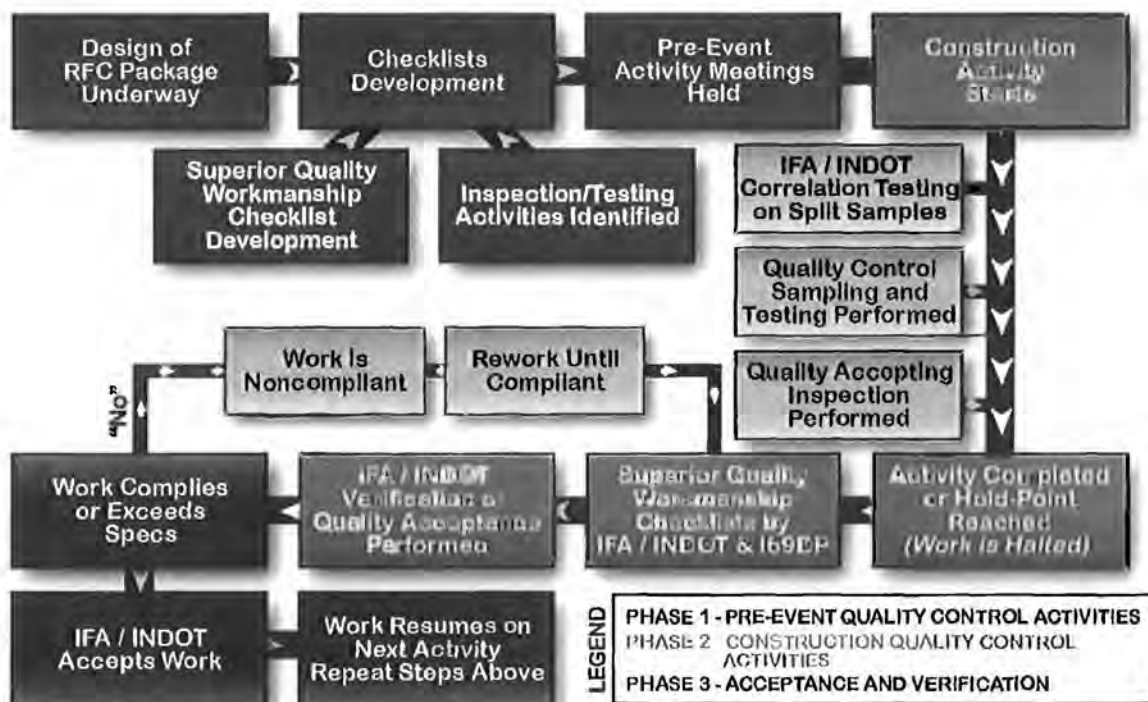


Figure 4.2-31: I-69 Construction Quality Management Process

The corrective action and dispute resolution process

will be unbiased and timely. To address testing related disputes, the use of retained splits of samples will be used in the acceptance decision with a well-defined decision process to determine the outcome of the dispute. The I-69 DP Dispute Resolution process is illustrated in Figure 4.1-11.

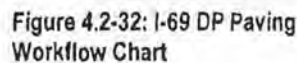


EXHIBIT 2-G

PRELIMINARY OPERATIONS AND MAINTENANCE PLAN

[attached]

4.3 Preliminary Operations and Maintenance Plan



The main objective of Operations and Maintenance (O&M) is to safely provide high quality and rapid response service and to maintain the roadway with reduced disruption to the traveling public.

Isolux currently manages eight highway concessions. For all eight, Corsan has been or is the D-B Contractor. Two of the eight are under construction and three are fully operational. The remaining three, in which the construction part of the contract involves upgrades and expansion of existing roads, are simultaneously under construction and in operation.

Isolux has significant experience providing O&M activities to the satisfaction of its clients on a number of P3 projects. Safety and mobility are our main goals.

Isolux is currently performing O&M activities for more than 850 miles of highways/roads, including divided and undivided highways. The experience of Corsan and Isolux undertaking this type of O&M contract in an urban environment similar to I-69 Section 5 is listed in **Figure 4.3-1**.

4.3.1 Operations and Maintenance Technical Solutions

The proposed I-69 DP Operation and Maintenance Team (O&M Team) will provide the IFA with

innovative and proven O&M technical solutions to maintain the safe and comfortable use of I-69 Section 5 by the traveling public throughout the Project's operational lifecycle. This will be accomplished by employing a variety of measures to ensure safe, cost effective routine maintenance activities; and through well managed scheduling and delivery of necessary rehabilitation works.

O&M will be managed according to our P3 Project Management System (P3PMS, as defined in **Section 4.1: Preliminary Project Management Plan**) and will comply with the requirements stated in the PPA and the Technical Provisions

4.3.1.1 Roadway and Bridge Operations

The O&M Team will be responsible for routine patrolling of the Project and for the Incident response during both the Construction Period and Operating Period O&M Limits. Incident detection and response will be fast, efficient and precise to ensure safe use of the roadway. The O&M Team understands the local context, including interaction and interfaces with stakeholders, local authorities, public information provision and the anticipation and management of potential hazardous situations.

The O&M Team will initially develop an Operations and Maintenance Plan (OMP) prior substantial completion that will be updated in order to address the transition to the Operating Period, and at least annually during the whole life of the Project to ensure all procedures are revised, upgraded or replaced as necessary.

Project	Country	Isolux Share	Length (mile)	Number of lanes	Status	Urban Areas	O&M Annual Cost
Via Bahia	Brazil	70%	423	1+1 and 2+2	In Operation/ Under Construction	Yes	
NH-1	India	61%	181	2+2 and 3+3	In Operation/ Under Construction	Yes	
NH-2	India	50%	120	2+2 and 3+3	In Operation/ Under Construction	Yes	
NH-6	India	50%	83	2+2	Under Construction	Yes	
NH-8	India	50%	58	3+3	Under Construction	Yes	
A-4	Spain	51%	42	2+2 and 3+3	In Operation	Yes	
Monterrey Saltillo	Mexico	100%	59	1+1 and 2+2	In Operation	Yes	
Perote Xalapa	Mexico	50%	37	2+2	In Operation	No	

Figure 4.3-1: O&M Contracts

4.3.1.1.a Monitoring the Roadway

The O&M Team's priority is safe passage for the traveling public and project staff. During the Construction and Operating Periods, the roadway will be patrolled 24 hours per day, every day of the year. The O&M Team will provide customized patrol vehicles dedicated to the Project. We will use equipment such as movable flashing arrows for safer traffic management during incidents or maintenance activities.



Figure 4.3-2: One of our customized patrolling vans.



The O&M Team will also provide two motorcycles in order to reach the Incident site as quick as possible to comply with the target set forth in the Technical Provisions Attachment 18-1, Performance Requirements and Measurement Tables A&B (item 13.2.)

Detection of Emergencies:

The O&M Team will have access to several sources of information in order to promptly detect and respond to incidents:

- O&M Team roadway patrols
- Customer contact line
- Weather forecast monitoring
- Traffic Wise
- Web-site and I-800 system for 24 hours messages

Response to Emergencies:

The O&M Plan will include the Emergency Response Plan (ERP) that will designate the responses to be implemented in the event of an Incident within the O&M Limits. The ERP will include a comprehensive list of Incident types that could occur on the roadway and will include requirements and strategies for Incident detection,

I-69 DP will have the resources to provide quick Incident Response and keep Users safe.



responsibilities and procedures for Incident verification, and specific response strategies for each.

Upon notice of an event, the O&M Team will immediately inform the INDOT Traffic Management Center (TMC) and the Hoosier Helpers. After the detection of an incident, the O&M Team will proceed to secure the site and will provide immediate assistance. Patrollers located either at the O&M Management Center (OMMC) or patrolling on the Project, will be able to provide Incident response in less than 30 minutes. O&M Team managers will be available, if necessary, to attend to the Incident.

The O&M Team's focus will be to ensure safety for the traveling public, adjacent landowners and all Project staff. Team members will have specialized equipment on hand to secure the site. Quick installation of appropriate temporary traffic management measures will reduce the impacts of the Incident, including secondary crashes and excessive traffic delays.



TRAFFIC WISE

Figure 4.3-3: We will work closely with the Hoosier Helpers and Traffic Wise

Keeping the TMC and Users Informed

The O&M Team will immediately inform and continuously update the TMC of any Incidents, its impact on traffic, response actions undertaken, restoration of normal traffic flow and any related information.

Once the O&M Team has informed the TMC, we will use the latest technologies and social media, such as Twitter, Facebook and email to inform users. This combined approach will minimize the impacts of Incidents and provide timely and accurate information to the Users of the facility.

4.3.1.1.b Coordination with Emergency Service Providers

Prior to the start of construction, the O&M Team will work with INDOT to coordinate the ERP with the specific emergency service providers, law enforcement agencies and relevant private sector responders. Within the ERP will be procedures to liaise with emergency services. Meetings will be held with the different agencies and departments involved on a monthly basis, to discuss any adjustments necessary to the ERP and to review any Incidents that did happen and how management of incidents and accidents could be improved.

In an emergency situation, the O&M Team will inform the appropriate authorities and will implement the procedures established in the ERP. An O&M Team roadway patroller will be sent to ensure the safety of the site and the traveling public. Once the emergency responders have arrived on site, they will take the lead. The O&M Team will stay on site to assist in traffic management under the direction of the emergency responders.



The O&M Team will also participate in quarterly traffic incident management team meetings led by INDOT. The ERP will be updated to take into account feedback received from INDOT and lessons learned. After consultation and discussion with INDOT, a contract will be established with local towing companies to enable them to respond to Incidents in accord with the Performance Requirements set forth in the Technical Provisions.

4.3.1.1.c Accident Analysis and Implementation of User Safety Improvements

Accidents will be reported on a daily and monthly basis, in accordance with requirements defined in the ERP. The quarterly Operations Report issued to IFA will include a summary of these reports.

Three different kinds of events are considered within the O&M Team's review and assessment process:

- Near misses: events that in slightly different conditions, would result in an Incident
- Incidents: events with non-significant consequences
- Accidents: Incidents with significant consequences

The ERP will describe the methodology for the tasks shown on the Figure 4.3-4.

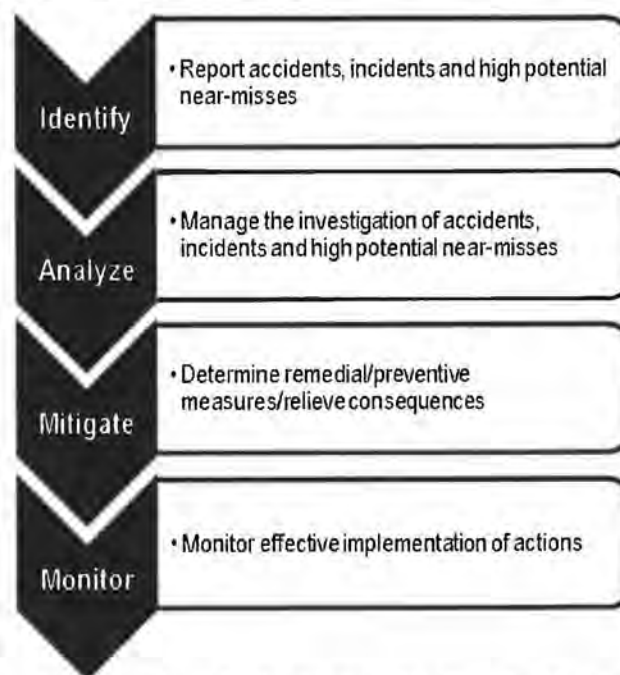


Figure 4.3-4 The O&M Plan will describe the methodology to accomplish the above tasks.



Data provided will be analyzed by the O&M Team to identify the root causes of the events. Furthermore, we will obtain a historical record of traffic data, enabling a comprehensive analysis of traffic incidents to implement the correspondent measures to improve the motorist's safety.

Enhancing the safety of road users and project workers will be a priority for the I-69 DP on all O&M activities.

I-69 DP understands the importance of training and will periodically facilitate emergency exercises with the participation of emergency services and various third parties (see 4.3.2.1.d). At the end of each exercise and after each significant accident, a debriefing meeting will take place and a feedback report will be prepared to assess and refine procedures. In addition, full time maintenance staff will be responsible for cleaning litter and removing debris and graffiti in accordance with the Technical Provisions Attachment 18-1, Performance

Requirements and Measurement Tables B (items 1.1. and 3.10.)



The O&M Team will regularly carry out safety audits to assess effectiveness of the safety procedures for the Project, identify high accident locations that will be registered in the I-69 MMS (see section 4.3.1.2.h), implement mitigation measures, and review the Good Industry Practices. Any mitigation measures introduced throughout this process will be recorded and monitored to verify their effectiveness.

4.3.1.2 Routine Maintenance

I-69 DP's Routine Maintenance approach is centered on proactive preventive maintenance. Routine Maintenance is critical to maintain a safe and reliable roadway system. The Maintenance Plan, together with a frequent inspection program, ensures early identification of maintenance needs and their quick implementation to prevent small deteriorations from becoming larger problems.

4.3.1.2.a Life Cycle Cost Analysis over the Duration of The Agreement



The O&M Team will be fully involved throughout design development to assist with maintenance and lifecycle optimization of design and the anticipation of resulting maintenance costs.

