COLLABORATIVE CONTRACTING FRAMEWORK

Version 1

May, 2020

A Best Practice Guideline and Toolkit of the Construction Owners Association of Alberta

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A COLLABORATIVE CONTRACTING FRAMEWORK

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1.0 INTRODUCTION

If you speak to many seasoned veterans of the construction industry, they will say that, over the years, the industry has become less productive. It is built less on good personal relationships that enable good communication and problem solving, and has become more transactional (in other words, don't pick up the phone, just send an email). Contracts have doubled, tripled, and then quadrupled in size, and the experience, overall, is less enjoyable.

Many have asked, "Is there a better way?" Studies have shown, the answer is yes; in fact, other jurisdictions around the world have embraced the concept of Collaborative Contracting with overwhelmingly positive results.[1] However, it takes a shift in thinking and some new skills to make it work. The collaborative approach goes under a variety of names, such as partnering, alliancing, and integrated project delivery. The bottom line is, the value Collaborative Contracting can bring means better potential for investments in major projects in the future.

As the industry in Western Canada continues to see a significant decline in investor confidence, we must ensure our focus for this initiative is balanced between people, contractual requirements and realistic goals. After all, the goal of this framework is not to boil the ocean, but rather shift from our current state of traditional contracting models to a more collaborative approach using a methodical, stepped approach. Before this can begin, we must address the fears, past failures and personal risks to adopting this shift in mindsets. Let's start by asking the question – What's in it for me?

Whether you represent the owner, contractor, engineering, fabrication or operations groups, each of us will have a different view on risk, reward and return on personal time invested. Additionally, depending on your project discipline (project management, supply chain, construction, operations, etc.) you will have varying goals from this framework. To ensure the success of this initiative, all stakeholders must have a seat at the table and input into the rollout and industry adoption. While this requires the adoption (and trust) by all stakeholders to create aligned interests and achieve success, the process must start with the owner's teams. This shift will not take place overnight and it's important to start with influential leaders from owners/operators, supply chains, engineering, contractors, manufacturers and trades personnel; such leaders who believe there is a better way to work together, that change is possible, and who can create a trusting environment.

> *"To collaborate between parties and learn lessons from each other was psychologically less burdensome than having the feeling of 'you are on your own'".* - Owner Inspector

In the UK, an investigation commissioned by the UK Government and undertaken by Construction Task Force released its findings in the Egan Report "Rethinking Construction." One of the concluding sentences highlights their view of a complete rethink of the methodologies used currently in the construction industry.

[1] Jergeas, George and Lynch, Robert, "Future Pathway for Industrial Mega-Project Delivery". In this study, the authors provide concrete, empirical evidence that increased collaboration among the project stakeholders directly contribute to positive project outcomes. Based upon an analysis of 90 Canadian projects, those that utilized a collaborative approach to deliver the project had >80% change of on-time, on-budget, on-target project delivery versus <30% for adversarial or traditional project delivery approaches. Their evidence showed that collaborative project delivery achieved best in class results, including on average a 10% reduction in total project costs, significantly improved safety results, a 20% improvement on schedule, a 50% reduction in quality rework, an 83% reduction in projects claims, and a 30% increase in project personnel morale. This is just one of many similar studies that show solid evidence of best in class project results when utilizing a collaborative approach to project / construction delivery.

"..the Task Force wishes to emphasize that we are not inviting UK construction to look at what it does already and do it better: we are asking the industry and Government to join with major clients to do it entirely differently" (The Construction Task Force, Sir John Egan, 1998)

Their vision of the future suggests a much more collaborative approach including:

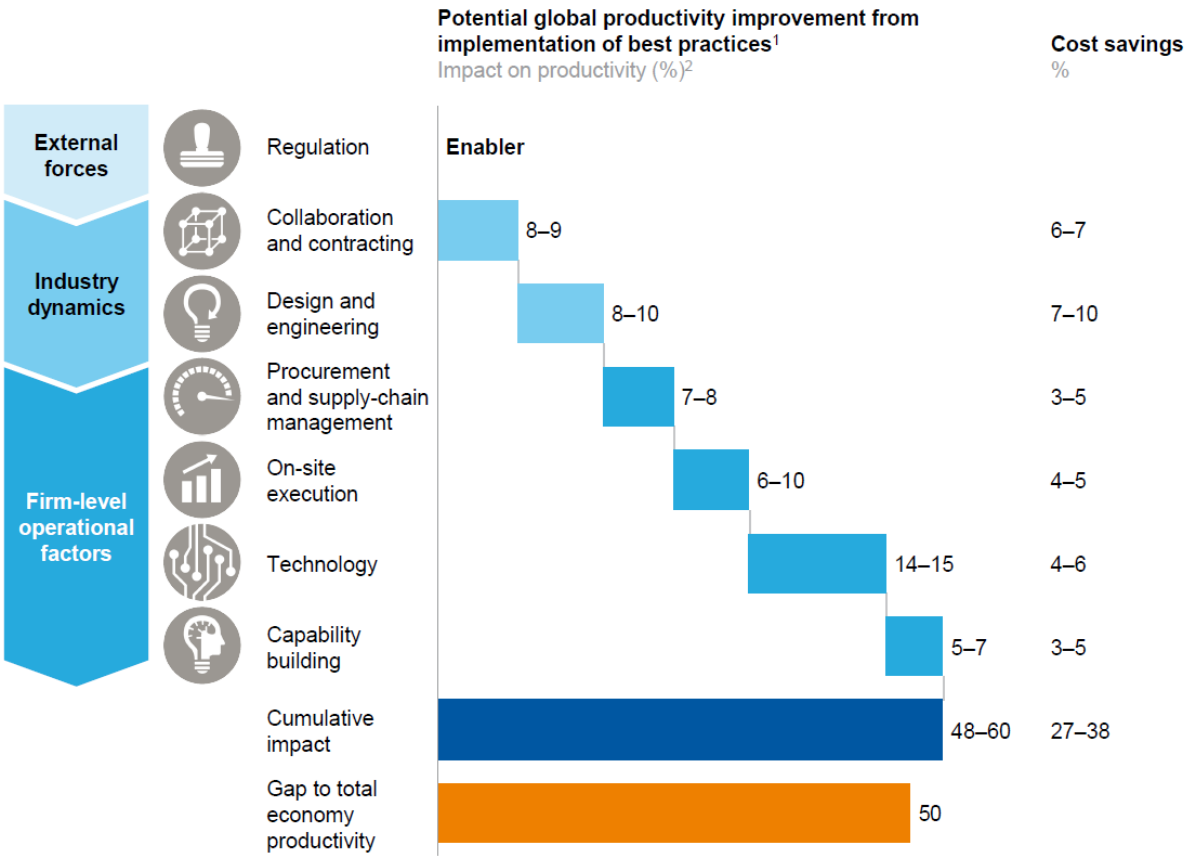
- An integrated project process
- Competitive tendering replaced by a team approach based on long term relationships
- Standardisation of components and processes

A more collaborative approach should improve productivity and cost efficiency by targets of:

- An annual reduction in construction time of 10%, a similar reduction in capital costs
- And a 20% reduction each year in defects on handover

> "The basis for successful Collaborative Contracting starts with trust, fostering the relationship through open dialog allowing both parties to table solutions and concerns. The ability to break the barrier of the owner/contractor traditional contracting relationship through collaboration has reduced the overall TIC, improved quality and productivity and most importantly safety culture. The ability to treat the above ground flow lines at Firebag as a program verses project to project has allowed for strong retainage of craft and management, resulting in predictability and strong commitment to the team'
>
> *Chris Martineau*
> *President*
> *SITE Resources Group*

Similarly, McKinsey Global Institute, see **Figure 1 Potential Global Productivity Improvement from Implementation of Best Practices** , has identified greater collaboration in contracting can result in increasing productivity up to 8-9% and generate cost savings up to 6-7% in overall project costs. This suggests that a savings of $1.4B could be realized for every $20B of new capital investment. The reduction may be achieved through greater project transparency, stronger collaboration efforts, and the use of appropriate contracting structures that reflects the risks and aligned interests of the parties.



1 The impact numbers have been scaled down from a best case project number to reflect current levels of adoption and applicability across projects, based on respondents to the MGI Construction Productivity Survey who responded "agree" or "strongly agree" to the questions around implementation of the solutions.
2 Range reflects expected difference in impact between emerging and developed markets.

SOURCE: McKinsey Global Institute analysis

Figure 1 Potential Global Productivity Improvement from Implementation of Best Practices (McKinsey Global Institute, 2017)

COAA has identified the use of Collaborative Contracting as a key step change that is needed to assist in achieving an improved productivity and competitiveness in the Alberta Heavy Industrial Sector.

The measures from the UK Government and McKinsey noted above highlight the improvements that collaborative models have on traditional measures of success: on-time and on-budget. However, modern major projects have the potential to deliver so much more and address the other measures that define successful outcomes:

Safety: Everyone goes home safe and feels safe to be their best.

Customers: Our customers' needs are met and we deliver on our commitments.

Stakeholders: Our stakeholders accept our projects and welcome us.

Contractors and Vendors: Our contractors and vendors perform predictably and coordinate. They have clear expectations and encounter minimal change.

Operations: Our operating business partners feel prepared and unburdened.

Employees: Our Employees feel appreciated and supported.

