



Basis for an Integrated Project Delivery Team

1.0 VALUE PROPOSITION

The traditional approach to pipeline projects creates a disconnect between the planning phase and the execution phase. This creates a reactive project environment which can cause adversarial relationships between key stakeholders resulting in late changes, lost productivity, lower quality, and missed cost or schedule targets.

Plex Projects Inc. (Plex) proposes to execute pipeline projects using the Integrated Project Delivery model. This model creates a collaborative team consisting of the Project Owner, the EPCM Consultant, and the Pipeline Contractor. A unique contractual arrangement aligns the interests of the team to achieve the project goals. In this arrangement, the profits of the participants are directly tied to the project's success and includes an incentive strategy that rewards the team for performance excellence.

The end result is a project that meets or exceeds its cost and schedule targets. Open and consistent communication empowers the team to make effective decisions at the right time therefore improving productivity, quality, and safety during the work, while also reducing rework, lack of coordination, and change requests.

Plex is actively seeking a Project Owner with a need for leading edge execution on their pipeline projects. A partnership using the Integrated Project Delivery model will ensure that precise planning results in effective execution.

2.0 INTRODUCTION

Plex Projects Inc. was created to bridge the gap between planning and execution by focusing on integration and collaboration. We are a team of engineers and project managers with extensive experience in complex pipeline construction and integrity projects. We understand that favourable project results come from accommodating effective stakeholder engagement, safety principles, risk management, regulatory and environmental compliance, and cost and schedule certainty.

The vision of Plex was borne out of our frustrations while managing major pipeline projects for Canada's largest pipeline company. Using the traditional approach to deliver pipeline projects created a disconnect between engineering design and construction that consistently led to costly change orders and schedule delays, poor quality, and broken relationships.

Traditional pipeline projects create conflicting interests between the owner, the engineering consultant and the contractor. When bidding on a pipeline project, the contractor must interpret the contract documents with a focus on least capital cost. If work is omitted from the plans, it must be omitted from the bid. Once the project has begun, the contractor is encouraged through the change order process to discover, document, and bill for each design error or omission. Knowing that the contractor may bid on and manage the project aggressively, the engineer will over-design the project to transfer risk to the contractor. This conflict is not in the best interest of the project owner.

At Plex, we value the creation of a single, collaborative project team whose interests are fundamentally aligned with the success of the project in order to deliver world class expertise in the planning and execution of pipeline projects. We propose the use of the Integrated Project Delivery model.

3.0 INTEGRATED PROJECT DELIVERY

Integrated Project Delivery (IPD) is a delivery system that seeks to align interests, objectives and practices, through a team-based approach. Rather than each party focusing exclusively on their scope without considering the implications on the whole project, the IPD method brings all participants together early with collaborative incentives to maximize value for the project owner.

IPD has been successfully utilized in the construction industry. Plex believes the pipeline industry is poised to adopt this new approach.

The benefits of the IPD approach include:

- Streamlined planning, execution, and decision making
- Engagement of the contractor and other service providers in the planning and design phase, creating continuity into construction and execution
- Project estimates and schedules developed with, and vetted by, those completing the work, creating cost and schedule certainty
- Engineering deliverables that accurately reflect the construction execution plans implemented by the contractors, eliminating change orders during field work
- The use of contingency generated by the team through the planning phase to incentivize the successful achievement of project goals
- Cost savings initiatives are distributed to the team as profit, inclusive of the project owner
- Improved relations with regulators and other stakeholders through consistency, repeatability, and project certainty
- Alignment of interests between all parties, inclusive of the project owner

3.1. IPD MODEL

IPD projects have five major elements:

- Early involvement of key participants
- Shared risk and reward based on project outcome
- Joint project control
- Reduced liability exposure
- Jointly developed and validated targets

Early involvement of key participants is the most important IPD element. The broad experience of the diverse team creates high value design. Engineers provided with information concerning effectiveness and constructability of alternative concepts can more accurately choose systems and layouts that efficiently achieve the project goals. The contractors provide pricing information that is current and accurate, leading to better price control and fewer change orders. When parties are engaged in developing the project design, they develop a commitment to the overall project, not just to their individual scope.

IPD agreements tie compensation to achievement of project objectives. All or part of the parties' profits are placed at risk, while profit is augmented when project performance is met or exceeded. Shared risk/reward serves to align the parties to the project objectives. When compensation is based on achieving those objectives, it incentivises each party to understand precisely what the objectives are and how they are best achieved.