During the design stage, I-69 DP Team is committed to ensure the designed infrastructure assets are durable and maintainable.

To determine expected material durability and Useful Life, I 69 DP will use benchmark data from its extensive list of projects in operation, combined with up to date Good Industry Practice guidelines and industry research data.

For each element of the project, the O&M Team will analyze potential technical solutions; accounting for variability of cost, increasing labor rate, and impacts of maintenance on roadway resources availability. The analysis includes market research, and requests for quotations to compare and choose the most appropriate local firm to carry out each of the different Rehabilitation Works. Data bases and performance records from previous experiences will

Our primary O&M goal is to provide a high level of service to the traveling public while considering safety, availability, and reliability. Therefore we will implement continuous improvement actions measured against Performance Requirements

also be used to compare with the prices received. We will use escalation index databases for the items whose market prices are more sensitive to market conditions. This way, we will be able forecast inflation and estimate future prices for elements such as asphalt, steel, fuel oil, labor, or construction machinery.

A Rehabilitation Work Schedule with a five-year renewal works schedule, updated annually, will be submitted to the Department. The Rehabilitation Work Schedule (see preliminary schedule in Figure 4.3-25) will assess annual Performance Requirements.

4.3.1.2.b Details and Locations of Operation and Maintenance Management Center

For the Operating Period, the I-69 DP Team will construct the Operation and Maintenance Management Center (OMMC). These facilities and features of the OMMC will include:

- Parking lot for staff and visitors
- Vehicle and spare parts storage covered area
- Office building with public reception area
- Covered storage facility for de-icer materials



Figure 4.3-5: One of our OMMC office buildings

We believe that one of the parcels close to Sample Road as identified in ATC 22 would be an optimum location for our OMMC due to the following reasons:

- Its central location within the middle of the Project, allowing for better incidence response
- Easy access to the Project via the new Sample Road interchange.
- Greater availability of property
- More affordable prices compared with other areas adjacent to the project (for example, areas near the SR-46 interchange
- All the parcels are already affected by the right of way takes for the Project

The possible OMMC sites are shown in **Figure 4.3-6**



Figure 4.3-6: Possible OMMC parcels

4.3.1.2.c Preliminary List of Specialized Maintenance Equipment

During Construction Period, the O&M Team will use customized equipment for the maintenance activities they will directly carry out, such as mowing and vegetation control, snow and ice removal, incident response and assistance to Users. The D-B Contractor will be responsible for the rest of the routine maintenance works. The assignment of maintenance tasks during the Construction Period is better defined in **Figure 4.3-8**.

All our vehicles (snowplows, trucks, patrolling pickups) will be equipped with GPS to allow real-time tracking by O&M supervisors or other authorized parties

The O&M Team's equipment for O&M During and After Construction will include the items shown in **Figure 4.3-7**.

O&M During Construction Equipment	O&M After Construction Equipment
4 Pickups	5 Pickups
2 Mid-size Cars	2 Mid-size Cars
2 Motorcycles	2 Motorcycles
1 Truck Mounted crane	2 Truck Mounted crane
1 Hydraulic Guardrail Installation Machine	1 Hydraulic Guardrail Installation Machine
3 Snowplows	3 Snowplows
2 Plows for Pickups	2 Plows for Pickups
4 Plow for Snowplows	4 Plow for Snowplows
2 De-icer Spreader and De-icer Tanks for Pickup	2 De-icer Spreader and De-icer Tanks for Pickup
	1 Man Lift
	1 Backhoe Loader
	1 Vibratory Roller
	2 Road Sweeper Cars

Figure 4.3-7: Specialized equipment for O&M

Other auxiliary equipment will include portable luminous arrow boards, portable changeable message signs, signal devices, trimmers, painting and welding equipment, and other equipment.

4.3.1.2.d Supply and Management of Maintenance Spare Parts



The O&M Team will use dedicated software to manage and monitor the supply and use of spare parts. This ensures an up-to-date inventory of all parts to support expected maintenance requirements plus a reasonable amount for emergencies. Quantities of spare parts used and ordered will be reviewed on an ongoing basis to identify and resolve any issues where parts are failing more often than expected. The most restrictive requirements for maintenance spare parts are light bulbs and electric equipment to support lighting maintenance, barriers, guardrail and impact attenuator components and signage elements, as set forth in sections 5, 7 and 8 of the Technical Provisions Attachment 18-1, Performance and Measurement Tables.



Within the scope of the Sustainability Management Plan that will be delivered nine months before the commencement of the Operating Period and updated each five years, as indicated in Figure 4.3-25 in section 4.3.2, recycling of waste oil, tires, tire scraps and light bulbs will be routinely done.

4.3.1.2.e Routine Maintenance Activities Approach

The O&M Team approach is to maximize self-performance of the basic Routine Maintenance activities and working with specialty subcontractors where necessary in order to carry out specialized maintenance. This will allow us to utilize the specialist's knowledge, together with Good Industry Practices and research data from the specialized subcontractors.

Routine Maintenance During Construction

We are fully aware that good coordination with the Contractor is vital to fulfill the requirements of the O&M During Construction, ensure a smooth transition and avoid future maintenance issues during the Operating Period.

During construction, we will split the O&M task as defined in Figure 4.3-8. We consider this the most sensible approach because in this way the Contractor will be responsible for ensuring their activities have a minimum effect on the existing infrastructure, as they will also be responsible for repairing whatever damage they may cause. Since they have the appropriate machinery and personnel in place for their construction activities, they will be in the best position to correct any defects and ensure that the Performance Requirements are achieved.

The rest of the activities will be monitored by the O&M Team through inspections in order to verify that the conditions maintain or exceed the initial values of the Baseline Asset Condition Report. The frequency and planning of these activities will be handled by the O&M Team as shown in Figure 4.3-9. Our Deputy Project Manager – Technical, will ensure the coordination between Corsan and the O&M Team.

The allocation of O&M responsibilities are defined in the DB contract already in place, and we have used this same strategy to great success in all projects in which there was a O&M During

Construction phase, (766 miles in total: A4 Highway in Madrid (Spain), NH1 and NH2 in India and Viabahia in Brazil).

Activity	Corsan	I-69 DP
Sweeping and cleaning	✓	
Repairs (pavement, structures, barriers, guardrails, pavement marking, etc.)	✓	
Mowing and vegetation Control		✓
Snow and Ice Control		✓
Incident Response		✓
Attention to Users		✓

Figure 4.3-8: O&M during Construction Responsibilities

Routine Maintenance during the Operating Period

After the construction is complete, the O&M Team will carry out all Routine Maintenance with in-house resources (see Routine Maintenance crews in Figure 4.3-10.) supplemented by specialty subcontractors for such activities as major repairs, special inspections of structures, pavement marking placement and winter maintenance support (if additional staff is necessary during winter events).

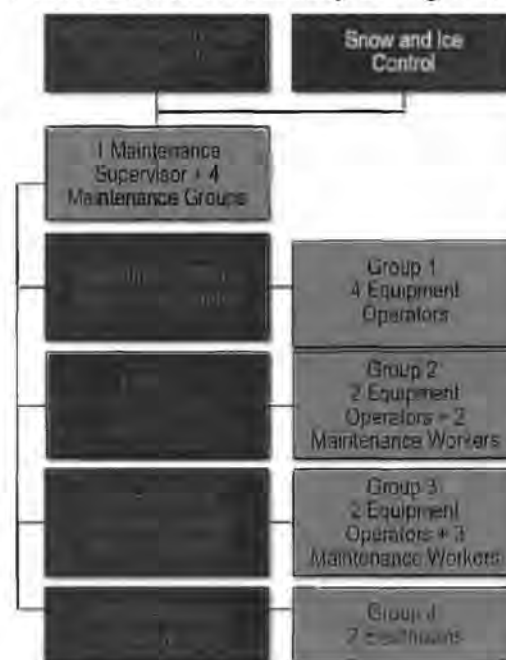


Figure 4.3-10: Routine Maintenance crews

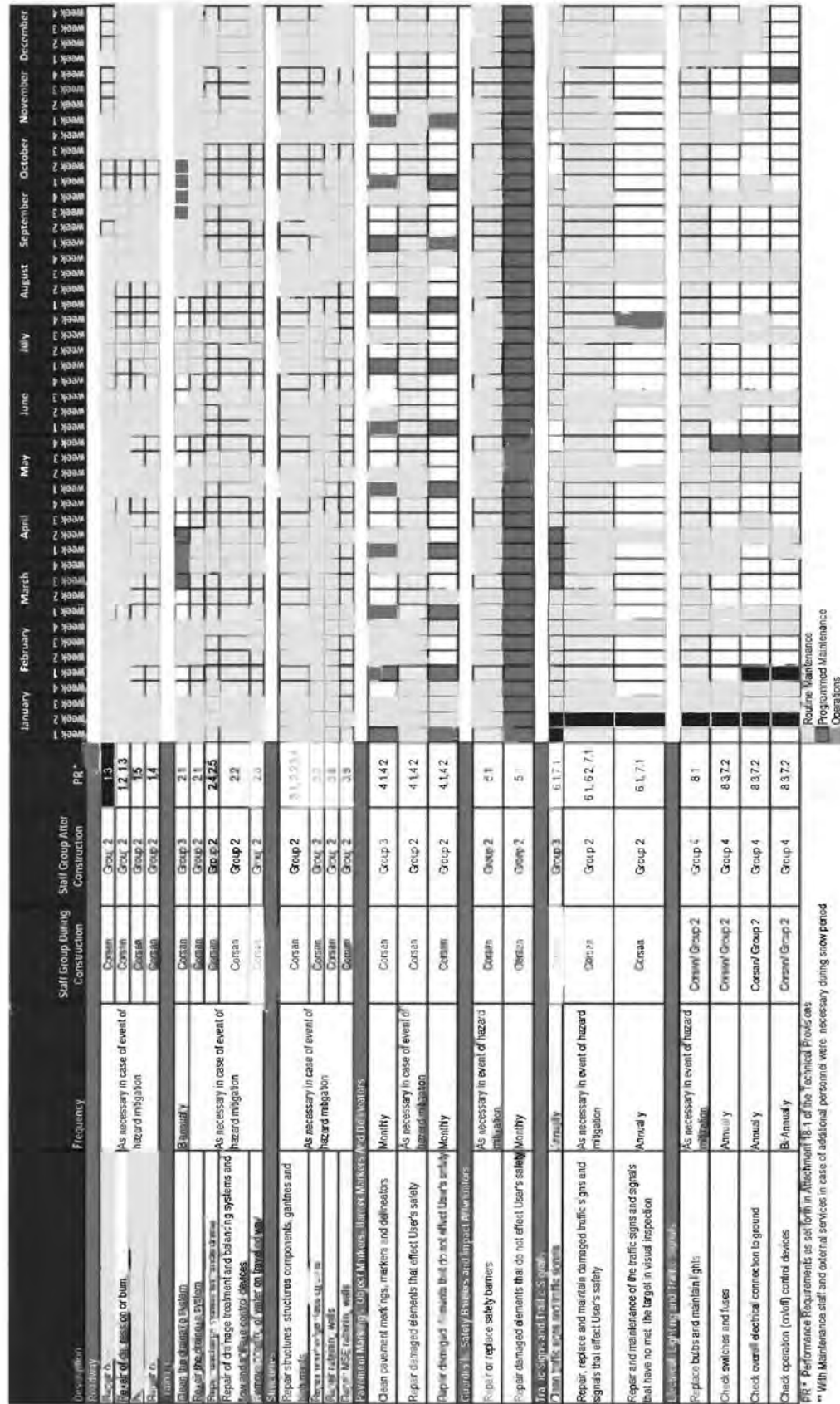


Figure 4.3-9: O&M Schedule, resources associated and Project requirements addressed