The definition of success has evolved from simply being on-time and on-budget. The definition of success now includes the legacy our projects and industry leave behind, and the pride we have in building that legacy. Recently, many projects have failed to launch because the other measures of success have been left unaddressed. Collaborative Contracting presents the opportunity to strike a balance between demanding results and accountability, with creating work environments that focus on learning and relationships. This balance enables the team to deliver broad project success.

Great work processes and procedures will invariably fail if both trust and true collaboration doesn't exist between the owners and contractors. However, strongly collaborative teams can, and have, overcome bad process, systems and tools to have successful outcomes. This framework document is intended to help you on your journey to better project outcomes and to give you the courage to take a chance on a new approach.

"It helped more than anything. I feel as though you were letting down a family member more than a co-worker in many cases. It made you take ownership and be comfortable asking tough questions and giving tough answers/news." - Major Equipment Vendor

Collaborative Contracting Framework

The attached framework and guidelines offer a model documenting the various stages in the development and execution of a collaborative partnership and the key criteria to be considered at each stage. The guideline also directs the reader, within each phase, to the appropriate existing literature, or suggested checklists, deliverables, maturity scoring scale and, in certain instances, provides standard forms for consideration in the documentation of the collaborative partnership arrangement.
The framework includes the following deliverables:

1. Definition for Collaborative Contracting
2. Identification of the critical elements to achieve Collaborative Contracting
3. Guiding principles to contracting structures, compensation and incentive models
4. Collaboration maturity assessment
5. Contract collaboration toolkit for various project stages that enables greater collaboration
6. Risk sharing model and framework for risk allocation
7. Project complexity model as it relates to collaboration
8. An implementation guideline/road map to achieve greater Collaborative Contracting
9. Recommendation to training and development to encourage industry adoption

The sub-committee has, where possible, used and relied on existing best practices and research and has analysed a number of existing suggested methodologies to align the common themes. It has also suggested the behaviors, standard forms, checklists and guidelines, which the subcommittee believes, offer the most practical and efficient development of the Collaborative Contracting relationship.

Recognition is owed to all industry stakeholders who take an interest in making our industry more efficient; particularly those who have supported the creation of this framework and those who will champion its use.

The COAA membership and board of directors, through to the working committee members, who worked collaboratively on this best practice, should be commended for contributing their valuable time and experience for the mutual benefit of the industry.

"With the support of senior leadership, the project team broke down the barriers of standard adversarial contracting by using a Collaborative Contracting process. We established a 'One Team' approach with joint commitment to forge common goals that were mutually beneficial for both companies involved. Through the collaboration, the team fostered a co-operative bond and an environment of trust and respect. This approach paid off - with a strong project safety record, productivity gains, cost savings and successful completion of the project on time. Collaborative Contracting proved itself to be a best practice"
Gerald Scott
Project Director
Suncor Energy Services Inc.

2.0 COLLABORATIVE CONTRACTING

2.1 What is Collaborative Contracting

According to CII, today's heavy industrial projects have a mere 5.4% success rate. As a collective, industry faces:

- Regulatory change and uncertainty
- Sustainability pressures
- New public expectations
- Even more tightened cost controls

While Alberta's industrial projects have been facing an imperative for change for some time and the need for change is clear, it's the actual activation of change that has been found to be a challenge. The approach to contracting can have an outsized impact on the results of a project by either seriously helping or hindering its outcomes.

Successful Collaborative Contracting puts special consideration on the people, their processes and how they interact. It is dynamic, collaborative and responsive and puts new consideration to things such as: sharing of risk, the approach to communication, issue resolution and the enforcement of promises.

"Having a close relationship with your working team helps efficiently resolve problems as quick phone calls and numerous discussions become more

How does COAA define *Collaborative Contracting*?

Essentially, a method of contracting, ideally supported by contractual language, that focuses on enablement of collaboration and an alignment of interests between key contributors (e.g. owner, constructor, engineer, fabricator, etc.) to the successful outcome of the project.

The risks and rewards of a contractual arrangement are shared such that all contributors to the agreement are contractually aligned to incentivise achieving a common goal. Collaboration requires carefully developed trust between the contributors, as well as an integrated team that shares in goal setting, measurement against progress and decision making throughout.

When successfully applied, many benefits can be realized including a reduction in non-value duplication, efficiencies of procedures and processes with a focus on more efficient results arising out of improved team dynamics.

"When we had concerns with relationships it was hard to talk about from a contractor to the owner, however this was encouraged and the trust was built, this allowed open talks about issues that once were brought up things were changed, so from a contractor stand point it was amazing to be heard and out gratitude needs to be expressed, this helped us be successful" - Contractor

All key contributors must work together with high integrity and trust to ensure all decisions are in the best interest of the project outcomes.

A successful **Collaborative Contracting** environment will include:

- Integrated, equitable and joint management of the project among all key contributors (i.e. owner, constructor, engineer, fabricator, etc.)
- Fair risk management and risk/reward sharing
- A commitment to no disputes
- Decision making that focuses on project outcomes and adding value
- A no fault/no blame culture
- Full transparency and accountability related to the project
- Enabling vs. prescription contract provisions
- Distributed decision making
- Clear project and enterprise based KPIs (Key Performance Indicators)
- Reward for purposeful innovation
- Effective issue resolution
- Willingness to collaborate
- Mutual trust and respect
- Open communication and information sharing

To better understand the nuances of different types of collaboration and the spectrum from one side to the other, a diagram has been compiled to show the aspects of risk, communication, drivers, complexity etc. **See Figure 2.**

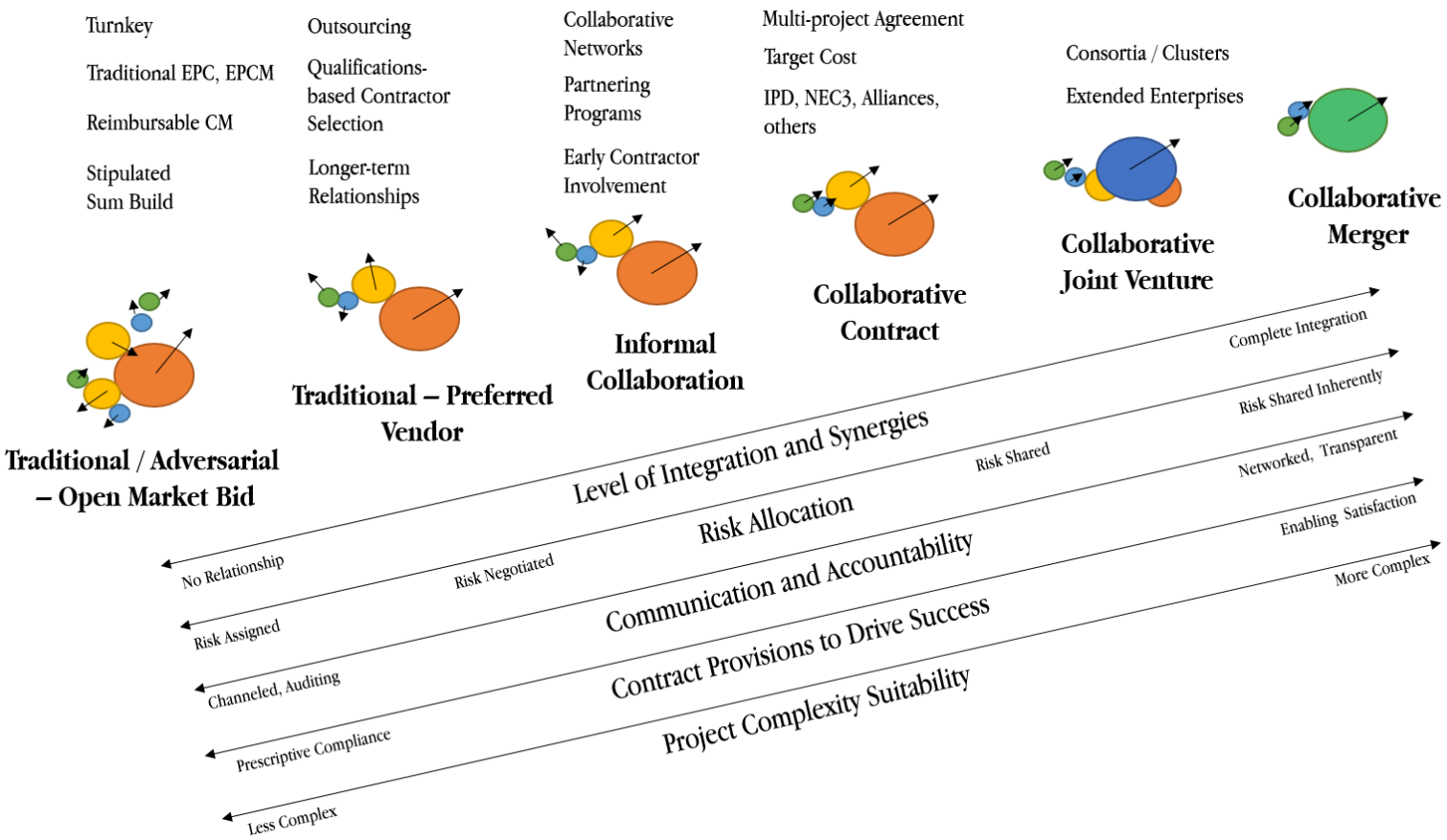


Figure 2 Relationship Spectrum

2.2 Benefits of Implementing a Collaborative Contracting Relationship

The benefits for Collaborative Contracting include increased probability of successful project outcomes (i.e. cost certainty, schedule compliance, reduced change, quality work, and safety performance) as well as other benefits including:

- Fosters stakeholder alignment, understanding and alignment of business and project objectives
- Early and joint consideration, identification and treatment of risk in project development
- Avoidance of disputes or claims
- Greater understanding of impacts of scope of work, benefit evaluations, and interface management
- Deeper connection of owners' and other key contributors' objectives and aligning for mutual success
- Shared lessons learned that can transparently be integrated into ongoing and future projects
- A stable process for value creation, including through innovation

"The word that comes to my mind to describe the relationship is: Camaraderie. In my mind the relaxed atmosphere at site was driven by the willingness from everybody to accept owns limit and ask for support to the other members of the team, and at the same time, the willingness from everybody to help whomever was asking for help." - Major Equipment Vendor

2.3 Leading and Building the Collaborative Team

Selecting a collaborative approach requires conscious development of a collaborative team environment. Construction projects are historically adversarial and transactional. There are many ingrained behaviours (i.e. low willingness to trust, zero sum game, I know better, etc.) the team must overcome to successfully deliver on their commitment to collaboration. Successful delivery of this model requires strong leadership by all parties to overcome self-defeating behaviours that undermine the collaborative approach.