Joint project control requires real communication between the parties. The parties must clearly explain the issues from their perspectives and listen to the perspectives of others. This increased understanding provides clear and jointly held understanding of the issues. Joint project control balances the interests of the parties and provides a check against favouring the interests of one party over the others. It reflects a fundamental fairness. IPD parties are accepting risk based on project outcome, so they have a voice in decisions that affect those risks.

The primary reasons for limiting liability are to increase communication, foster creativity, and reduce excessive contingencies. Liability waivers serve to reduce the fear of failure. Liability exposure directly raises project costs through increased contingency allocations. Traditionally, parties evaluate their own project risks and allocate an allowance into the project cost. This is repeated by each party, resulting in the cumulative risk allowances exceeding the actual contingency required for the project. Limiting liability eliminates redundant risk allowances.

Jointly developed targets are the team's first collaborative act. They document the parties' agreement regarding objectives and confirm that they are achievable. The targets serve as metrics for compensation adjustment, and as goals for high value design. Because they are jointly developed, all parties own the objectives and are committed to their achievement. Jointly developed and validated targets are the mission statement of the IPD project.

3.2. IPD TEAM

The key members and roles of an IPD team are as follows:

3.2.1. Project Owner

The Project Owner's role in an IPD project differs significantly from a traditional pipeline project. The owner in an IPD project must act as a contributing member of the planning and execution team involved during every stage of the process, not just act as a reviewer or approver. The Project Owner must continuously communicate its needs and vision while recognizing the legitimate interests of the other parties.

3.2.2. EPCM Consultant

Plex will act as the EPCM Consultant and be accountable for the completion of all aspects of the planning phase of the project. Services include all data gathering, engineering and design of the project, and providing the execution plan documents. During execution, the EPCM Consultant provides technical support and quality assurance services.

3.2.3. Pipeline Contractor

The Project Owner and the EPCM Consultant select a Pipeline Contractor to join the IPD team early in the project. The Pipeline Contractor is an integral part of the planning process, as they provide input on construction logistics, methodology, equipment capability, manpower requirements, etc. The Pipeline Contractor is accountable for execution of the project per the plans developed in the planning phase.

3.2.4. Third Party Services

Third party services not provided by the IPD team will be selected and managed jointly by the team. Use of the Project Owner's preferred vendor list will be used to guide the selection of these vendors.

3.2.5. Steering Committee

The integrated team approach requires the establishment of a Steering Committee. This committee is made up of non-project members from the Project Owner, the EPCM Consultant, and the Pipeline Contractor. It also includes an independent specialist who is familiar with the IPD method.

The role of the Steering Committee is not to provide oversight, or manage the project team, but to provide mentorship, and facilitate accountability to the project team.

- Review project progress at defined milestones
- Provide conflict resolution, if required
- Determine exit strategies if collaboration is performing poorly

3.3. CONTRACTUAL ARRANGEMENT

The creation of an IPD team requires the development of an IPD Agreement. The IPD Agreement is a multi-party agreement developed through simultaneous negotiation of multiple parties with a high degree of transparency. The parties need to be able to openly discuss their goals and concerns and to trust the information being provided by their prospective teammates.

The parties partake in a negotiation workshop to thoroughly discuss the principles, issues and options affecting the IPD Agreement. Facilitation by parties experienced in IDP methodology is highly recommended.

At the conclusion of all negotiations, all parties should have a clear understanding of the project structure and how it will be implemented. As the project progresses, the IPD Agreement should be periodically re-evaluated to incorporate improvements in communication and workflow and to accommodate changes that may have occurred.

4.0 NEXT STEPS

IPD is a major departure from the traditional approach to pipeline projects. With any new process, there will be challenges to overcome, such as:

- Fundamental shift in leadership, organizational structure, team communication, and culture from all IPD participants
- Open and honest disclosure of alignment of interests for the IPD team
- Development of a culture of trust between independent organizations
- Identification of parties willing to engage in an IPD project
- Recognition of the ideal project to trial IPD methodology

By implementing an IPD project, Plex promises to deliver:

- Resources are provided at cost
- Development of high value engineering and execution plans
- Development of a highly accurate project estimate based on the team's input
- Generation of a fixed price contract for the construction of the project
- EPCM Consultant's and Pipeline Contractor's profits contingent upon successfully meeting the project objectives

Upon the successful completion of the IPD project, the Project Owner will achieve the following rewards:

- Significantly lower project costs
- Efficient execution, resulting in higher productivity to achieve schedule milestones
- Improved relationships with external stakeholders
- Improved team culture, leading to increased morale
- Faster integration into operations
- A leading edge project management experience

Plex is excited to collaborate with a Project Owner who wants to transform the execution of their pipeline projects with this innovative approach.