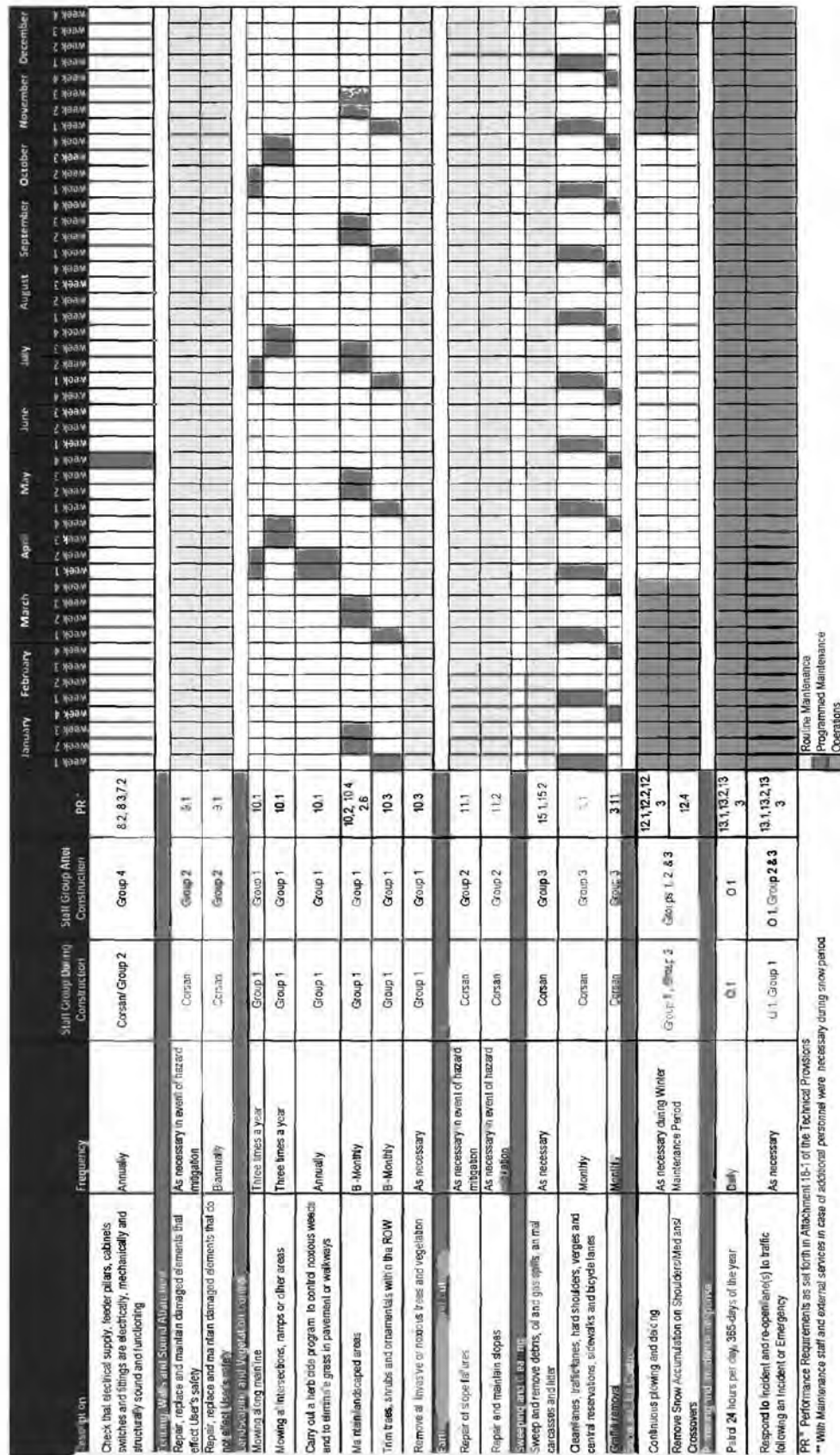


Figure 4.3-9. O&M Schedule resources associated and Project requirements addressed (Continued)

This allocation of activities and responsibilities will be updated on a yearly basis to comply with Performance Requirements of the Technical Provisions Attachment 18-1. This figure contains a breakdown of all the programmed O&M activities, in order to meet the targets set forth for each road category element as defined in the Technical Provisions Attachment 18-1.



Whether self-performing or outsourcing O&M activities, the O&M Team will focus on safety. Working on a live roadway involves hazards for maintenance staff and motorists. Detailed procedures to ensure safety for workers and motorists will be developed and used, whether by internal maintenance staff or specialized subcontractors.

The O&M Team will organize and program the Routine Maintenance activities with the appropriate equipment and staff, as shown in Figure 4.3-9, to comply with the Performance Requirements for each element.

Performance Requirements

The Performance Requirements will be managed with the resources shown in the Figures 4.3-9 and 4.3-10 in order to meet the targets defined in the Technical Provisions Attachment 18-1.

Winter Maintenance

For winter maintenance, we will:

- Maintain staff and equipment in a state of readiness in order to keep the roadway safe during periods of snow and ice
- Use additional equipment



Figure 4.3-11: Pickups with plows will be used on ramps and intersections

We will use smaller vehicles such as a crew cab pickup truck with a plow and spreader to address areas that are difficult for the larger trucks to reach.

This will allow the larger snow plows to focus on the I-69 mainline, improving performance. The areas maintained by the smaller vehicles will be intersections, ramps and secondary roadways.

This will decrease the length of the area assigned to each plow, increasing the level of service as well as reducing clean-up time and proactively addressing problem areas. We will also:

- Maintain the roadway at all times and under all weather conditions
- Monitor weather forecasts
- Manage the use of de-icing materials

Prior to the winter maintenance season, we will obtain and stockpile adequate de-icing materials in our storage facilities.



Figure 4.3-12: Isolux's Snowplow



Surface Patrol Pavement Temperature Sensors will be mounted on O&M vehicles to measure and record temperatures changes of the pavement surface to accurately predict the need for application of de-icer thus allowing optimization of the quantities used.



We are currently exploring the use of alternative environmentally friendly de-icers. Special care will be taken to minimize de-icer use close to the karst areas.

We will subscribe to a weather reporting service with the purpose of automatically receive alerts for storm events that may require winter maintenance.

Bare Pavement Event

During winter season, I-69 DP will use its own in-house staff and equipment to plow and de-ice the roadway. These efforts will be supported, when necessary, by local subcontractors. The O&M Team's maintenance procedures will ensure that, following any winter weather event, plowing and

de-icing will finished within two hours in line with IFA's requirement 12.1 of the Technical Provisions Attachment 18-1, Performance Requirements and Measurement, Tables A&B. We will issue a monthly report including the documenting performance achievements relating to the bare pavement events.



Figure 4.3-13: Bare pavement successfully achieved at A4 (Spain)

Snow and Ice Control Plan

All winter maintenance measures will be described in the Snow and Ice Control Plan. This plan will be updated annually to incorporate changes in strategy, Good Industry Practice and lessons learned, and submitted to IFA for its review and approval.

The preliminary proposed anti-icing and de-icing routes are shown in Figure 4.3-15.



The O&M Team will carry out an annual winter maintenance exercise at the beginning of each winter season. During this exercise, the staff and the specialized subcontractor partners will be trained in all related methods, risk and safety requirements. This exercise will also check that all winter maintenance equipment is operational and ready for the winter season.

4.3.1.2.f Traffic Management During Maintenance



I-69 DP understands that traffic management during maintenance activities is critical to ensuring a safe place of work for both O&M staff and the road users. Through training of our staff and specialty subcontractors on our proven traffic management approaches, we will ensure that proper and effective maintenance related traffic control is carried out. We understand disruption to traffic flow is viewed

critically by INDOT and will focus on keeping travel lane disruptions to a minimum.

All lane closures for Planned Maintenance work will comply with the INDOT Interstate Highways Lane Closure Policy. Where any deviation from the monthly Planned Maintenance schedule lane closures are required, the O&M Team will coordinate maintenance activities and associated lane closure requirements with IFA/INDOT a minimum of 14 days in advance of planned activities. Should the closures affect all lanes in the same direction of I-69, entrance ramps, exit ramps or frontage roads and access roads, the O&M Team will coordinate with the IFA/INDOT 28 days in advance.

Referring to this last issue, I 69-DP will thoroughly comply with all the restrictions indicated in section 18.2.3 of the Technical Provisions.

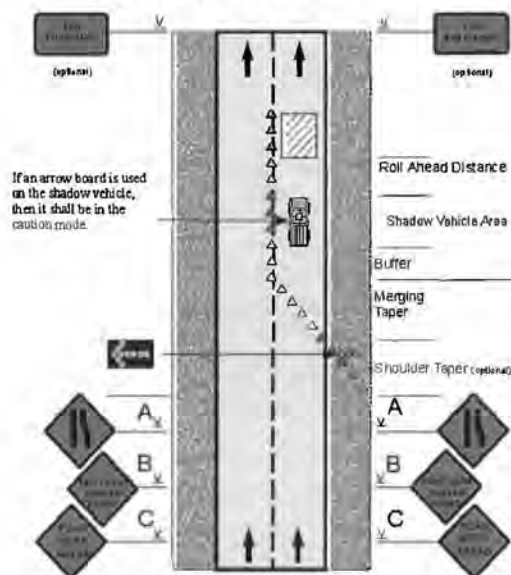


Figure 4.3-14: Traffic Management example

Event Planning

The O&M Team is responsible for planning and coordinating all routine and rehabilitation maintenance whether performed by the I-69 DP team, a specialty subcontractor or by other entities, such as public agencies.

Notification

Monthly Planned Maintenance and Routine Maintenance schedules will be submitted to IFA for approval at least 30 days in advance of the works. Annual Planned Maintenance schedules will be

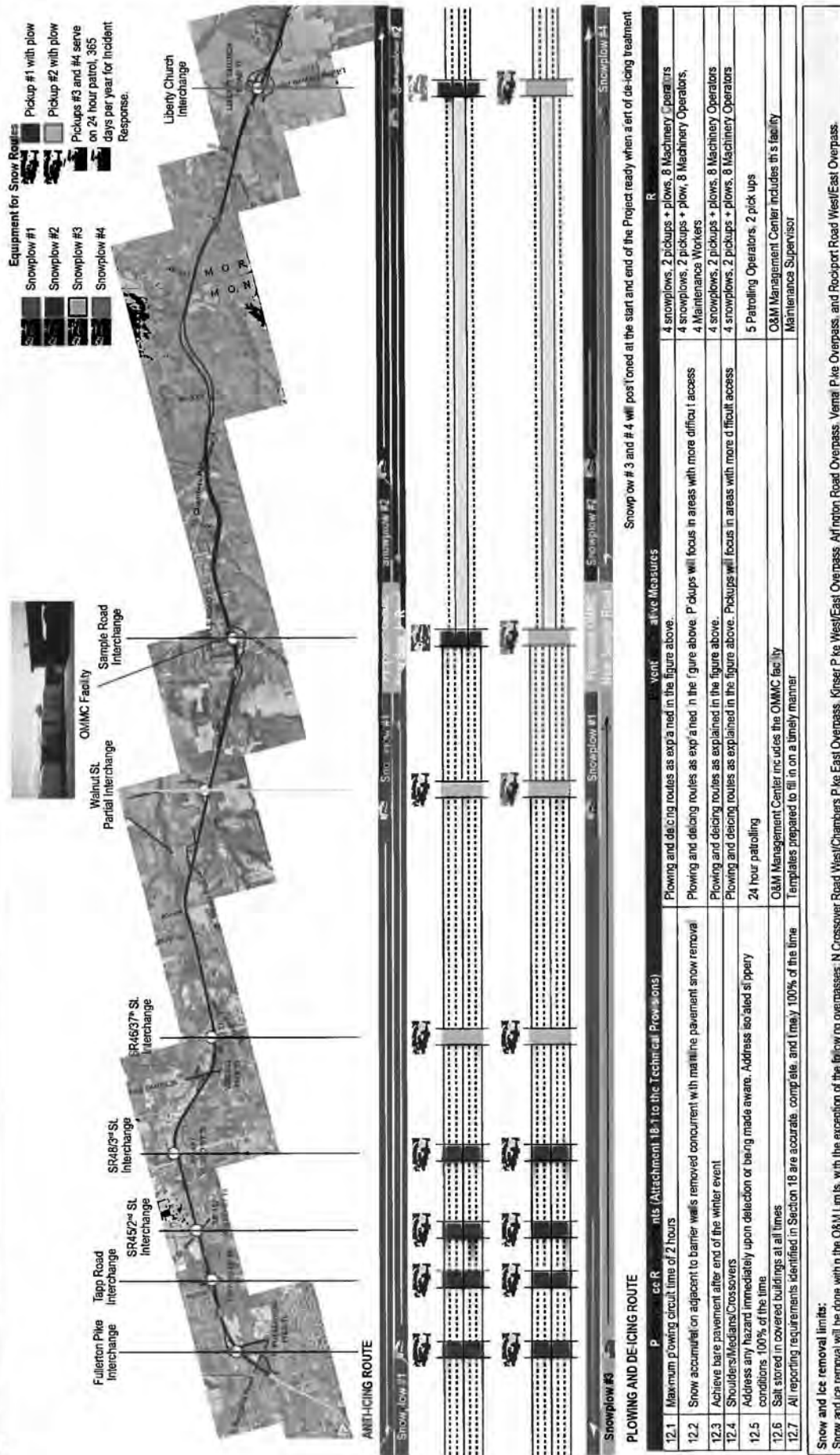


Figure 4.3-15: Snow Routes and De-icing

submitted for IFA review and approval at least 90 days in advance of the commencement of the year. The schedules will describe, for each section of the works, all maintenance tasks or activities, dates, times and durations for each activity; the total quantity of Planned Maintenance hours and the permit closures required for Planned Maintenance

Preparation

The O&M Team will prepare a Temporary Traffic Control Plan for Planned Maintenance affecting the roadway, sidewalk or bridges, or any other event involving temporary traffic control. It will ensure safety of the staff and the traveling public. We will use QuickZone 2.0 software to determine queues associated with any lane closures or restrictions related to maintenance activities. The O&M Team will coordinate with the INDOT TMC to ensure that accurate information is supplied to the road users about lane closures or other traffic impacts. Communication of public information will be supported with press releases and other media (e.g. newspapers, radio, television, websites and social networks).

Implementation



The placement, maintenance and removal of traffic control devices and temporary signage will meet the approved Traffic Operations Plan. With the assistance of our patrollers and roadway maintenance operators, traffic safety will be monitored and corrective action taken. We will notify the User and the TMC if congestion is caused by the O&M Work.