Some of the key activities in the organizational development of the collaborative team may include:

- Senior leadership sponsorship and endorsement of the collaborative approach, modelling collaborative behaviors, coaching frontline managers, and empowering leaders throughout the organization to behave collaboratively
- Selecting project leaders that have demonstrated capabilities in a collaborative leadership style and who embraces the value of collaboration
- Co-creating a commitment statement that has been crafted with the participation of all team members and galvanizing this commitment through a visible project charter
- Establishing ground rules that guide behavioral expectations
- Joint understanding of clear, documented business and project objectives, project risk and opportunity identification/evaluation
- Retaining facilitators and/or coaches to support with team building workshops, one-on-one coaching, and generally assisting the team in developing skills and capabilities in collaboration.
- Completing an owner project team capability self-assessment and objective alignment to understand the initial challenges to overcome in working collaboratively
- Co-locating the team to remove barriers to communication and create a space where the team can identify with the project organization, rather than their individual home corporate organizations
- Developing joint or integrated project work processes (as opposed to competing individual processes native to each project participant)
- Developing an exit strategy

> *"It's as close to a client/contractor "team" as I have ever worked with. I describe it as fun. We laughed. A lot. The personalities of the team allowed for this and it made all the difference in the world.* - Contractor

The development of a collaborative execution approach is improved when all key functional disciplines and stakeholders are engaged and given a voice early in the project development.

The owner has the utmost accountability to model collaborative behaviors and support the broad project organization in learning how to collaborate. The owner is tasked with establishing a learning mindset where the broad team at all levels feels supported, safe to raise issues, and able to jointly solve problems. This mindset must extend beyond the owner's organization and into the organizations of all supporting stakeholders.

No doubt, this approach will be uncomfortable and foreign for many leaders; this is a normal reaction and will pass as the team demonstrates effectiveness with the new approach.

3.0 BEST PRACTICE IMPLEMENTATION GUIDE AND ROADMAP

3.1 Introduction

The intent of this implementation roadmap is to provide additional tools and suggestions on how to overcome the main roadblocks to successfully implement Collaborative Contracting within your organization.

Please be mindful that there is no one-size fits all approach and the recommendations provided may not be applicable to your organization due to different factors such as level of maturity, project type, system/process maturity and/or company goals, supplier relationships, etc.

3.2 Implementation Stages and Management of Change

How can an organization start implementing Collaborative Contracting?

Implementing the collaborative contracting framework could be an intimidating task. Change means opportunity but also potential distress. For those reasons, change requires effective communication, planning, and resources to make it successful. For example, common barriers perceived in the industry (see section 3.3) are communication and planning; therefore, the implementation needs to address those barriers. This section suggests a three-step process to implement a Collaborative Contracting framework.

Three Step Process

Based on the experience of the team writing this framework and some of the literature reviewed, it's suggested to follow three steps. Bear in mind, these steps are suggested:

1. **Step 1 - Business case:** Use the materials and references available in this framework to build a compelling desktop business case to get the buy-in from leadership. For example, the maturity assessment in Section 4.0 COLLABORATION MATURITY ASSESSMENT AND PROJECT CRITERIA, or the sourcing contracting strategies in Section 6.0 SOURCING AND CONTRACTING STRATEGIES. These sections can provide elements to explain the reasons why collaborative contracting is proposed as a viable route to generate value. Some of the references in the bibliography could also provide examples of other organizations that successfully used collaborative contracting. The goal at this stage is to get senior leadership and mid-management familiar with the concepts, as well as get commitment to do a pilot test. In the reference section the McKinsey and PWC reports provide useful data to build your case.

2. **Step 2 - Pilot test:** The pilot test should be conducted in a controlled environment such as a well-established existing relationship. Enough time and resources should be planned to share the principles and develop a real engagement with all stakeholders. If there is the luxury to choose, it should have the adequate volume of work to fully leverage the benefits of Collaborative Contracting, so it can be completed in a reasonable time and on budget. Consider that when adopting a new way to work, there is always a learning curve which will erode some of the value added. Also, consider engaging neutral third parties involved to help facilitate and validate project elements. It is very important to have clear measures of success from the beginning and not to discard other benefits realized throughout the execution. Results of the pilot test are critical to gain trust, to learn the nuances of Collaborative Contacting and to secure

future projects.

3. **Step 3 – Transition to use Collaborative Contracting on a normal basis**: Once the proof of concept is completed, it is important to acknowledge that Collaborative Contracting is one tool to drive value, not all cases are suitable for it. To consolidate trust, it is recommended to find an opportunity that builds on the pilot test. For example, leverage the experience from the pilot test team, or use a similar commodity or service. Consider any opportunity to minimize risk and, maximize benefits and the learnings from previous projects or examples.

When implementing Collaborative Contracting, there are two key topics that need to be addressed. These are commonly underestimated when implementing a new process or approach in an organization. These two elements are Change Management and Stakeholders Buy-in.

The questions your organization wants to answer when implementing Collaborative Contracting are:

- What is changing and why?
- What are the impacts to people, processes and technology?
- What is the change management plan to ensure stakeholders adopt Collaborative Contracting?

Change Management Models

There are multiple models of Change Management available in books, white papers, websites and facilitated by consultants. It's very important for the individuals leading change in the field of Collaborative Contracting to do the necessary research to identify what level of help is required for their situation. Also, for those individuals employed by major corporations, it's advised to check for internal resources; in many cases large corporations have strategic groups with Change Management processes that could be leveraged. The reference section includes a list of websites and books that can be consulted about change management.

Stakeholders Adoption of Collaborative Contracting

Avoid common traps; for example, don't underestimate the veto power of stakeholders. Top down leadership support needs to be vocal and visible to all stakeholders. Consciously or unconsciously, stakeholders will resist change and at any level might jeopardize the success of the Collaborative Contracting implementation. The best practice, to prevent resistance, is effective communication because people manage anxiety better when they know what to expect. Another best practice to secure the adoption of Collaborative Contracting by the stakeholders, is to develop a vision of the end state that resonates with the solutions that they'd expect. It's highly recommended to spend time with the key stakeholders to understand their view of the problems and develop joint solutions. In complex organization don't assume that authority is enough, identify all stakeholders and evaluate their individual drivers to understand the level of effort required to get their support. For more on key recommendations for leadership when implementing collaborative contracting, see the IPDA's Action Guide for Leaders. (Integrated Project Delivery Alliance).

3.3 Barriers to Adoption

What is holding us (industry, organizations and individuals) back to implement Collaborative Contracting?

Other industries have completely transformed themselves to become more profitable, productive and more attractive to customers and investors. Clear examples of industries that have transformed how they operate, compete and interact with customers are: retail, manufacturing, transportation and

aviation/automobile, to mention a few.

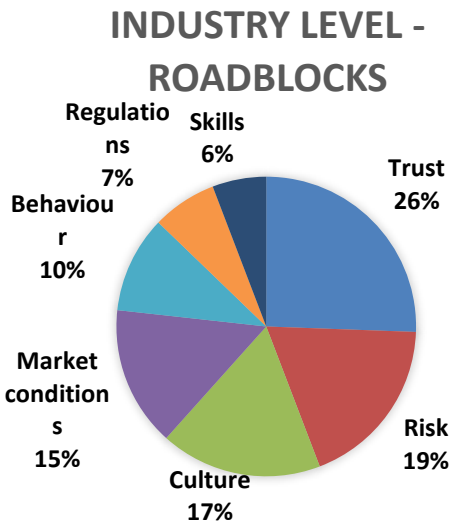
However, the heavy construction industry, despite great technical improvements, has not seen a transformation which positions it as a highly profitable, highly productive industry.

In an effort to determine what is holding the industry back from implementing Collaborative Contracting, the Collaborative Contracting sub-committee hosted a workshop at the COAA Best Practices Conference on May 8th, 2019 in Edmonton to define what Collaborative Contracting entails and what are the main roadblocks at the industry, organizational and Individual levels?

Over 50 people from the industry attended the workshop and participated in an exercise to discuss the main roadblocks for adopting Collaborative Contracting at the industry, organization and individual levels as well as the possible solutions.