Reporting



All Routine Maintenance and minor repair works will be recorded by the O&M Team in the I-69 Maintenance Management System (MMS). The information will then be streamed to INDOT's Computerized Maintenance Management System (CMMS). These records will be used to develop the quarterly Maintenance Work Reports that will be submitted for IFA review. Each month, the report will identify all maintenance and

rehabilitation activities planned, will detail actual activities performed and will confirm that completed work complies with the approved maintenance procedures. This reporting will feed into the quarterly Operations Report provided to IFA.

4.3.1.2.g Inspection, Testing and Defect Management



Regular inspections are a crucial part of our proactive, preventive maintenance approach as they identify early maintenance needs. This allows us to implement adequate mitigation measures before issues become problems that are difficult to fix. The inspections will:

- Determine deterioration rates
- Identify methods to mitigate deterioration
- Allow for adequate budgeting for future corrective actions
- Mitigate any potential disruption to road Users.

I-69 DP will also conduct the inspections shown in Figure 4.3-17 to determine the condition of each Element after construction period. We will carry out the inspections to determinate the condition of each Element, allowing delivery of the Baseline Asset Condition Report (BACR) to IFA before the commencement of the Construction Period. We will summarize the results in the inspection and test reporting, which will identify, classify and prioritize any Defects (Category 1 or 2, as defined in the Technical Provisions) found. The inspection reports will be comparable with the Technical Provisions Attachment 18-1.

For Category 1 Defects, the O&M Team will take the necessary action to ensure that any hazard to Users is mitigated within the period specified in the column entitled "Category 1 Hazard Mitigation" in the Performance and Measurement Table A provided in the Technical Provisions Attachment 18-1, and will permanently remedy the Defect within the period specified in the column entitled "Category 1 Permanent Remedy".



Figure 4.3-16: Traffic Management process for Routine Maintenance Activities

Element Category	Inspection Table	Measurement Method	Frequency
BRIDGE DECK	Inspect pavement surface in accordance with Inspection and Measurement Method Table	Visual inspection	Monthly
	(R) In accordance with the requirements in the FHWA HPMS Field Manual, Skid Resistance in accordance with the requirements in ASTM E274 and ASTM E524 at 40MPH.	Automated condition of stress survey and physical measurement	Annually
		(R) Skid resistance	Annually
FLEXIBLE PAVEMENT	Inspect pavement surface in accordance with Inspection and Measurement Method Table	Visual inspection	Monthly
	(R) In accordance with the requirements in the FHWA HPMS Field Manual, Skid Resistance in accordance with the requirements in ASTM E274 and ASTM E524 at 40MPH. Rutting shall meet requirements in ASTM E360, ASTM E1707	Automated condition of stress survey and physical measurement	Annually
		(R) Skid resistance, Rutting	Annually
STORM DRAINS & DRAINAGE FEATURES	Inspect drainage elements in accordance with Inspection and Measurement Method for Table 18-B - Technical Provisions	Visual inspection and records	Cuverts, drains, ditches: B-Annually
	Inspect in accordance with the requirements of NBIS of the Code of Federal Regulations, 23 Highways-Part 650, the Department Bridge Inspection Manual and the Federal Highway Administration's Bridge Inspector's Reference Manual	Visual inspection supplements by CCTV where required to inspect buried pipe work	Underdrains, channels and pipes: Annually
EROSION AND SEDIMENT CONTROL	Ensure that all erosion control measures are functioning as designed	Visual inspection	Annually
STRUCTURES	Repair Minor Damage.	Visual inspection and records	Any tie steel involved in structural damage
Minor Damage	Evaluate structural damage to structures in case of no debt involved in structural damage	Visual inspection and records	Routine inspection on: B-Annually
Major Damage	Inspect structural elements in accordance with Inspection and Measurement Method Table, National Bridge Inspection Standards Regulation (NBIS) of the Code of Federal Regulations, 23 Highways-Part 650, the INDOT Bridge Inspection Manual and the Federal Administration's Bridge Inspector's Reference Manual	Inspected on will taken B-Annually by Specialist Inspectors	B-Annually
Br idges	Inspect and assess in accordance with the requirements of AASHTO's Manual for Bridge Evaluation and Load, the INDOT Bridge Inspection Manual and the Federal Highway Administration's Bridge Inspector's Reference Manual	Inspection will taken B-Annually by Specialist Inspectors	B-Annually
Load Ratings	Inspect retaining walls in accordance with Inspection and Measurement Method Table	Inspection will taken B-Annually by Specialist Inspectors	B-Annually
Retaining Walls and MSE Walls	Inspect structural elements in accordance with Inspection and Measurement Method Table	Visual inspection	Annually
Surface Coatings	Inspect Slope in accordance with Inspection and Measurement Method for Table 18-B - Technical Provisions	Visual inspection	Annually
PAVEMENT MARKINGS, DITCHES / MAINTENANCE	Inspect Markings, Symbols and Delineators in accordance with Inspection and Measurement Method for Table 18-B - Technical Provisions	Retrospectively as specified in Standard 808.07 and Indiana Test Method 1114(33.1)	Annually
Pavement Markings	Inspect Slope in accordance with Inspection and Measurement Method for Table 18-B - Technical Provisions	Visual inspection	Annually
Delineators	Values of retroreflectivity below the requirements of IN MUTCD	Retrospectively	Every four years
PROTECTIVE SIGNS	Inspect Slope in accordance with Inspection and Measurement Method for Table 18-B - Technical Provisions	Visual inspection by geotechnical specialist and recorded instances of slope failure	Annually
Slopes	Inspect Slope in accordance with Inspection and Measurement Method for Table 18-B - Technical Provisions	Visual inspection by geotechnical specialist and recorded instances of slope failure	Annually
WATER QUALITY	Collect water quality samples. Two (2) of the quarterly samples will be sampled at base flow conditions and two (2) of the quarterly samples will be sampled at storm flow conditions. One (1) of the Semi-Annual samples will be sampled at base flow conditions and one (1) will be sampled at storm flow conditions.	Sampling results	Quarterly in first year and Semi-Annually in following five (5) years
Water Quality Sampling	Cave fauna areas will be sampled for three (3) years after construction to determine if there are any changes in the fauna community	Sampling results	Annually in the first three (3) years
Cave Fauna Sampling	Inspect karst hazardous spill containment measures	Visual inspection and reports	Semi-Annually for first five (5) years. Then every two (2) years by maintenance staff and every ten (10) years by a karst specialist
Karst Hazardous Spill Containment Measures	Inspect karst feature water quality mitigation measures and other stormwater control measures	Visual inspection and reports	
Karst Feature Water Quality Mitigation Measures	Inspect karst feature structural treatment measures	Visual inspection and reports	
Karst Feature Structural Treatment Measures		Visual inspection and reports	

Figure for 4.3-17: Reporting Inspections After Construction

For Category 2 Defects, the O&M Team will undertake the permanent repair within the period specified in the column entitled "Category 2 Permanent Repair" in the Technical Provisions Attachment 18-1, Performance and Measurement Table B

4.3.1.2.h Maintain Accurate As-Built, Inspection and Maintenance Records

During the Construction Period, the DB Team will maintain a database of all as-built drawings and construction records. This will be transferred to the O&M Team before Substantial Completion as part of the transition process. This database will include all assets to be maintained throughout the Operating Period and a description of each item and piece of

The I-69 MMS utilizes GIS and GPS for data collection, analysis, and creating reports.



equipment.

I-69 DP has its own Maintenance Management System (I-69 MMS) that will be fully compatible and integrated with INDOT's Computerized Maintenance Management System database (CMMS). Its functionality will be demonstrated to IFA for approval 30 days prior to NTP2.

The O&M Team will be responsible for data collection and operation of the CMMS database and procedures for all records and reports as required. The CMMS database will include the preventive

maintenance activities required, as well as details of activities performed including dates and repair history. It will also include detailed information regarding any failures experienced, repairs carried out and all routine maintenance work performed. The O&M Team will use the CMMS for the quarterly Maintenance Work Reports.

I-69 DP will update and maintain the I-69 MMS database through the entire duration of the Term, and will identify all new and rehabilitated assets, for the purpose keeping a record of the Defects, the actions and the inspections through the Operating Period; all relevant information will be streamed to the CMMS on a daily basis. Some of the main automatic functions that the I-69 DP's MMS will provide are:

- **Road Safety Module:** determining high accident locations and analyzing road safety
- **Pavement Expert Management Module:** obtaining non-destructive pavement test data and other data for predicting pavement conditions and life.
- **Routine Maintenance Module:** managing working reports related to maintenance activities



The Pavement Expert Management Module has been applied worldwide to more than 30,000 miles of roadways

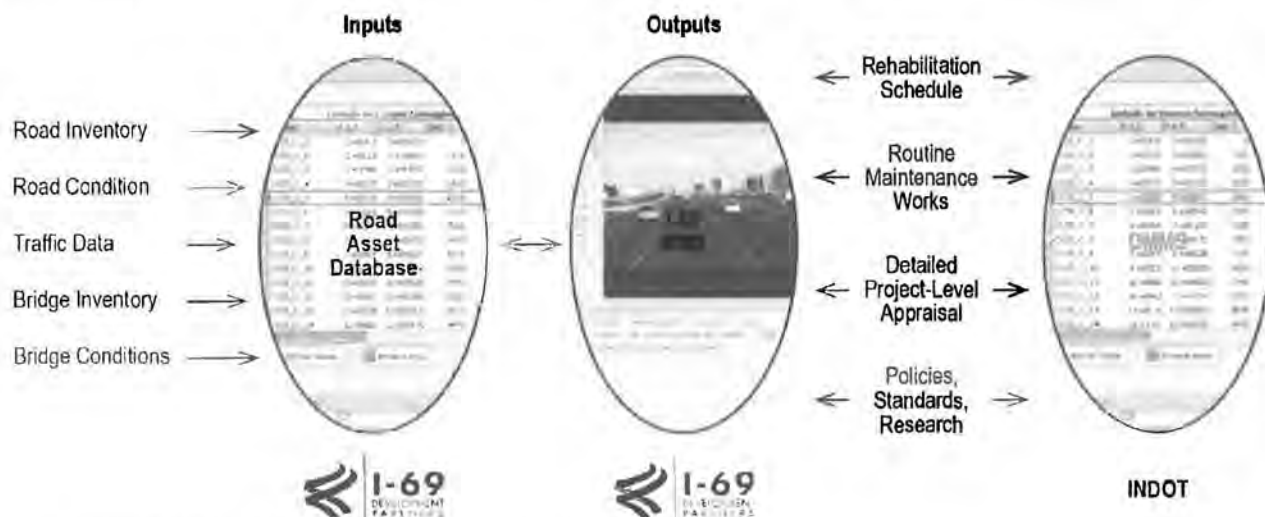


Figure 4.3-18: The I-69 DP MMS will fully compatible with the CMMS.

4.3.1.3 Rehabilitation Work



The O&M Team will take a proactive and preventive maintenance approach to the Project. Inspections and preventive maintenance will result in early identification and resolution of issues, minimizing cost impact and disruption for the road Users.

All major Rehabilitation Work will be subcontracted to local specialized subcontractors, who have already expressed their interest in collaborating on the Project.

The frequency and planning of these activities will be handled by the O&M Team through a Rehabilitation Work Schedule. This will be updated on a five-year basis to comply with Performance Requirements indicated in the Technical Provisions Attachment 18-1.

Rehabilitation Works will be managed according to a Rehabilitation Work Schedule that will be carried out considering the Maintenance Plan (MP) and the Performance and Measurement Tables included in the Technical Provisions Attachment 18-1. This program will set out the procedures for the inspection of assets determining:

- The need of Rehabilitation Works
- The planning and design of any major works required

Our preliminary Rehabilitation Work Schedule is compliant with the requirements of the Technical Provisions Attachment 18-1 and the Handback Requirements set forth in Section 19 of the Technical Provisions. Our approach is that all preventive rehabilitations are essential, thus we have scheduled all Rehabilitation Work prior to when possible issues are likely to appear, allowing us to avoid having them and becoming a problem which would be more difficult and expensive to fix.

Our rehabilitation strategy has been adapted to replace, renew or refurbish highway assets at appropriate intervals to meet service requirements and

During the full term of the Operating Period we will maintain the highway to rigorous standards exceeding those required within the Technical Provisions, to allow for a high degree of User satisfaction and allowing for the best product at Handback.

comply with the Handback Requirements. This Rehabilitation Work Schedule is combined with the proactive Routine Maintenance regime to maximize the life of roadway assets.

Renewal Work will also be required to upgrade assets when standards change and to maintain assets in a condition that meets Handback Requirements. Most renewal work activities are programmed based on asset deterioration models with the primary criteria being to maintain the prescribed condition rating levels.

The proposed major element Rehabilitation Works required to provide adequate service for the 35 years are described in the following sections.

All major rehabilitations/renewals will be developed as a construction project, with plans, specifications and estimates prepared by a local engineering company for approval by IFA/INDOT.

4.3.1.3.a Rehabilitation of Pavement

The surface condition dictates the safety of the operation of the roadway and is the most visible to the public in terms of User's safety, comfort and general awareness of the performance of the management of the roadway. Our constant knowledge of pavement conditions will be used to plan repairs and renewals in a way that will minimize delay and disruption to the User.

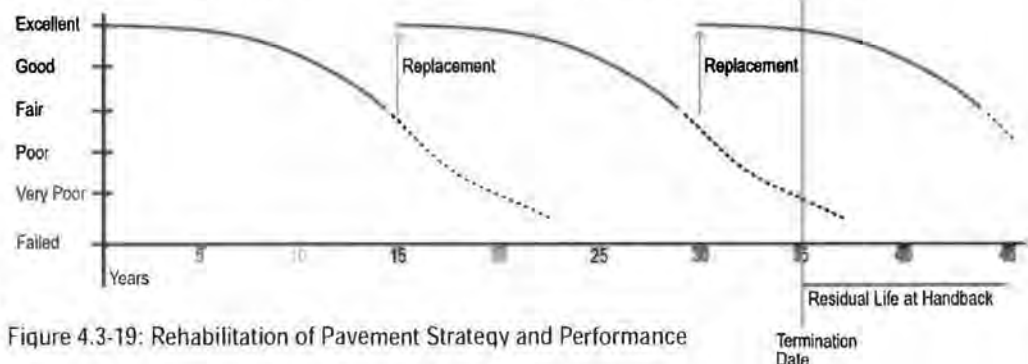


Figure 4.3-19: Rehabilitation of Pavement Strategy and Performance

The O&M Team will subcontract the rehabilitation of pavement to local firms.

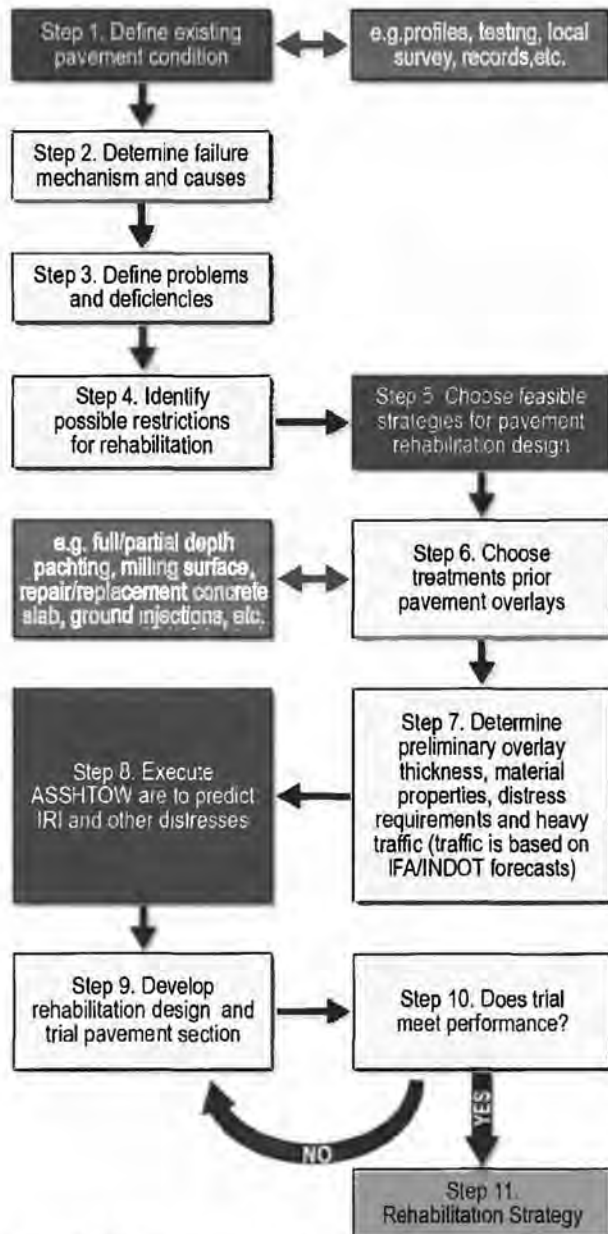


Figure 4.3-20: Pavement Rehabilitation Strategy Process

Rehabilitation of the pavement is scheduled at year 15 and 30 of the Term. The renewal strategy will be determined at the time of the rehabilitation based on the traffic data that is predicted at the time of the renewal, on advances in pavement materials or design methods and any other pertinent factors. However, we have assumed a conservative

preliminary pavement rehabilitation strategy, developed in conjunction with the construction design:



Figure 4.3-21: Pavement Rehabilitation Strategy

4.3.1.3.b Rehabilitation of Structures

There are 31 bridges to be maintained by the O&M Team; 12 which are being constructed as part of the Project and 19 which exist. The rehabilitation program proposed for most bridges includes a major rehabilitation during construction in order to restore some deficient bridge elements to an optimum state. For those bridges that are not being rehabilitated during construction, the O&M Team will engage local subcontractors for the rehabilitation of the structures.

The bridge program proposed for most bridges includes a major rehabilitation During Construction in order to restore some bridge elements to an optimum state.

Preventive maintenance activities have been considered (steel painting, bearings replacement) during the O&M period for all bridges. Moreover two rehabilitation/repair periods have been projected in order to extend the lifetime of the existing and new structures beyond the required Residual Life defined in the Handback requirements.

The maintenance strategy for the new and existing structures is defined below:

- Group 1 – This includes 18 bridges that are either new, are being replaced during construction or that have been constructed or replaced in the last 20 years. Cyclical preventive maintenance activities such as replacing of wearing surface, steel painting, and replacing of bearings have been considered.
- Group 2 – This includes nine bridges that were erected in 1972 and reconstructed during the 1990's. The aim of rehabilitation work for Group 2 is to extend the life of the structural elements over the O&M period and to comply with the Residual Life at Handback. It has been assumed that the deck will be in a worse condition than the superstructure as it is more exposed to traffic and weather conditions.
- Group 3 - This group includes four bridges constructed in 1972 or prior but that have not been reconstructed since they were built. The rehabilitations for these bridges are most extensive due to lack of or minimal rehabilitation/reconstruction works having been carried out since the construction.

4.3.1.3.c Rehabilitation of Road Signs and Pavement Marking

Pavement markings will be renewed as follows: renewal of lane lines every year, renewal of the right edge line every 2 years in urban mainline and 3 years in rural mainline, and the renewal of the left edge line every three years, regardless of whether they are in the urban or rural areas.

Roadway sign panels will be renewed every 15 years and sign structures will be renewed every 20 years.

The O&M Team will subcontract to local firms the rehabilitation/renewal of road signs and structures and pavement marking.

4.3.1.3.d Rehabilitation of Highway Lighting

Replacement of the lamps is scheduled every three years, and the luminaires every ten years. Lighting poles will be



Figure 4.3-22: Lamp replacement

replaced to meet the Handback Requirements. (See Figure 4.3-24.)

4.3.1.3.e Costing

During the Operating Period, the O&M Team will produce an updated annual budget to meet the Rehabilitation Works Schedule.

The cost of Rehabilitation Works will be budgeted according to market prices obtained from quotes requested from local suppliers and subcontractors. Throughout the Construction Period, the budget will be reviewed and adjusted to match the expected rehabilitations.

4.3.1.3.f Handback Requirements

Together with the DB Team, the O&M Team will analyze again the Performance and Handback Requirements of the Project elements set forth in Table 19-1 of the Technical Provisions. These requirements will establish the design/materials of some elements, such as bridge deck and pavement, to meet or exceed targets.

The O&M Team will be responsible for developing the Rehabilitation Work Schedule and allocating resources to meet the requirements. A Handback Plan will be developed five years before the end of the Term of the contract. This plan will describe the three Residual Life Inspections (60 months, 18 months and 19 days before the end of the Term) to be performed and establish an approach for any Rehabilitation Works needed to meet the Handback Requirements.

We will provide O&M training to at least 10 members of INDOT, so that they will have a complete understanding of the infrastructure and the O&M activities required to maintain adequate performance.

4.3.1.3.g Schedule

The preliminary Rehabilitation Work Schedule is presented in the Figure 4.3-24.

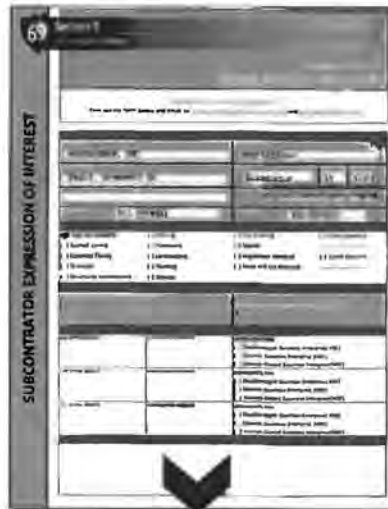
4.3.1.3.h Staged Construction and Management of Rehabilitation Work Simultaneously with Standard O&M



Under leadership of Operations and Maintenance Manager, Miguel Angel Barranco, the O&M Team will use an integrated approach to handle both

Routine O&M After Construction and Rehabilitation Work. This single point of leadership provides a coordinated approach to:

- Activity planning
- Traffic management
- Safety
- Quality control



Expressions of Interest	103
Prequalified by INDOT	101
DBE/MBE/WBE	16

Figure 4.3-23: Received Expression of Interest

The O&M Team has analyzed the roadway and bridge design to confirm that future rehabilitations and renewals can be accommodated through staged construction.

The Rehabilitation Work has been coordinated with complementary activities that can be carried out at the same period (e.g: pavements and safety barriers), so that temporary

mainline lane closures are minimized so to disrupt the Users to the least degree possible.

To that end, where feasible, activities will be scheduled in the same location and time to minimize impacts to the traveling public. Routine Maintenance schedule will be adapted to avoid possible interferences with Rehabilitation Work.

As was previously mentioned, the O&M Team will subcontract local firms to perform the major rehabilitation/renewal activities, such a rehabilitation of pavement structures, pavement markings and road signs. We have already contacted many local construction firms that will be available to provide different services through the Operating Period and have obtained their Expression of Interest to collaborate on future work.

4.3.2 Operations and Maintenance Management Approach

This section outlines the preliminary Operations and Maintenance Plan (OMP) which is part of the general Project Management Plan described in 1.5.2.5 of the Technical Provisions.

In order to fulfill with the Project Management Plan (PMP) requirements, I-69 DP Team has developed its own P3 Project Management System (P3PMS) as defined in 4.0.

The development of the plans that are required During and After Construction and through the Operating Period are summarized in Figure 4.3-25

4.3.2.1 Organization

The I-69 DP organization reflects Good Industry Practice and the experience and skills obtained in operating and maintaining similar facilities. All disciplines are effectively integrated within our team, including specialist subcontractors. Team members are chosen for technical expertise and

The O&M Team uses an integrated approach with one team and one Operations and Maintenance Manager, Miguel Angel Barranco, handling both routine O&M After Construction and Rehabilitation Work.

their collaborative attitude.

4.3.2.1.a.i Organization Chart

The O&M Team is depicted in the complete I-69 DP organization chart shown in Figure 4.1-5.

4.3.2.1.a.ii Roles and Responsibilities

The O&M Team's proposed organizational structure is shown in the I-69 DP organizational chart, with the interrelation and lines of communication and reporting between all Project partners indicated. Each key partner's roles and responsibilities are found in Section 4.1 Figure 4.1-6.

The key person within the O&M Team is our Operations and Maintenance Manager, Miguel Angel Barranco. Miguel Angel Barranco is currently carrying out similar managing tasks in the operation and maintenance of Monterrey-Salttillo roadway. He will bring his extensive experience in O&M (described in Section 4.1.1.a) to the Project.

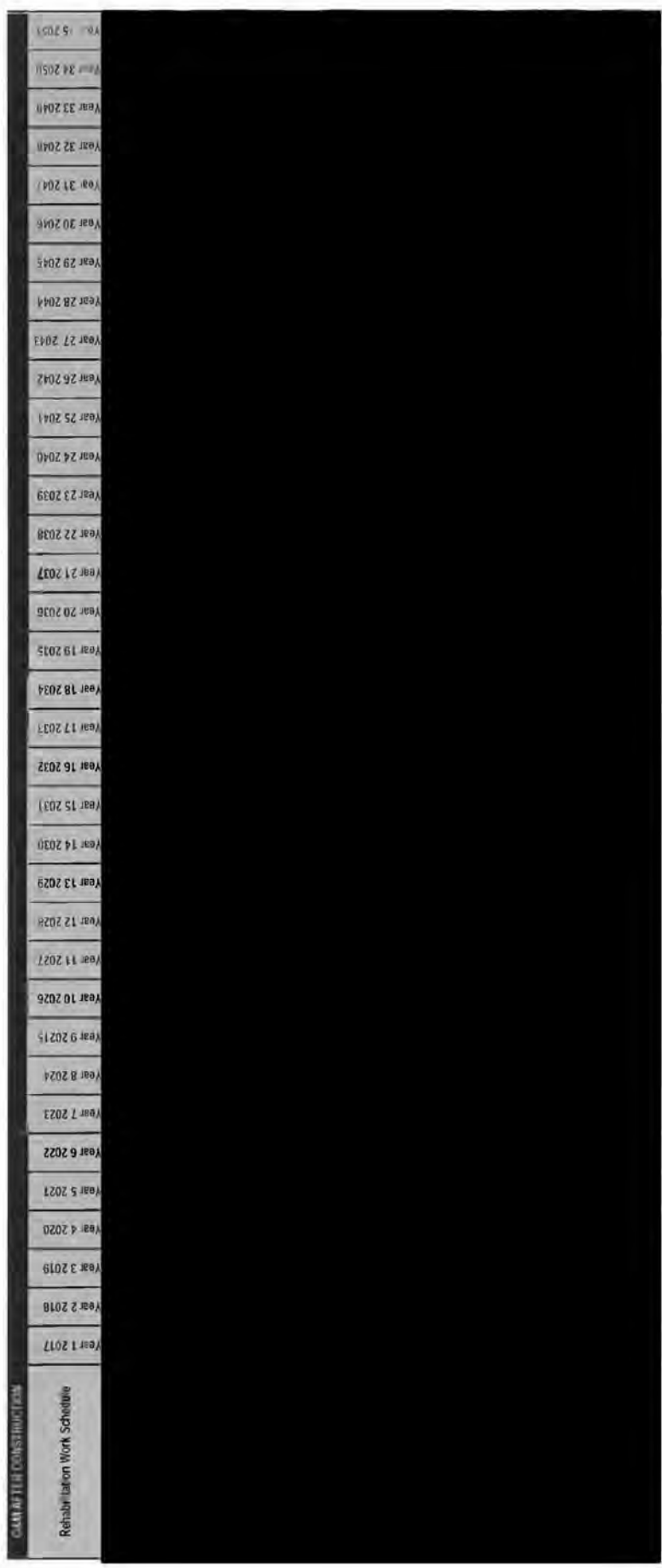


Figure 4.3-24 Preliminary Rehabilitation Work Schedule

4.3.2.1.a.iii Qualification and Experience

To ensure personnel meet and exceed IFA's requirements for safe and high quality O&M delivery, the O&M Team will only employ suitably qualified and experienced personnel. For every position, requirements, responsibilities, experience and qualifications have been established (Figure 4.1-8). Once hired, candidates will be given site specific training as required and periodic performance reviews.