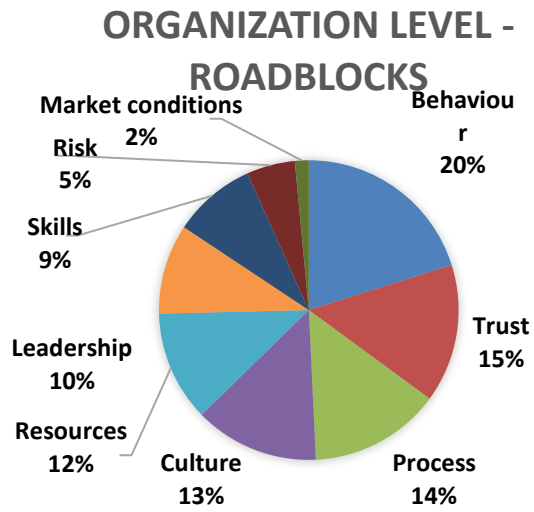
Below is a summary of the responses at each level:

Industry Level



According to the results of the survey, the main roadblocks to Collaborative Contracting are leadership support (26%), risk aversion/tolerance (19%), and market conditions (15%).
Some of the key concepts the attendees suggested to focus on to rewire the industry were behaviors (34%), develop the skills (23%) and change culture (12%).

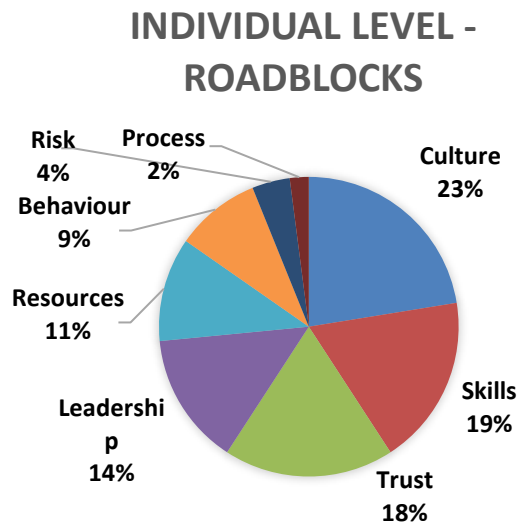
Organization Level

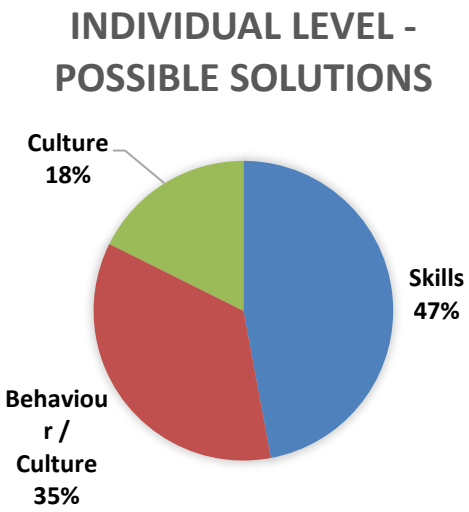


At the organization level the main roadblocks identified are Legacy behaviors (20%), Leadership support (15%) and Processes (14%).
As for possible solutions to overcome the roadblocks the attendees highlighted Switch in Behaviors (26%), Adapt processes (24%) and build trust (21%).

Individual level

This section represents the specific changes and actions everyone can perform at their organization to drive the implementation of Collaborative Contracting.





The main roadblocks identified by the attendees are Legacy culture (23%), Lack of Trust (18%) and Lack of leadership support (14%).
The solutions proposed highlight the need to build the skillset (47%), align interests with organization – Behavior (35%), and creating a culture of collaboration (18%).

Takeaways From the Workshop

It's highly recommended that each organization contemplating Collaborative Contracting ensures these requirements are addressed and actioned with project leadership before and during the implementation of Collaborative Contracting:

- The industry and organizations need to develop the competencies to implement Collaborative Contracting
- A trust environment needs to be created to drive culture and behaviors towards collaboration
- Legacy behaviors and mindset prevent us from embracing Collaborative Contracting
- Leadership support is a key element to ensure a successful implementation
- Legacy processes and contractual arrangements do not embrace a collaborative approach

3.4 Common roadblocks and solutions

Collaborative Contracting is a different contracting method that may not be well understood within your organization. As any early adoption, there will be a lot of questions and concerns from different stakeholders when trying to get buy-in and when implementing.

The intent of this section is to provide a list of common roadblocks you could experience at your own organization when trying to implement Collaborative Contracting.

Table 1 Common roadblocks and Potential Mitigations for Collaborative Contracting

Organizational Stakeholders	Possible Internal Concerns	Potential Mitigations
Project VPs / Directors	How will this deliver better results? Explain how this reduces project execution risks?	Provide elements on how this approach positively impacts schedule, cost, safety and quality.
	How much control are we giving up? Who pays for the RISK? How is this better from they way we execute projects?	Discuss how risk is shared. Align on project objectives. Focused on Project Overall (ROI) as opposed to lowest cost buys. Provide examples of how collaborative contracting best practices positively impact cost and schedule.
	Who in the industry has successfully implemented this?	Discuss success stories and how COAA has developed a subcommittee. Provide examples of how collaborative contracting best practices positively impact cost and schedule.
Managers / PMs / other stakeholders	Without bidding, how do we ensure lowest cost? Isn't this a single sourcing approach?	Open book approach. Benchmark cost, schedule, safety and quality. Communication & process plan.
	Who carries the risk?	Discuss the Risk sharing vs Risk transfer approach. Measure risks, mitigations and rewards.
	How do we maintain quality?	Discuss this is achieved by front end engagement by all (including subs). Look for optimization opportunities.
	What does a contract look like? How do we maintain our legal remedies for disputes?	Present examples of collaborative contracting structures. Discuss that contracts need to reflect all possible outcomes, both positive and negative.

	Dispute resolution? Who makes the call?	Discuss how this is intended to be minimized by ensuring transparent dialogue based on common goals and solutions.
	Who makes the project front line decisions?	Discuss purpose of Front-end engagement / planning. Facilitate collaboration with cross-functional team (client/contractor)
	Do we have the resources and knowledge to embark in this journey?	Discuss the need to provide adequate resources, empower people and seek for external consultation if needed.

To further the conversations about the positive impact on cost and schedule, there has been local research done to show the impacts of certain best practices, including partnering and many others that are encompassed in Collaborative Contracting. **See APPENDIX E - Local research on benefits of Collaborative Contracting**

4.0 COLLABORATION MATURITY ASSESSMENT AND PROJECT CRITERIA

A Collaborative Contracting maturity assessment is an internal assessment of what an owner company contemplating entering into a Collaborative (i.e. non-traditional) Contracting arrangement for a construction project should consider about itself, its project team and potential partners. As noted throughout this document, there are key pre-requisites for the successful implementation of Collaborative Contracting models within your organization. Collaborative Contracting represents an inherently different approach to a business relationship between an owner company and one or more contractor companies that come together to execute a project. Traditional contracting practices tend to be more commercial and transactional in nature, with owner companies often selecting contractors on the basis of their ability to conform to owner's needs and to manage within the framework of their own work, with day-to-day direction often coming from owner project and construction management teams. Traditional contracts are often structured to delineate owner-contractor boundaries, responsibilities and liabilities, and result in contracts structured for contractors to carry out plans that are fully defined by owners.

Collaborative Contracting focuses on alignment of interests among parties with the risks and rewards shared, pooled or more equitably distributed to increase the incentive to achieve common project goals and objectives. Collaborative Contracting practices require project planning and processes that are developed to:

- Create trust among parties
- Enhance information flow
- Create a means to measure and track progress towards common goals
- Identify and deflect potential project issues
- Improve means to add value through project decision making

When successfully applied, benefits, such as a reduction in non-value duplication, efficiencies of procedures and processes and better outcomes based on improved team dynamics, can also be realized. A collaborative working relationship may enable a move to an innovative environment by creating incentives for all partners to bring ideas forward in a better risk-reward structure.

The selection of a contracting strategy is almost exclusively in the realm of the owner or owner group (defined as either a group of equity co-ownership partners or a group that may include other non-equity partners such as local communities or project financers). There is a best practice developed by COAA called Contracting Strategy Best Practice. Within that publication there is a self-assessment scheme that may also be useful for owners looking to establish their strategy requirements contained in the best practice under appendices Organization Capability Self-Assessment (COAA Construction Owners Association of Alberta, 2019)

Across the construction industry, a best practice that is generally recognized is early evaluation and selection of a contracting strategy, typically at the opportunity assessment or concept selection stage. At an early stage, the owner will define overall project objectives and priorities, identify and set project constraints (such as a required delivery date, a local content requirement or a project budget limitation) and assess the overall complexity of the project in terms of the proposed technology, regulatory requirements, market conditions, community impacts and execution strategies. A review of project complexity will often be accompanied by a concept level risk assessment, wherein the most significant risks to project success are identified, quantified in terms of potential impact, and strategies to mitigate impacts are defined.

A dimension of Collaborative Contracting that can improve the results and enhance the potential for project success is **early contractor involvement**. In many cases, owners will have internal staff expertise that can adequately conduct opportunity assessments, concept and early design definition (i.e., pre-FEED Front End Engineering and Design), early execution planning and high-level risk assessments. In some cases, the owner will seek external support from industry thought leaders who are experts in their respective project phases or disciplines. The early participants may be selected based on market surveys for potential Collaborative Contractors in the execution phase. By inviting participation at this stage, by potential project partners, the project team can tap resources that may have other experience, lessons learned or market intelligence, and can build commitment and establish sound project goals.

Maturity Assessment Factors

The following are a proposed set of maturity assessment factors that owner companies should consider when evaluating their own readiness for Collaborative Contracting practices. Owners should consider engaging a third party to assist with the maturity assessment with a view to preventing affirmation or confirmation bias from skewing the results and leading to potentially harmful over-estimation of internally capabilities.

Ability or willingness to consider contractor selection criteria beyond commercial and lowest price.

- Internal financial practices or restrictions, such as corporate expectations to prioritize commercial considerations for all work. Government and institutional requirements for public tender or bank financing restriction on contract award criteria may be considerations.
- A consideration for valuing contractors who have the expertise to steer a project toward positive outcomes and efficient delivery at an early stage in the project life cycle with the ability to deliver a lower total cost.
- A culture of allowing contractor input or participation into project definition and planning, i.e. not treating contractors as “body shops” to carry out plans developed and defined by owners. This concept can take the form of early contractor involvement to co-create the scope and schedule, design constructability reviews, execution planning or long-lead procurement support, which may happen prior to funding or before finalizing project execution strategies.
- A rigorous process for screening a full list of general contractors for basic attributes such as performance history, financial strength, sound safety and quality programs and overall team experience, specifically within proposed leadership. Owners can assess proposals on whether a given contractor is committed to a better contracting model and is open to sharing costs and other information.

Willingness or ability to re-wire (re-write) traditional contracting frameworks.

- Openness to better align the objectives and expectations of all parties to find and create “win/win” scenarios and incentives. Consider creating a mutual enterprise model that allows for more participation in projects and their outcomes by all.
- The stakeholders commit to a “no disputes” philosophy and contract language that encourage the right behaviors within the relationship. This strategy could include eliminating the punitive clauses in some contracts that encourage both parties to withhold information and defend positions that result in higher costs and poor performance.
- Utilization of design processes that can add value to the overall project by aligning with project objectives. As an example, allow contractors to use their own procedures for reporting, interface management, change management and other administrative aspects, provided they meet or exceed project requirements, rather than conform to an owner’s procedure.
- A willingness on the part of the owner to jointly and collaboratively manage and measure

performance at a systemic level with contractors, including joint owner/contractor committees for project decision making.

Openness to articulate and pursue incentives for all parties; not just for owners.

- Owners should be open to designing and discussing win-win incentive schemes with potential contractors that can be linked to project objectives and deliverables. This tactic could include establishing “target price” or “target completion date,” wherein owner and contractor share the benefits of meeting or exceeding project objectives. The incentives would be consistent with either the risk assumed or value-added, creating incentives to actively manage key project variables.
- Target incentive schemes require openness and access to information so that targets are visible and known, conditions or risks to meeting targets are understood and actual progress towards meeting milestones is openly tracked.
- Throughout the project, owners should actively encourage contractors to be aware of those incentives and take advantage of them, especially where they are aligned with overall project objectives and profitability. Owners should encourage innovation and performance improvements by leveraging tools such as lean thinking and 6-Sigma evaluations.
- Establish a common vision, which involves agreement on target cost and schedule complemented by defining what constitutes success for the project and for the individual companies involved.

Willingness to evaluate and consider contract models that allocate risk among the parties to better support project objectives and to position risks where they can be best managed.

- Owners should acknowledge that contractors must be allowed to earn a reasonable return on the work, and both risk and reward should be shared.
- Collaborative Contracting structures should focus on the risk being shared first and thereafter allocated to the party that is best able to manage and mitigate its impacts. For example, construction contractors are typically in the best position to manage the overall effectiveness and productivity of their resources, including labour productivity, equipment numbers and type required, indirect support and management systems utilized on a project.
- Collaborative relationships between owners and contractors may benefit from the joint management of the pool of funds (risk money). The risk pool is the difference between a project base cost, established and agreed by all partners, and the target price. Joint management would include a collaborative decision-making process for changes that result from risk reduction measures as well as from project improvements.

5.0 COLLABORATIVE CONTRACTING FRAMEWORK

The authors chose the word “framework” because it describes *a collection of supporting structures*. The support structures in this framework are comprised of process groups, key processes and selected project lifecycle work streams relevant to contracts. A complete, pictorial view of the framework is set out here for reference, with a larger version set in **Appendix A – Collaborative Contracting Framework**. This section will provide a brief description of each of the process groups in the framework.

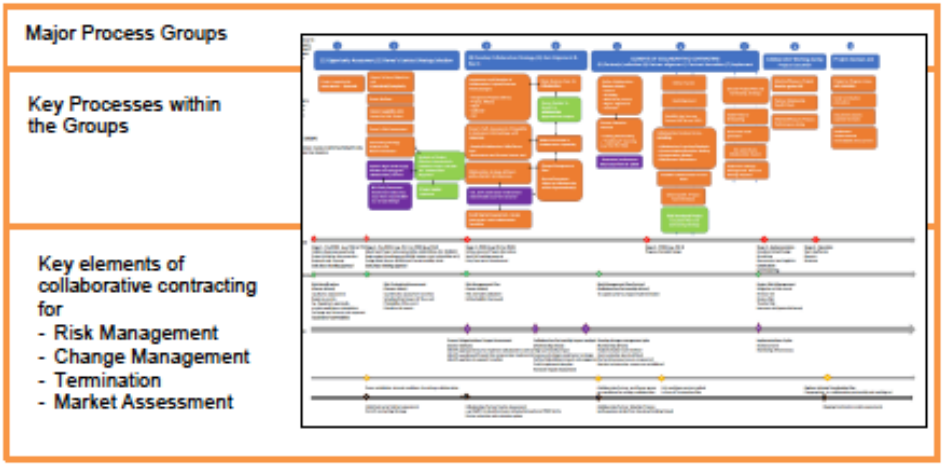


Chart Legend:

Blue (Shape) – Major process groups

Orange (Shape) – Key processes within the groups

Green (Shape) – Key decision points

Purple (Shape) – Suggested points for contractor/advisor involvement

Grey (Bars) – Key end to end contracting work streams

Black (Diamond) – Key stage gates in the project lifecycle

The framework has nine main process groups:

1. Owner’s Project Opportunity Assessment;
2. Owner’s Contract Strategy Selection
3. If Strategy = Collaboration, then: Develop Collaboration Strategy
4. Owner’s Collaboration Strategy Buy-in
5. Partner Selection/Market Action
6. Partner Alignment
7. Contract Formation and Implementation
8. Collaborative Working/Project Execution
9. Project Closeout

This narrative will briefly elaborate on each of the nine (9) process groups, with a view to providing the reader with a greater understanding of what is involved with each process.

5.1 Owner's Project Opportunity Assessment

Opportunity Assessment

In this process group, the owner engages in two (2) main types of activities:

(i) Conduct the typical research and/or assessment of the project concept and business opportunity, which is often documented. For example, project initiation memorandum or similar form. This is typically done in the Pre-Feed (FEL 0 or FEL 1)2 stage of the project. The purpose of the assessment is to obtain funding approval for the next phase of the project;

(ii)Select the best project from among the alternatives and begin to develop initial scope, cost, schedule, constructability, etc. whatever is commonly done by the owner at this stage. This information is often documented, for example, in the form of a design basis memorandum (DBM). This work is typically done in the Pre-Feed (FEL 1 or FEL 2) stage of the project. A DBM or similar document is often used to obtain funding approval for the next project phase.

Note: These are NOT activities specific to Collaborative Contracting, but rather just typical practices in industrial project management.

5.2 Owner's Contract Strategy Selection – Collaboration (or Not)?

Owner's Contract Strategy Selection

In this process group, the owner examines ALL of its contracting model options (those both non-collaborative and collaborative) and selects the one most appropriate to the project. The authors wish to emphasize to the reader that only some of the contracting options are "Collaborative Contracting". If the owner does not select "Collaborative Contracting", this process ends here.

Note: Again, these are NOT activities specific to Collaborative Contracting, but rather just good practices in contract strategy development. Collaborative Contracting is appropriate in some circumstance and best employed when it is "the 'right' contracting tool for the job". Please see the COAA – Best Practice for Contract Strategy Development (COAA Construction Owners Association of Alberta, 2019) as a reference for making this selection.

5.3 Develop Collaboration Strategy

Develop Collaboration Strategy

Having selected "Collaborative Contracting" as the contracting approach, the owner must develop a Collaborative Contracting strategy. Again, please see the COAA – Best Practice for Contract Strategy Development as a guide for contract strategy development. The strategy will logically require selecting/designing a Collaborative Contracting form. Owners can avail themselves of several "in market" Collaborative Contracting model forms, (or instead, create a be-spoke form):

- Project Alliance
- Integrated Project Delivery (IPD) [3]

[2] FEED – Front End Engineering and Design, FEL – Front End Loading. Common Project Stage Gates definitions
[3] For more information about IPD in Canada, visit the Integrated Project Delivery Alliance website. https://www.ipda.ca/ (Integrated Project Delivery Alliance, n.d.)

- New Engineering Contract (NEC) Version 4 (Alliance Model)
- Etc.

Option: The owner should consider involving external parties in collaboration strategy development. Specifically, a collaboration advisor and/or a contractor. An advisor familiar with the “in market” contract forms can contribute to strategy development, as well as guide the owner through subsequent processes. Involvement of a pre-selected contractor (a practice referred to as Early Contractor Involvement (ECI)), enables the partner to be incorporated into the strategy.