4.3.2.1.b Unified Approach to O&M

The I-69 DP O&M Team is committed to working collaboratively as a joint venture and with IFA/INDOT at every stage. The common integrated management system applied is set out in section 4.1 Preliminary Project Management Plan.

4.3.2.1.c Decision-Making Process and Dispute Resolution

Every O&M Team manager is aware of empowerment to make decisions. This encourages correct and rapid resolution of issues at the lowest possible level. To facilitate decision making we will use a matrix of potential issues that could arise. This will clarify the hierarchy and reporting process that will be applied in each case. All partners are committed to resolve any internal disputes according to the terms of the Contract. The priority in the event of any dispute will be preserving the efficient continuation of O&M activities.

The decision-making process and dispute resolution system applied is set out in 4.1 Preliminary Project Management Plan and Figure 4.1-11

4.3.2.1.d Training Program



To ensure continuous improvement and safe O&M, staff will receive initial training with regular updates. O&M Team will be trained to understand the importance of the O&M quality management system, focusing on the safety of users and workers.



The O&M Manager will be responsible for the organization of the training for patrollers and maintenance operators, assuring that subcontracted staff is also familiar with the procedures of the Quality Management Plan (see Section 4.1.5) and the safety procedures. Subcontracted firms will be trained as required for major maintenance works.

The O&M Manager will conduct team courses in order to address a complete skills and training matrix. These team courses, which will be required for all levels of the project organization, are participative action programs designed to develop individuals' abilities to contribute effectively in teams. Representatives from I-69 DP, operations staff, the contractor's team leaders and subcontractors, together with nominees from the IFA, its agents and major subcontractors will attend to the courses. Initial and ongoing training in Health and Safety, Quality and Environment will be main subjects of the training for all levels of the organization.

4.3.2.1.e Communication and Documentation

Internal lines of communication and reporting during the Operating Period will follow the O&M organizational structure set forth in Figure 4.1-5 of the Preliminary Project Management Plan. Document sharing requirements will be detailed in the O&M management system procedures of the OMP, including methodologies and reporting templates.

Internal Communication

Internal communication will be provided through multiple formal and informal channels to maximize collaboration and trust within the O&M Team (including supply chain). This will help support continuous performance improvement. Co-location of our O&M Team in the OMMC will assure

regular communications and close collaborations among its members.

Meetings

A schedule of meetings (see I-69 DP Team Key Internal Meetings in Figure 4.1-12) will be developed and implemented to enable the O&M management team and specialist subcontractors to review performance, ensure good governance and project control, support effective communication and facilitate decision making during the Operating Period of the Project. If subcontractor performance is inadequate it will be discussed at the regular performance meetings and an improvement plan will be implemented and monitored. Apart from the meetings held by managers, the O&M Manager will weekly meet with the Maintenance Supervisor, who will give briefings to O&M Team crews on a daily basis. The idea of these informal meetings is to review ongoing activities as well as to plan future activities.

Documentation and Data

Project management documentation data will be stored electronically and shared via collaboration tools and the I-69 MMS. Asset management and O&M Records will be stored in the INDOT-supplied CMMS. Access to both systems will facilitate document sharing and review by allowing information to be issued electronically by selecting from pre-stored list of email addresses. Maintaining centralized document controlling will ensure the availability and use of up to date information, by clearly identifying and tracking the superseded documents. I-69 DP will comply with security back-up for project documentation as explained in Section 4.1.1.b.vi.

Reporting

The O&M Team has clear reporting responsibilities within our organization. Report templates will be agreed with IFA and used to make sure the current data is available, to ensure consistency and facilitate interpretation of results. Senior managers will use these reports to support continuous improvement.

The reporting process method applied is set out in Section 4.1.1.b.ii. Preliminary O&M Reporting Schedule is provided in Figure 4.3-27.

4.3.2.1.f Approach to O&M Prior and Following Substantial Completion



During the Construction Period, the O&M Team and contractor will split the activities as set forth in the section

4.3.1.2. e. Once IFA has issued Substantial Completion, the O&M Team will take over all O&M activities.

During construction, the O&M Team will be gradually ramped up until it is fully staffed at least one month before Substantial Completion. The time leading up to Substantial Completion will be used for O&M staff training.

4.3.2.1.g Interfaces during O&M

Throughout the Operation Period, establishing open and honest relations with the IFA, INDOT and all applicable third parties will be vital for safe operation and maintenance of I-69. The overall approach described in Section 4.1 will be employed. Figure 4.1-13, shows key O&M interfaces.

Our Deputy Project Manager – Technical, Carlos Ursua will remain involved in the Project during the first year after Substantial Completion, ensuring a smooth transition to the Operating Period.

José R. Ballesteros, will be the main point of contact for IFA and INDOT. He will be supported by Carlos Ursúa, who will ensure the smooth transition from the Construction to the Operating Period through the first year of the Operating Period, and the O&M Manager, Miguel A. Barranco, who will coordinate with applicable third parties. The O&M Team will regularly report on performance in relation to Project progress, quality and safety as well as upcoming Planned Maintenance works.

4.3.2.1.h Public Information and Communications Approach

Customer Response

The O&M Team will ensure that an effective and quick response to the road Users is provided in compliance with the performance requirements.

A dedicated website will be available for the User to request any type of information or register comments about any day-to-day issues that could

arise. A customer telephone contact line will be manned during normal business hours, with the option to leave voice mail messages at any time



Figure 4.3-26: The I-69 DP Website will provide users with real time information.

Public Information and Communications Approach During O&M

The O&M Team understands the importance of providing clear, reliable and prompt information to the public throughout the Operating Period. This will be important to maximize safety and maintain a high quality image of the Project. We will provide regular O&M information via press releases and access to a company spokesperson when needed. The O&M Team will provide advanced information to IFA for approval prior to distribution to the public.

Public information and communication in all project stages will be controlled by Tony Carpenter, our Public Information Coordinator as outlined in the I-69 DP Public Information Plan (PIP). This Plan will be updated to reflect the changing requirements for public communications during the Operating Period (and become the O&M PIP).

Operating Period PIP

Procedures set out in the O&M PIP will ensure the full and regular consultation of all parties. This will occur annually, prior to implementation of substantial changes or as a part of the planning process for activities with significant potential impacts to Users (e.g. major Rehabilitation Work). All relevant information will be provided in advance and sufficient notice given to allow all concerned parties to consider potential issues. Notification to the public about upcoming lane closures/lane adjustments and detours will occur after IFA's approval.

REPORTING	Element Category	Reported Task	Substantial Schedule	Frequency
O&M Plan During Construction	Submit Initial O&M Plan DC	Approved by IFA prior to Commencement of Construction	90 days prior to the commencement of the year scheduled	Once
O&M Plan After Construction	Annual Updates to the O&M Plan DC	Annual Updates to the O&M Plan DC	90 days prior to the commencement of the year scheduled	Annual
Baseline Asset Condition Report	Submit Initial O&M Plan AF	Submit Initial O&M Plan AF	Nine months prior to opening O&M segments to the general public	Once
Monthly and Annual Planned Maintenance Plan Schedule	Annual Updates to the O&M Plan AF	Annual Updates to the O&M Plan AF	30 days prior to the commencement of the year scheduled	Annual
Monthly and Annual Routine Plans & Schedule	Planned Maintenance Plan Schedule	Planned Maintenance Plan Schedule	30 days prior to NTP2	Once
Quarterly and Annual Maintenance Work Reports	Routine Maintenance Plan Schedule	Routine Maintenance Plan Schedule	30 days prior to the commencement of the month scheduled	Monthly
Rehabilitation Work Plan & Schedule	Maintenance and Rehabilitation Reports	Maintenance and Rehabilitation Reports	90 days prior to the commencement of the year scheduled	Annual
Updated Rehabilitation Work Plan	Submit the Initial Renewal Work Plan	Submit the Initial Renewal Work Plan	M&R reports beginning at NTP2 and continuing until the Termination Date	Quarterly
Rehabilitation Work Report	Annual Updates to the Rehabilitation Work Plan	Annual Updates to the Rehabilitation Work Plan	Maintenance reports 90 days after the end of year	Annual
Reporting Emergency	Rehabilitation Work Reports	Rehabilitation Work Reports	90 days before the beginning of 2nd full calendar year after Substantial Completion Date	Once
Computerized Maintenance Management System (CMMS) Integrated	Emergency Reports	Emergency Reports	90 days before the beginning of 3rd full calendar year after Substantial Completion Date and calendar year thereafter	Annual
Quarterly Operations Report	Provide inventory data to the Department for incorporation into the CMMS	Provide inventory data to the Department for incorporation into the CMMS	Developer MMS	Annual
Maintenance Patrols	Quarterly Operations Report (including lane closures and NC event)	Quarterly Operations Report (including lane closures and NC event)	Developer MMS	Quarterly
Snow and Control Ice Plan	Conduct a daily maintenance patrol and visual inspection of the entire facility to identify any incidents or deficiencies.	Conduct a daily maintenance patrol and visual inspection of the entire facility to identify any incidents or deficiencies.	Developer MMS	Daily
Snow and Control Ice Report	Submit Snow and Control Ice Plan	Submit Snow and Control Ice Plan	Prior to July 30	Annual
Winter Patrols	In accordance with Inspection and Measurement Method Table for Table 18-B - Technical Provisions	In accordance with Inspection and Measurement Method Table for Table 18-B - Technical Provisions	Within 24 hours upon IFA's request	Daily during Winter Season
Bare Pavement Data	Winter Patrol Diary	Winter Patrol Diary	Monthly after each month that has a Winter Maintenance event	Monthly
Performance Inspections Plan	Monthly Bare Pavement Report	Monthly Bare Pavement Report	Before the close of business seven days following each month's end	Annual
Performance Inspections Report	Submit proposed performance sections to audit randomly selected and at least 5% of total	Submit proposed performance sections to audit randomly selected and at least 5% of total	90 days prior physical inspection	Quarterly during construction period
Karst Feature Erosion/Sediment Control Reviews	In accordance with Inspection and Measurement Method Table for Table 18-B - Technical Provisions	In accordance with Inspection and Measurement Method Table for Table 18-B - Technical Provisions	Quarterly beginning at NTP2 and continuing until the Substantial Completion Date	Semiannually for first five (5) years. Then every two (2) years by maintenance staff and every ten (10) years by a karst specialist during operating period
Karst Hazardous Spill Containment Measures	Inspection of Karst feature mitigation measures and other stormwater control measures	Inspection of Karst feature mitigation measures and other stormwater control measures		Once
Karst Feature Water Quality Mitigation Measures	Inspect Karst hazardous spill containment measures	Inspect Karst hazardous spill containment measures		Every five (5) years
Karst Feature Structural Treatment Measures	Inspect karst feature water quality mitigation measures and other stormwater control measures, (detention basins, hazardous materials traps, rock filters, peak filters, engineered wetlands, etc.)	Inspect karst feature water quality mitigation measures and other stormwater control measures, (detention basins, hazardous materials traps, rock filters, peak filters, engineered wetlands, etc.)	30 days after the end of month	Quarterly
Sustainability Management Plan	Inspect karst feature structural treatment measures (concrete or aggregate caps, spring boxes, tied ditches, settlement markers, etc.)	Inspect karst feature structural treatment measures (concrete or aggregate caps, spring boxes, tied ditches, settlement markers, etc.)	60 months prior the Termination Date	Once
Updated the Sustainability Management Plan	Preparation of a revised Sustainability Management Plan for the O&M period	Preparation of a revised Sustainability Management Plan for the O&M period	Between 56 and 59 months before end of term	Once
(S) Sustainability Monitoring and Reporting Program	Five-year update to the Renewal Work Plan	Five-year update to the Renewal Work Plan	Between 14 and 17 months before end of term	Once
Handback Plan	Sustainability Monthly Reports	Sustainability Monthly Reports	Not later than 60 days before end of term	Annual
Residual Life First Inspection Report	Submit Handback Plan	Submit Handback Plan		
Residual Life Second Inspection Report	Residual Life test results and calculations	Residual Life test results and calculations		
Residual Life Third Inspection Report	Residual Life test results and calculations	Residual Life test results and calculations		
(Q) Road Safety Evaluation	Road Safety Inspection Audit. Assess accident data and evaluate roadway safety performance	Road Safety Inspection Audit. Assess accident data and evaluate roadway safety performance	Prior to July 30	

Figure 4.3-25: O&M Reporting Schedule

4.3.2.2 Baseline Schedule

I-69 DP has developed a detailed O&M Work schedule showing all activities and resources to meet the targets defined in the Technical Provisions Attachment 18-1. This schedule is summarized in the preliminary baseline schedule as provided in **Figure 4.3-9**. The baseline O&M schedule provides an outline of our expectations for all maintenance requirements over the 35-year Operating Period. This schedule has been developed based on the specific design of the Project and the experience performing similar services on other projects. This includes understanding of the latest Good Industry Practices, the expected Useful Life of the works constructed and manufacturer expectations of the materials to be used to construct the Project.