In the alternative, where there is no ECI, the owner should conduct a market scan to assure itself of the suitability of market conditions for collaboration and develop a list of potential partners.

The collaboration strategy should include a change/transition management plan for the areas of the organization that will need to adjust culture, thoughts and behaviours towards collaboration.

These activities are envisioned to occur in the Pre-Feed (FEL 1 or FEL 2) project stage.

5.4 Owner’s (Internal) Alignment/Buy-in (Investment)

Despite its benefits and potential for improving project outcomes, collaboration is still a relatively uncommon form of contracting and the super-majority of Collaborative Contracting projects can be expected to be “first time”, or “limited-experience” implementations.

Assessment: Therefore, even where the interest or intention to collaborate is strong, it is quite likely an owner will have several "areas for improvement” in collaboration capability/readiness. The authors emphasize that it is very important for an owner to conduct a self-assessment of its collaboration capability and find “areas for improvement”. As such, the framework, devotes the entire section to a Maturity Assessment. See Section 4.0 COLLABORATION MATURITY ASSESSMENT AND PROJECT CRITERIA.

Investment: Where the Maturity-Assessment(s) locates areas for improvement, the owner *must invest*. “Investment” is often needed in the following areas: collaborative leadership (I.e. finding the right person to support and drive the initiative), the creation of collaboration-enabling knowledge (e.g. orientation and training); and the building of new organizational structures, processes and tools, which altogether make-up a “collaboration system”.

Option: There is a tendency for optimistic individuals and organizations to over-estimate their ability to collaborate. This is particularly true for first-time and limited-experience implementations. The owner should consider engaging (a) collaboration advisor(s) to assist with the Maturity Assessment. Their engagement can be viewed as part of the collaboration investment. The guidance of a neutral and experienced third party collaboration expert assures a more honest self-assessment that increases the owner’s ability to make efficient, targeted investment that can optimize the long-run return from collaboration.

Having completed the assessment, and having identified the related collaboration investment needs, the owner can now fully define the scope of the selected collaborative project alternative and seek full funding approval, including for the collaboration investments.

These activities are envisioned to occur in the FEED (FEL 2 or FEL 3) stage of the project.

5.5 Partner Selection/Market Action

Partner(s) Selection

If the owner has not pre-selected a trusted partner for collaboration, then it must select one (or more, in the case of a multi-party collaboration) through a sourcing process. It is important for the reader to recognize that the process for sourcing a collaboration partner is fundamentally different from the process for sourcing outputs such as services, materials and equipment. The main difference is that the sourcing process for collaboration partners focuses on sourcing a relationship. I.e. the right partner. The authors emphasize that relationship sourcing is not easily achieved with traditional competitive bidding as a basis for making the selection decision, because the competitive context produces a mindset and behaviours that tend to disintermediate collaboration. This may require the owner to develop a new, fit-for-collaboration sourcing process.

The relationship sourcing effort can be viewed as the corollary to owner's self-assessment. The owner uses the sourcing process to estimate each potential partner's capability and readiness to collaborate and then selects the one who holds the most promise as a partner.

The authors point out that, a careful choice of sourcing process, people, and systems must be made. For example, use of traditional, competitive sourcing approaches, methods and processes may be disruptive to the collaboration mindset and behaviours.

Of course, a sourcing process is also used to select partner(s) who can execute the project, through the provision of goods and services.

The processes to select the relationship and select the goods and services can be bundled into one approach to the market. The choices among sourcing processes are addressed in Section 6.0 SOURCING AND CONTRACTING STRATEGIES of this framework document.

These sourcing processes are envisioned to occur in the FEED or FEL 3 stage of the project.

5.6 Partner Alignment

Partner Alignment

Having selected a collaboration partner, the owner (or both parties together) then initiate(s) a "partnering process" to establish a relationship in which the collaboration partners are aligned on relationship vision, mission, goals, objective, values. They must also be aligned on the project scope, roles, responsibilities, delivery and operational plans, as well as relationship and project outcomes.

During this stage, the partnership "solidifies" into: established and empowered collaborative leadership, joint structures for the governance of the relationship, (e.g. decision making, issue resolution) new joint operating processes (e.g. information sharing, compensation and incentives) and system elements (IT, Facilities) that support both the operation of the relationship as well as project execution. All these things together can be described as a "Collaboration System".

Option: For first time and limited-experience implementations, alignment can be optimized using a neutral, third-party collaboration expert to execute the Partnership Process. The authors emphasize neutrality in this stage. When an Owner implements collaboration without the use of a neutral third-party, it runs the risk of the collaboration appearing to the other partners as an "owner's-initiative" that

requires “buy-in” - and not a jointly designed system for collaboration.

In such cases, partners may perceive that the collaboration is not “for them” nor “of them” - and perhaps even as an imposition of sorts. In these situations, “real” collaboration could remain frustratingly elusive and the benefits of using collaboration may be diminished or unrealized.

Alignment activities logically occur after the sourcing process potentially in the FEED or FEL 3 stage of the project.

Contract Formation / Launch

5.7 Contract Formation and Launch

Formation: During the previous stage, the partners document the output of the partnering process sometimes called the “Collaboration Charter”. In this stage, the charter is associated with or incorporate into one of the available Collaborative Contract forms listed in Section 7.2 Contract Comparison Tool. Whether the charter is binding or not, depends on the parties.

For this effort, owners will need to rely on contracting experts familiar with the Collaborative Contracting forms and who are “collaboration-minded”. The wrong choice here can kill the collaboration.

Some of the Collaborative Contact forms are prescriptive in the sense that their design is comprehensive and offers a formal treatment of many of the topics, typically part of a Collaboration System. The Collaborative Contracting forms are explored in significant detail in Section 7.0 CONTRACTING STRUCTURE AND INCENTIVE MODELS.

The authors point out that, a careful choice of contracting inputs (process, people, systems) must be made. For example, relying on contract management personnel who exhibit collaborative behaviours. Use of inputs based upon traditional, adversarial contracting approaches, methods and processes may be disruptive to collaboration. e.g. using owner’s standard contract templates or using traditionally-minded personnel to negotiate or draft the contract.

Contract formation activities logically occur after the alignment process. The authors envisioned them to occur in the FEED or FEL 3 stage of the project.

Launch: This event consists of a small set of activities which include contract execution and then a “kick-off" meeting, and related communication that marks the beginning of the collaboration. Upon launch, the collaboration system starts operating in support of the relationship as well as project execution.

Collaborative Working / Project Execution

5.8 Collaborative Working and Project Execution

Although the framework appears to treat, as equals, all nine (9) process groups, this process group is, in reality, the longest in duration consisting of the execution of all the specific relationship and project processes and activities. For the sake of brevity, the framework does not identify them all, and instead just focuses on processes relating to outputs, i.e. performance. Specifically, the focus is on performance of the project, as well as performance of the relationship. Performance of the relationship is assured by monitoring and period “health checks” that in practice amount to small “interventions” that reinforce collaborative behaviours, deal with emergent

conflict and make incremental additions to Collaborative Contracting capabilities.

5.9 Project Closeout

Closeout, although identified in this framework as a stage, is more accurately described as an event. This event consists of a small set of activities: execution of project close-out procedures, lessons learned and the activation of any continuous improvement, and continuity process relating to collaboration. It should be noted by the reader that if the exit provisions of the Collaborative Contract are activated then project closeout process may be largely replaced with exit processes.

6.0 SOURCING AND CONTRACTING STRATEGIES

6.1 Overview

Collaborative Contracting is not a one size fits all approach. Once the organization has decided to pursue a collaborative strategy, it will be important to consider what point in the spectrum of collaborative strategy options is most appropriate for the project/program. The realm of strategy options spans many different structural forms, from preferred vendor(s) on one side to joint venture on the other.

6.2 Strategy – Factors along the Spectrum

At a high level the organization will choose the point in the collaborative strategy spectrum that aligns with, how strategic the project is to both the owner and to potential supply partners, and how capable/mature the potential partners are to deliver the projects requirements in a collaborative setting. Specifically, to select the right strategy, you will need to consider business objectives, competitive advantages, supply market conditions, trust level and other factors as outlined in the chart below.

Sample Materials and Tools

An example of a Request (RFx)4 for an IPD contract strategy is located in the Appendix C – Samples and Tools for Contractor Selection provided by City of Lloydminster. While many organizations will have their own RFx processes and related templates, excerpted from the attached City of Lloydminster document are evaluation criteria and related questions that may be useful when assessing prospective collaborative partners. In the same appendix you will find the sample evaluation criteria chart and same RFx questions from the Integrated Project Delivery methodology.

Factors	Preferred Vendor	Informal Alliance	Contract Based Alliance	Joint Venture
Strategy	Preference of prequalified vendors that company does not typically deviate from through life of strategy. Supplier of Choice Master Service Agreement	Long term multi-project agreement to utilize a single vendor for the organization's needs. Often c/w co-location of resources, long term capacity reservation/demand planning, lack of need to competitively bid through strategy, joint technology development initiatives, etc. First right of refusal with no obligation	Buying consortium, IPD, Alliances	JV, Merger, Acquisition, Partnership
Definition	Owner provides a limited number of vendors with preferential treatment, creating enhanced opportunity to win work; as compared to competing in an open market.	An arrangement between owner and key contributor(s) that is essentially informal based on good relationships and understandings that may be written but are non-contractual	A relationship that is underpinned by a contract between owner and key contributor(s) that sets out the objectives, respective roles and cost-sharing arrangements	Owner and key contributor(s) establish a legal entity, which they jointly own and control for the purposes of undertaking specific projects/activities
Kraljic Matrix Position (How does owner view category measured by Level of Supply Market Complexity vs. Business Impact)	Leverage	Leverage/Strategic	Strategic	Strategic
Strategic Account Position	Develop/Core	Develop/Core	Develop/Core	Core

(How does supplier view owner)				
Level of integration	Loosely Integrated	Somewhat integrated	Highly integrated / inseparable	One entity
Number of suppliers	Several	Few	Few	Few, Standalone project-based company
Style of interaction	Preferred but still some-what tactical relationship	Strategic, trusting	Strategic Synergy	Integrated, one voice
Duration of Term	Medium Term	Medium to Long term	Long Term	Long Term
Value proposition	Price, superior quality and excellent service	Focus on innovation, problem solving, creative solutions to drive better outcomes (cost, safety, quality, schedule) while retaining autonomy	Strategy, cost, quality, reliability, speed, innovation, etc.	Managing risk in uncertain markets, sharing the cost of large-scale capital investments, and injecting newfound entrepreneurial spirit into maturing businesses
Perspective on 'winning'	A win is essential for me and I know I should let you win too if the relationship is to survive	A win-win is important for both of us and critical if the relationship is to thrive continually	A win-win is essential for both of us and critical if the relationship is to thrive continually	We are one and we win together
Competitive Advantage (conferred by using collaborative contracting)	Low	Moderate to high	High	High
Difficulty of Exit	Moderate impact	Moderate impact	Higher impact; switching may have detrimental impact due to disintegration of systems	High
Trust level	Trust is important to managing the relationship	Trust is essential to generating value	Trust is essential to generating a continuous stream of new value; cultural alignment an asset	Trust and an aligned culture are critical to long term success
Risk Sharing	Low amount; negotiated risk transfer / allocation	Mutual agreement to transfer business/project risks to counterparty who can best manage risk (and associated risk contingency / allowances)	High degree; fully integrated risk management process and system; contingency / allowances are pooled	Undistinguishable risk sharing; risks and associated contingency / allowances managed at JV level
Point in development lifecycle parties are brought in	Detailed design or later (FEL3), post FID – Full Investment Decision	FEED – Front End Engineering and Design (FEL2); Pre-FID	Pre-FEED/FEED or BD phase (FEL1); Pre-FID	BD / Prospecting phase; likely pre-date formal project
Strategic Environment	-Application focus - Merely service provider -Low to medium sourcing complexity	-R&D is a distinguishing value -Medium to high sourcing complexity	-Discontinuous change in buyer's industry -Fast time to market is essential -Innovation and integration are essential -High sourcing complexity	Joint venture required to manage uncertain risk, project complexity or large-scale capital investment

Pros	-Low effort/resources to establish contract -Gain some of the benefits associated with a longer-term commitment	Low effort to establish contract. May serve as a steppingstone for future contractual based alliance.	If objectives and incentives are aligned, can see significant reductions to Total Installed Cost, technology advancement, schedule certain, etc.	Fully aligned interests, goals and objectives; aligned P&L, compensation structures; project risks are jointly managed;
Cons	Given lack of contractual commitment parties with greater power may seek one-way profit taking opportunities; competing interests	High effort to manage contract/relationship; could have competing interests or unbalance in relationship; collaborative relationship is delicate	High effort to establish and manage contract/relationship; cultural differences really magnify; trust is critical	High effort to establish and manage contract/relationship; cultural alignment risk; significant investment (time / cost) to stand up venture

Once a collaborative strategy option for sourcing has been selected, it would be important to compare that strategy against the alternatives. A simple way to do this is to rank the strategies against the critical business requirements as shown in the example template in **Appendix B - Sample Collaborative Sourcing Strategy Evaluation Template**. This template has been populated with some common business requirements. However, it would be important for a given project to establish and rank specific requirements that are critical to its success. It is also recommended, particularly in organizations where collaborative options have not been historically utilized, that the user compare the collaborative option(s) against the status quo sourcing approach that would have typically been followed. This will ensure that an objective case, if it exists, is established early in the development process.

6.3 Contracting strategy

Once the organization is aligned on a high-level collaborative strategy to pursue, it would be important to establish a more detailed contracting strategy. Which, for purposes of this guideline, will be defined as a “project deliverable”. This is typically in the form of a document and is usually produced by a multi-disciplinary team. It describes a set of planned contracting decisions and activities that are aligned with and support the project and:

- Organizational goals
- Objectives
- Key success factors

In addition, to this alignment, an optimal contracting strategy should clearly define, at least, the following considerations:

- Project delivery options: comparing and contrasting collaborative contracting spectrums (outlined above) against project objectives, risks and expected outcomes
- Project scopes of work and the key interfaces between them
- Roles and responsibilities of the participating stakeholders
- Risks and constraints (including schedule) associated with the project and strategies to mitigate them
- Compensation models to be utilized for various contracted scopes
- Method(s) of sourcing the contractors’ services (COAA Contractor Pre-qualification Best Practice)
- Owner organization’s scope of work and responsibilities, and capability assessment,

identified areas for improvement/focus (COAA Construction Owners Association of Alberta, 2019)

Key points

Again, it is recommended that organizations review and consider using the COAA's Contracting Strategy Best Practice (COAA Construction Owners Association of Alberta, 2019) for guidance on how to complete the contracting strategy formation step.

[4] Refers to multiple documents that start with Request For (Proposal, Quote, Information etc)

7.0 CONTRACTING STRUCTURE AND INCENTIVE MODELS

7.1 Background

Re-iterating some of the comments from the proceeding sections, from a commercial contracting point of view, perhaps the greatest differences between traditional contracting and Collaborative Contracting is that in Collaborative Contracting:

- The relationship plays a much more important role in the commercial arrangement;
- Profit is pursued jointly or collectively (i.e. all parties make or lose money together);
- Risk is managed jointly or collectively (i.e. all parties manage all risk together).

Whereas, in the traditional contracting method, profit is pursued individually, and risk is mitigated individually creating circumstances which often lead to misalignment among parties, each seeking to maximize only their own outcome.

Most Collaborative Contract models have enablers that are woven into the contractual structure, functionality and procedural aspects, which together, have the effect of aligning parties and facilitating the usage of collaborative behaviours to achieve common goals to deliver the project. Again, somewhat re-iterating some of the comments from the proceeding sections, they include:

- A joint management organisational structure that removes organisational barriers and helps to integrate project participants;
- Best-for-project decision-making processes;
- Collective (e.g. majority, unanimous, etc.) decision making;
- Risk and opportunity sharing;
- 'No fault – no blame' culture;
- A commitment to 'no disputes';
- Good faith, truthfulness/honesty;
- Transparency expressed as open book documentation and reporting.

These enablers result in significant value adding execution characteristics, such as:

- Improved Performance: The parties are commercially motivated to identify risks and opportunities and work together to mitigate or action the outcomes without fear of the associated blame and legal liability if they fail;
- Increased Transparency and Communication for Collaboration: The parties communicate in an honest and transparent manner with a view of collaborating to achieve the project objectives;
- Collective Decisions: The parties move away from the traditional approach of serving the self-interest of their own enterprise. Each party is empowered and thus embraces the decision-making processes which are aligned towards the shared, collective vision and objectives of the project;
- Joint Risk Management: By accessing and sharing each party's knowledge, skills and resources, the project's risks can be better managed through a collaborative effort;
- Reduced Disputes: The risk of disputes is reduced, and the threat of litigation between the parties is removed (except in limited circumstances);
- Focus on Solutions: The Collaborative Contracting team will be able to focus on solutions, rather than blame, when problems arise during the project lifecycle;
- Value Creation: Creative thinking and innovation is encouraged and rewarded.

7.2 Contract Comparison Tool

In order to assist in evaluating which contract model will work best, summary comparison tables are included in Appendix D – Contracts Structure Comparison Chart. Additionally, the same information has been compiled into a comprehensive Excel spreadsheet which provides a direct comparison of the key elements from each model, as listed below, and can be found here https://www.coaa.ab.ca/library/.

Within the Contracts Structure Comparison Chart there is information available for each form of contract in the following topic areas:

- Background
  - Model
  - Origin/History
  - Scope of Usage
- Form
  - Structure/Components
  - Parties
- Commercial Provisions
  - Target Cost
  - Compensation
  - Change/Contingency
- Risk Allocation Provisions
  - Insurance
  - Bond
  - Indemnity & Liability
  - Dispute Resolutions
  - Termination
- Management
  - Decision Making
  - Documents/Record Access
  - Warranty

The contract models and forms included with the Comparison Tool are:

- CCDC 30 – Canadian variant of IPD Style Contract (CCDC Canadian Construction Documents Committee, 2018)
- NEC4 – (New Engineering Contract, n.d.)
- AIA C191 and C195 FAMILY (3 party) (The American Institute of Architects, n.d.)
- Consensus Docs 300 (3 party) (Consensus Docs, n.d.)
- Sutter Health Integrated Agreement for Lean Project Delivery (3 party) (not available online)
- Hanson Bridgett LLP Standard Multi-party Agreement (Hanson Bridgett, n.d.)
- NACG PAA - Project Collaborative Contracting Agreement Australian Gov. (Australian Government Department of Infrastructure and Regional Development, 2015)
- AAA PAA - Alliancing Association of Australia Model (previously available on www.alliancingassociation.org no longer available online.)