4.3.2.2.a Schedule – Proposed O&M Schedule Methodology

The O&M schedule will remain as a live document throughout the Project lifecycle and is subject to ongoing review and update. It will enable us to manage all O&M Work effectively, allocate resources efficiently and closely monitor performance in all areas to achieve continuous improvement. The O&M Schedule will also include the activities of all specialty subcontractors.

4.3.2.2.a.i Approach for Project Schedule and Payment Request

Preparing, Controlling and Updating the Schedule

The Planned and Routine Maintenance schedule will be an annual schedule showing all daily, weekly and monthly scheduled maintenance activities, as it is shown in **Figure 4.3-9**. The O&M Manager has the flexibility to plan these activities according to local requirements, in response to the weather, special events or to minimize traffic disruption. This schedule will be updated weekly and submitted to IFA monthly. It will be reviewed internally to allow refinement of scheduling on a weekly/daily basis.

The Rehabilitation Works schedule is a 35-year schedule showing annual Planned Maintenance as described in **Figure 4.3-24**. This will be updated yearly to allow activities to be planned for the

following years in response to issues identified during the periodic visual and detailed inspections.

Calculating Monthly Performance

Compliance with the Performance Requirements will be continually monitored throughout the Operating Period. Any issues, events or defects will be recorded as non-conformances.

The quarterly Operations Report provided to IFA will include the following O&M Records: complete records of any incidents, inspections, and assessments, details of rehabilitation works, monthly lane closures and supporting information necessary to identify the occurrence and confirm satisfactory resolution of any Noncompliance Events, Unavailability Events or defects. Based on this information, the report will include a high-level summary of Noncompliance Events, Unavailability Events and Noncompliance Point assessments.

All reports will be provided as required in the PPA and Technical Provisions and will be used in the performance calculation.

Using the I69 MMS, the O&M Team will be able to access real-time roadway O&M reports. Performance compliance data will be extracted monthly to enable real-time reporting and quick corrective actions to be undertaken in response to any Noncompliance Event.



Preparing Quarterly Payment Request

The O&M Team will calculate the Quarterly Payment Request using data from the CMMS and O&M reports.

4.3.2.2.a.ii Approach to Integrating Subcontract Activities

Some subcontractor repairing activities are planned and some are emergencies. In either case, direct communication and coordination with them at all times is important and will be contractually assured. The Performance Requirements of the Technical Provisions will be built into all subcontracts, including financial penalties, so as to ensure that our partners are aware of the Project quality, safety and environmental requirements and embrace them. All O&M subcontractors will be required to commit to the overall management objectives. These will be

defined in a charter which all project participants, including the O&M Team, subcontractors, inspection organizations and main suppliers, will be requested to review and sign upon joining the Team.

4.3.2.2.a.iii Approach to Achieve the Project Schedule and Recover Any Schedule Slippage

Managing Resources and Activities

Setting and communicating the goals for the scheduled maintenance activities will be the main way in order to manage in-house or subcontracted resources in order to achieve the OMP and the Rehabilitation Work Schedule. This will be supported by accurate on site updates of progress for incorporation into the schedules. These updates will identify any areas of delay and impacts of those delays. Updated schedules will be included in the quarterly Operations Report issued to IFA.

Recovering Schedules Slippage

Early identification of negative variance from either the OMP or Rehabilitation Work Schedule, through the ongoing review of performance against the schedules, will minimize the need for any schedule recovery. This will include the allocation of additional management resources if required and increased performance measurement until the slippage has been recovered.

4.3.3 Operations and Maintenance Quality Management



The O&M Team is committed to achieving exceptional quality performance and meeting all of IFA's quality expectations for the Operating Period of the project. The general approach to quality management has been described in Section 4.1.5. I-69 DP will apply QMP throughout all project stages to achieve a consistent approach to quality management, from design to construction to O&M.

During the Operating Period our quality commitments will be to:

- Achieve or exceed the quality thresholds, deadlines and budget goals set forth in the PPA in accordance with the applicable legal framework and standards
- Ensure that the O&M Team meets all project O&M requirements in line with the contractual

requirements, public safety standards and environmental standards

- Establish best practices and foster continuous improvement through solicited and unsolicited feedback
- Communicate with all interested parties, including IFA, Users and nearby residents, to promote a positive image of the Project and anticipate and address any potential sources of dissatisfaction

The O&M Quality Plan identifies the means for monitoring and evaluating all aspects of project delivery against the Performance Requirements specified in the Technical Provisions. All the supporting data and calculations used will be submitted to IFA in the quarterly Operations Report. Since the final design, equipment selections and construction quality have an important influence in the requirements of the Plan, the O&M Team will further consider these requirements during the design development phase. At that time, our outlined Plan will be adapted to ensure it meets the specific requirements of the facilities that we design and build.

4.3.3.1 Description of Quality Assurance and Quality Control Function

As shown on Figure 4.3-27, the O&M Team follows the same quality assurance and control principles used in the design and construction stages of the project detailed in Section 4.1.5. The quality assurance system will include procedures to validate the data, times, dates and logs that are the basis to determine any Quarterly Payment Adjustments.



Our Quality Manager, Mario Benitez will be responsible for quality during the whole Term. The same approach and quality plan will apply during the design-build phase to provide a seamless and consistent process during the whole duration of the Project. Our Deputy Project Manager Technical, Carlos Ursua, will ensure a smooth transition from the Construction to the Operating Period. This includes our independent quality assurance team which will monitor and assess the activities carried out.

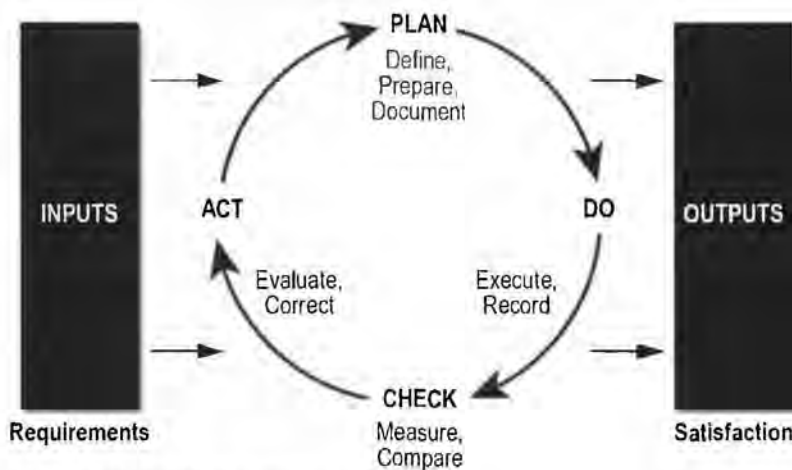


Figure 4.3-27: Quality Assurance

4.3.3.2 Approach to Involvement Reporting Relationships and Responsibilities for IFA and Department Oversight.

The quarterly Operations Report provided to the IFA form the basis of the IFA and Department's review of our performance and progress. This key report includes all quality system results, including reports on closures, Unavailability Events, Noncompliance Event and Incident log data. It includes all findings from the O&M Quality Plan as well as our assessment of O&M subcontracted activities, potential areas for performance improvement and lessons learned where appropriate.

During the Operating Period, IFA will be able to:

- Accompany the O&M Team on physical performance inspections, conduct its own performance inspections and assess and score the O&M Team's O&M Records.
- Monitor and audit the O&M Team's detection, reporting, response times and times to rectify breaches and failures for which Noncompliance Points or Unavailability Adjustments may be assessed pursuant to Section 11.3 of the PPA in accordance with Exhibit 10 (payment mechanism)

The O&M Team will coordinate and cooperate with IFA, its authorized representative and INDOT to facilitate IFA's and INDOT's oversight activities. IFA has the ability to use and access the CMMS to aid in these observations. Observations will be identified either as conforming or non-conforming

to related requirements of the PPA documents. The O&M Team will respond to all detected instances of Nonconforming Work using the CMMS and the I-69 MMS.

4.3.3.3 Internal Process for Preparing and Reviewing Reports

O&M Team patrollers and roadway maintenance operators will maintain a daily record of operations that will document all incidents, Noncompliance Events, Unavailability Events, lane closures and any issue that might arise on the

project. The O&M Manager will review and approve the record at the end of each day. These records will be reviewed weekly by the Project Manager.

4.3.3.4 Documentation and Correction of Non-compliance Issues.

The O&M Team procedure for issuing Nonconformance Reports is set out in the O&M Quality Plan. All Noncompliance Events are considered as non-conformances. Non-conformances could arise in relation to:

- Application of the project management system detected during audits, following complaints or via claims to/from IFA.
- The O&M services provided by the O&M Team.
- The Project assets, as identified during Project inspections.

Non-conformance will be documented on checklists and specialist's reports that will be included in the quality management activity procedures. The Quality Manager will be responsible for reviewing and submitting these documents, on a daily basis, and investigating reported instances to confirm or deny non-conformance. Confirmed instances of Nonconformance Event will be evaluated for their probability of reoccurrence.

Preventive or corrective action plans will be formulated and implemented for repeated problems. The development and implementation of these plans will be done by representatives from Quality and

O&M management. These plans will detail specific steps necessary to prevent or correct non-conformance and may include changes to O&M or quality management activity procedures. O&M and quality management will both agree on the plan and submit it to the Project Manager for approval.

The Quality Plan explains the methodology to deal with any current or potential non-conformances in a timely and efficient manner as well as for triggering corrective and improvement/preventive actions.

4.3.3.5 Continuous Improvement through Remedial and Preventive Actions

The O&M Team uses the results of our formal O&M quality performance audits, tests and

inspections, together with any team observations, claims or reported failures to comply with contract requirements, and identify continuous improvement opportunities. This list will include both remedial actions needed to correct deviations and avoid their recurrence and preventive actions needed to prevent future deviations from occurring.

As remedial and preventive actions are identified, they will be recorded in an actions list. This list explains how each action was defined, its approval cycle and related monitoring requirements. For all approved actions the list includes a detailed description, date of issue, deadline for action and identified owner.

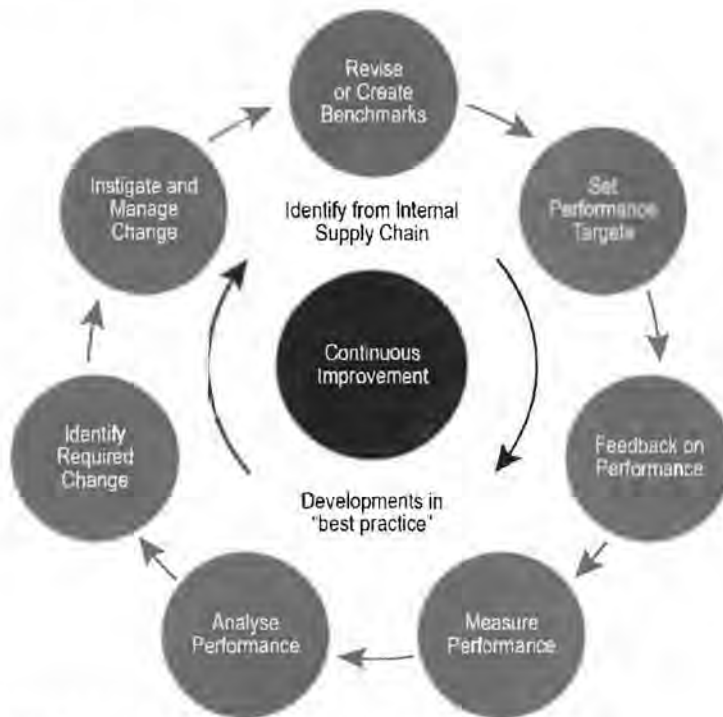


Figure 4.3-28: Continuous Improvement Cycle

EXHIBIT 2-H

EQUITY MEMBERS, CONTRACTORS AND KEY PERSONNEL COMMITMENTS

Equity Members

Developer represents and warrants that the following are all the Equity Members:

I-69 Investment Partners LLC

Key Contractors

Developer commits to provide, and IFA hereby approves, the following firms and organizations to initially serve as the following Key Contractors:

Names of Key Contractors	Key Contract
Corsán-Corviam Construcción, S.A.	Design-Build Contractor
AZTEC-TYPSA JV (joint venture between AZTEC Engineering Group, Inc. and Técnica y Proyectos, S.A.)	Lead Engineering Firm

Other Contractors

Developer commits to provide, and IFA hereby approves, the following firms and organizations to initially serve as other Contractors:

Names of Contractors	Contract
Gradex, Inc.	Earthwork, grading, underground utilities Contractor
Force Construction Company, Inc.	Structures, bridges Contractor
E&B Paving, Inc.	Paving Contractor
Burgess & Niple, Inc.	Roadway, structures design Contractor
Christopher B. Burke Engineering, LLC	Drainage design Contractor
VS Engineering, Inc.	Traffic lighting, signalization Contractor
Keramida, Inc.	Geotechnical, karst assessment

	Contractor
Professional Service Industries, Inc.	Geotechnical assessment Contractor
iTunnel, Inc.	Geotechnical assessment Contractor
Hardlines Design Company	Cultural resource and historic preservation management Contractor
Eco-Tech Consultants, Inc.	Fauna, biology, botany studies Contractor
The McCormick Group, Inc.	Public involvement, DBE Coordination Contractor

Key Personnel

Developer commits to provide, and IFA hereby approves, the following individuals to initially serve as the following Key Personnel:

Names of Key Personnel	Key Personnel Positions
Jose A. Labarra	Project Executive (if different from the Project Manager)
José R. Ballesteros	Project Manager
Carlos Ursua	Deputy Project Manager
Vicente Ferrio	Construction Manager
Michael Riggs	Lead Engineer
Miguel A. Barranco	Operations & Maintenance Manager
Mario Benitez	Quality Manager
Felipe Medrano, Mario Colecchia (structural)	Engineers of Record

Miguel Garrido	Financial Director
Tony Carpenter	Public Information Coordinator
Matti McCormick	DBE Coordinator
David Hayward	Utility Manager
Jason Bagwell	Construction Quality Manager
Tom Maki	Design Quality Manager
Matt Flick	Safety Manager
Richard Fitch	Environmental Compliance Manager
Steven Sittler, James Pease, Paul Passe, Eugenio Sanz	Karst Specialists
Dan Agan	Erosion and Sediment Control Manager
Brad Faris	Maintenance of Traffic (MOT) Manager

EXHIBIT 2-I

COST TABLES

[attached]


2-I(1) Summary Cost Table


2-I(2) Capital Cost Table

2-I(3) Operating Period Cost Table

Form O – 1 Design and Construction Capital Cost Table		
Cost Category	Capital Cost *	
Project Management (including project oversight costs and Developer cost/overhead)		
Design and Construction management and general activities		
Design		
Environmental		
Roadways Construction		
Structures Construction		
Utilities		
O&M During Construction		
Public Information and Coordination		
Contingency and Profit		
	Labor Cost	Non-Labor Cost
Subtotals		
Totals	\$325,530,779	(Total Project Capital Costs)

* The difference between Total Capital Costs in Form O1 and Form O2 arises due to there being no inflation applied to the Operating Costs presented in Form O1.

Form O – 2 Cumulative Design and Construction Capital Cost Table		
<u>Cost Category</u>	<u>Quarter</u>	<u>Capital Cost *</u>
Construction Year 1	Quarter 1	
	Quarter 2	
	Quarter 3	
	Quarter 4	
Construction Year 2	Quarter 1	
	Quarter 2	
	Quarter 3	
	Quarter 4	
Construction Year 3	Quarter 1	
	Quarter 2	
	Quarter 3	
	Quarter 4	
	Totals	<u>\$325,740,026</u> (Total Capital Cost for Project)

* The  difference between Total Capital Costs in Form O1 and Form O2 arises due to there being no inflation applied to the Operating Costs presented in Form O1.

Form O – 3 Operating Period Cost Table												
Cost Category	ANNUAL EXPENDITURE PLAN											
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10		
Project Management and General Activities												
Operations												
Insurance												
Roadway and Structure Maintenance												
Rehabilitation Work												
Totals	\$3,050,486	\$3,187,510	\$3,900,336	\$4,271,841	\$4,187,350	\$4,656,142	\$4,438,848	\$4,654,925	\$5,050,348	\$5,607,548		

Form O – 3 Operating Period Cost Table												
Cost Category	ANNUAL EXPENDITURE PLAN											
	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20		
Project Management and General Activities												
Operations												
Insurance												
Roadway and Structure Maintenance												
Rehabilitation Work												
Totals	\$5,829,245	\$5,754,314	\$6,206,874	\$9,660,082	\$11,008,843	\$11,520,990	\$12,059,140	\$9,166,643	\$6,928,123	\$7,092,641		

Form O – 3 Operating Period Cost Table												
Cost Category	ANNUAL EXPENDITURE PLAN											
	Yr 21	Yr 22	Yr 23	Yr 24	Yr 25	Yr 26	Yr 27	Yr 28	Yr 29	Yr 30		
Project Management and General Activities												
Operations												
Insurance												
Roadway and Structure Maintenance												
Rehabilitation Work												
Totals	\$6,840,889	\$6,911,091	\$6,981,119	\$7,523,502	\$10,482,311	\$11,761,763	\$10,900,843	\$13,040,913	\$10,674,797	\$20,995,860		

Form O – 3 Operating Period Cost Table												
Cost Category	ANNUAL EXPENDITURE PLAN											
	Yr 31	Yr 32	Yr 33	Yr 34	Yr 35							
Project Management and General Activities												
Operations												
Insurance												
Roadway and Structure Maintenance												
Rehabilitation Work												
Totals	\$23,200,922	\$24,012,919	\$12,209,942	\$10,032,508	\$27,044,610							

* Annual costs run from the year starting November 01 to October 31

EXHIBIT 2-J

TERMINATION FOR CONVENIENCE CALCULATION METHOD

[attached]

FORM V

TERMINATION FOR CONVENIENCE CALCULATION METHOD

Should IFA terminate the Agreement according to Section 20.1 of the Agreement, the undersigned Proposer hereby chooses to be paid a compensation amount equal to the ***Backward Looking Termination for Convenience Amount***, and irrevocably and unconditionally renounces and waives any right to claim the ***Forward Looking Termination for Convenience Amount***.

Date: January 21, 2014

Proposer: I-69 Development Partners

Signature: _____

Title: Jose R. Ballesteros (Proposer Authorized Representative)

EXHIBIT 2-K

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[attached]

FORM Q

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[To be executed by the Proposer, Equity Members, Major Participants and proposed Contractors]

The undersigned certifies on behalf of **I-69 DEVELOPMENT PARTNERS**, that:

[check one of the following boxes]

- ☐ It has developed and has on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-2 (Affirmative Action Programs).
- ☒ It is not subject to the requirements to develop an affirmative action program under 41 CFR Part 60-2 (Affirmative Action Programs).

[check one of the following boxes]

- ☒ It has not participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246.
- ☐ It has participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246 and, where required, it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Signature: _____

Jose R. Ballesteros

Title: Proposer Authorized Representative

Date: January 21, 2014

If not Proposer, relationship to Proposer: Proposer

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by Proposers only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by Executive Orders or their implementing regulations.

Proposers, Equity Members, Major Non-Equity Members or proposed Contractors who have participated in a previous contract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

FORM Q

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[To be executed by the Proposer, Equity Members, Major Participants and proposed Contractors]

The undersigned certifies on behalf of **ISOLUX INFRASTRUCTURE NETHERLANDS B.V.**, that:

[check one of the following boxes]

- ☐ It has developed and has on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-2 (Affirmative Action Programs).
- ☒ It is not subject to the requirements to develop an affirmative action program under 41 CFR Part 60-2 (Affirmative Action Programs).

[check one of the following boxes]

- ☒ It has not participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246.
- ☐ It has participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246 and, where required, it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Signature: _____

Title: José R. Ballesteros (Director)

Date: January 21, 2014

If not Proposer, relationship to Proposer: Equity Member

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by Proposers only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by Executive Orders or their implementing regulations.

Proposers, Equity Members, Major Non-Equity Members or proposed Contractors who have participated in a previous contract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

FORM Q

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[To be executed by the Proposer, Equity Members, Major Participants and proposed Contractors]

The undersigned certifies on behalf of Corsan-Corviam Construcccion, S.A., that:
(Name of entity making certification)

[check one of the following boxes]

- ☐ It has developed and has on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-2 (Affirmative Action Programs).
- ☒ It is not subject to the requirements to develop an affirmative action program under 41 CFR Part 60-2 (Affirmative Action Programs).

[check one of the following boxes]

- ☒ It has not participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246.
- ☐ It has participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246 and, where required, it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Signature: 

Title: International Technical Director

Date: January 21, 2014

If not Proposer, relationship to Proposer: Major Participant

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by Proposers only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by Executive Orders or their implementing regulations.

Proposers, Equity Members, Major Non-Equity Members or proposed Contractors who have participated in a previous contract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

FORM Q

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[To be executed by the Proposer, Equity Members, Major Participants and proposed Contractors]

The undersigned certifies on behalf of AZTEC-TYPSA JV, that:
(Name of entity making certification)

[check one of the following boxes]

- ☒ It has developed and has on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-2 (Affirmative Action Programs).
- ☐ It is not subject to the requirements to develop an affirmative action program under 41 CFR Part 60-2 (Affirmative Action Programs).

[check one of the following boxes]

- ☐ It has not participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246.
- ☒ It has participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246 and, where required, it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Signature: _____

Title: Chief Executive Officer

Date: January 15, 2014

If not Proposer, relationship to Proposer: Major Participant

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by Proposers only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by Executive Orders or their implementing regulations.

Proposers, Equity Members, Major Non-Equity Members or proposed Contractors who have participated in a previous contract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

FORM Q

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[To be executed by the Proposer, Equity Members, Major Participants and proposed Contractors]

The undersigned certifies on behalf of AZTEC Engineering Group, Inc., that:
(Name of entity making certification)

[check one of the following boxes]

- ☒ It has developed and has on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-2 (Affirmative Action Programs).
- ☐ It is not subject to the requirements to develop an affirmative action program under 41 CFR Part 60-2 (Affirmative Action Programs).

[check one of the following boxes]

- ☐ It has not participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246.
- ☒ It has participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246 and, where required, it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Signature: Robert L. Lender

Title: Chief Executive Officer

Date: January, 15, 2014

If not Proposer, relationship to Proposer: Major Participant

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by Proposers only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by Executive Orders or their implementing regulations.

Proposers, Equity Members, Major Non-Equity Members or proposed Contractors who have participated in a previous contract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

FORM Q

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[To be executed by the Proposer, Equity Members, Major Participants and proposed Contractors]

The undersigned certifies on behalf of TYPSA (Técnica y Proyectos S.A.), that:
(Name of entity making certification)

[check one of the following boxes]

- ☒ It has developed and has on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-2 (Affirmative Action Programs).
- ☐ It is not subject to the requirements to develop an affirmative action program under 41 CFR Part 60-2 (Affirmative Action Programs).

[check one of the following boxes]

- ☐ It has not participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246.
- ☒ It has participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246 and, where required, it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Signature: 

Title: General Manager North America

Date: January 15, 2014

If not Proposer, relationship to Proposer: Major Participant

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by Proposers only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by Executive Orders or their implementing regulations.

Proposers, Equity Members, Major Non-Equity Members or proposed Contractors who have participated in a previous contract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

FORM Q

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[To be executed by the Proposer, Equity Members, Major Participants and proposed Contractors]

The undersigned certifies on behalf of Gradex, Inc., that:
(Name of entity making certification)

[check one of the following boxes]

- ☒ It has developed and has on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-2 (Affirmative Action Programs).
- ☐ It is not subject to the requirements to develop an affirmative action program under 41 CFR Part 60-2 (Affirmative Action Programs).

[check one of the following boxes]

- ☐ It has not participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246.
- ☒ It has participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246 and, where required, it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Signature: 

Title: President

Date: January 15, 2014

If not Proposer, relationship to Proposer: Proposed Contractor

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by Proposers only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by Executive Orders or their implementing regulations.

Proposers, Equity Members, Major Non-Equity Members or proposed Contractors who have participated in a previous contract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

FORM Q

EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

[To be executed by the Proposer, Equity Members, Major Participants and proposed Contractors]

The undersigned certifies on behalf of Force Construction Company, Inc., that:
(Name of entity making certification)

[check one of the following boxes]

- ☒ It has developed and has on file at each establishment affirmative action programs pursuant to 41 CFR Part 60-2 (Affirmative Action Programs).
- ☐ It is not subject to the requirements to develop an affirmative action program under 41 CFR Part 60-2 (Affirmative Action Programs).

[check one of the following boxes]

- ☐ It has not participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246.
- ☒ It has participated in a previous contract or subcontract subject to the equal opportunity clause described in Executive Orders 10925, 11114 or 11246 and, where required, it has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Signature: 

Title: President

Date: January 15, 2014

If not Proposer, relationship to Proposer: Proposed Contractor