7.3 Reality Check

Collaborative Contracting is not a panacea. There are several considerations that need to be understood when adopting the Collaborative Contracting approach:

- **Collaboration Capability**: As discussed in Section 4 around the maturity assessment, neither the owner's team, nor its prospective partner, may be sufficiently capable (e.g. appropriate leadership, skills, experience, behaviours) to execute a given Collaborative Contracting delivery method.
- **Behaviours Driven by Suboptimal Risk-Reward Allocation**: As with traditional contract models, an incorrectly designed, Risk or Reward Regime may not deliver the intended benefits of the risk and opportunity-sharing approach expected from a Collaborative Contract. From the owner's perspective, one such situation may occur where the contractors' pain share is capped, and the owner bears all design and construction risk once that cap has been reached. This arrangement could inadvertently create opportunities for the the following contractor behaviours that may be of concern to an owner:
    - **Cost Overruns**: Given the principle that all agreed contractor party costs will be reimbursed, there is potential for significant cost overruns to arise under the Risk or Reward Regime. As such, the remuneration framework may inadvertently incentivise the contractors to exceed the original scope and business case requirements. This means the owner may incur additional, and unnecessary, project costs (any material scope changes must be approved by the owner).
    - **Poor Project Execution**: When faced with lower exposure to the consequences of suboptimal project delivery, contractors may feel less responsible to employ the best project execution practices.
    - **Contractor Sub-optimal Team**: the limited nature of the risk/pain exposure for the contractor may result in the participating contractors choosing not to provide their best team for the duration of the project. Contractors may reallocate their top-performing resources to other projects which may have a traditional delivery methodology and more challenging risk profile. i.e. where the contractor has greater commercial risk exposure.
    - **Over-use of Subcontractors**: The contractor may use subcontractors, rather than their own staff, to deliver the project. The use of subcontractors will usually attract an additional layer of fees which will inflate the direct costs.
- **Limited legal recourse**: Depending on the owner, in particular its legal department and its affinity for the traditional methods of contracting, there may be barriers to the adoption of a contracting model that provides for a limited availability to legal recourse (i.e. litigation and similar processes).

7.4 Form, Structure and Parties

Generally, Collaborative Contracting forms follow a similar structure, sequence and format to traditional contracts. However, they may have more extensive procedural provisions in areas:

- Joint management structures and the decision-making process,
- Methodology for determining target price and associated risk allocation,
- Changes that affect the target price,
- KPI's related to target price,
- Issue resolution,
- Integration of scope,
- Signature blocks (see multiparty contracts, below).

Participating Parties

The forms of Collaborative Contract models compared in the Comparison Tool include a number of alternatives for inclusion of parties beyond the tradition “two-party” arrangement:

- Two-party contract between “employer” (owner) and contractor (e.g. NEC 4)
- Tri-party agreement: owner, contractor, and architect (e.g. Consensus 300)
- Multi - party between owner and contractor group (e.g. CCDC 30 & NAGC PAA)
- Single-purpose entity formed as a limited liability company (e.g. AIA)

7.5 Commercial Provisions

Compensation

The commercial arrangements in a Collaborative Contract must include a carefully designed sharing of risk and reward that drives alignment between the parties, incents the desired team behaviours and ultimately brings about the target project outcomes.

The standard commercial model for a cost reimbursable Collaborative Contracting arrangement provides for remuneration to the contractor participants comprised of the following elements:

- **Reimbursable Costs**: This includes the direct project costs and indirect project specific overhead costs actually incurred by the contractor parties (and the owner if applicable) in the performance of the work.
  Note: the allowable reimbursable costs are generally widely defined in many of the contracting models and may include certain types of costs which are abnormal in the usual realm of reimbursable contracting.

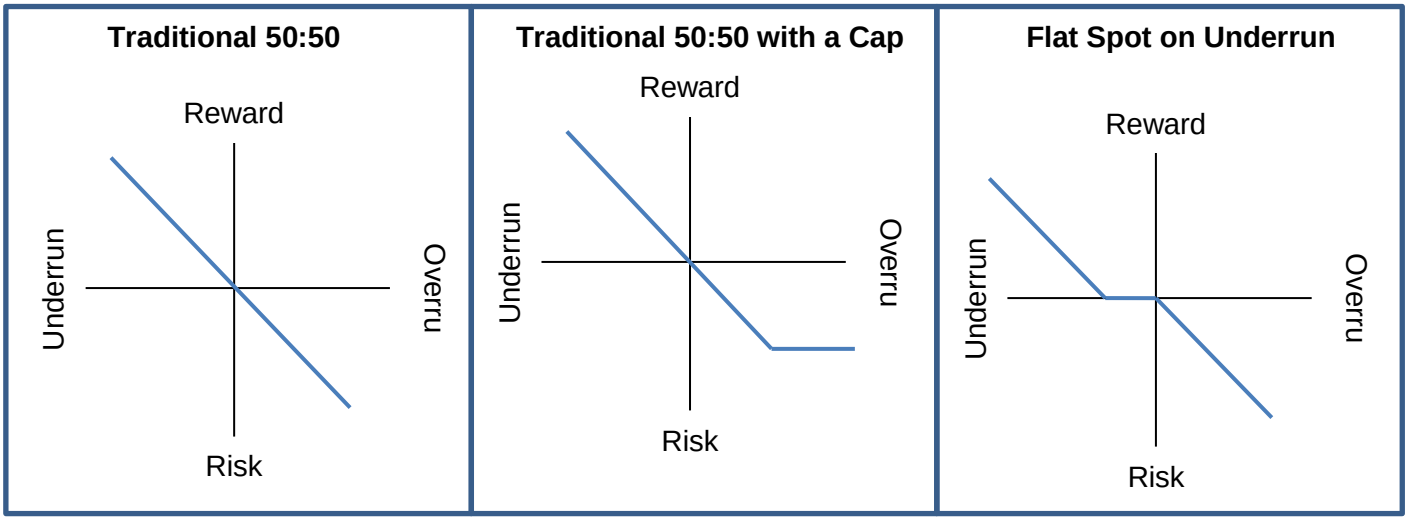
- **Fee**: This comprises both corporate overhead and profit, that is, the respective contractors agreed profit margin and a contribution towards recovery of non-project specific (or corporate) overhead costs.
  One issue that will be encountered, is differentiating and getting buy-in towards transparency of what is contained and allowable as a reimbursable cost versus captured in the corporate overhead element of the fee. Some items are clear in most models; however, in others, they are less so. For example, tendering resources, payroll costs, estimating costs, corporate audits in respect of QHSE, IT support, bonus provisions and other, similar, ambiguous project/corporate overheads are often treated as part of a contractors ‘business-as usual’ costs and are incorporated into their corporate overhead. This means reimbursing those costs may result in double recovery – once as a reimbursable cost and once as corporate overhead. Most of the contracts examined for the purposes of authoring this best practice had very extensive clauses in respect of what is and is not considered a reimbursable cost, and what the corporate overhead should include. Overhead percentages or values should be audited at the commencement of the project. The fee should be audited for reasonableness when the target price is being generated (or as a basis for selection in the sourcing process).
  Methods to provide additional confidence in the overhead and fee value being proposed include:

(i) requiring preferred contractors to bid their fee, or the percentages and methodology for establishing it, prior to selection or shortlisting of the preferred contractor(s); or/and

(ii) requiring the contractors to provide their expectation for the fee (normal level profit & overhead), evaluating this separately and reserving the right to vary this fee during the commercial alignment process following an independent financial audit;

- **Risk or Reward Amount**: This is a performance-based payment to the contractor parties in an arrangement. It increases or decreases to reflect the project's final cost compared to the base target price set at the outset and is designed to enable the contractor parties to share in both the upside and downside associated with delivering the project. The risk or reward amount is a pre-agreed share of the 'pain or gain' outcome of the project of the performance of the project, which is determined by comparing actual and target performance in both cost and non-cost areas. Generally, the non-cost elements include: schedule, safety, quality, personnel retention etc. Some forms of Collaborative Contract (see CCDC 30) anticipate partial payment of the risk/reward on a milestone basis throughout the performance of the project however any payment made is not deemed to be earned until all costs and adjustments have been made at the end of the warranty period.

  Below is an overview of three risk and reward models for comparison as described in the Australian Alliance Model (Australian Government Department of Infrastructure and Regional Development, 2015)



The traditional 50:50 model shows an equal split which provides a financial incentive but doesn't necessarily reward achieving any other non-financial targets. According to the Australian Alliance Model most collaborations historically have utilized the center example of a 50:50 split but with a capped downside for the contractors. A third option is to provide a minimum improvement target before savings are shared with contractors in the model with a flat spot on underruns. This is suggested to be useful when the target price is perceived to be higher than what the owner was expecting. This model could result in misalignment between owner and contractor objectives.

The Target Price

The Target Price is the actual costs of designing and constructing the project work product.
See **Figure 3** for a visual "build-up"of the breakdown of the target price. The Base Target Estimate is the 'ground-up" detailed baseline estimate generated by all the parties. It should reflect the estimated cost of the Work which typically consists of all direct and indirect reimbursable costs to complete the project as described in the Scope of Work / Owner Requirements document. Project contingency/risk and an allowance for escalation to be included in the base target cost, is established by parties based on a joint analysis of potential risks and innovations, and covers reimbursable costs that may arise as a result of that risk analysis. **See Section 8.0 RISK SHARING AND ALLOCATION MODELS.**

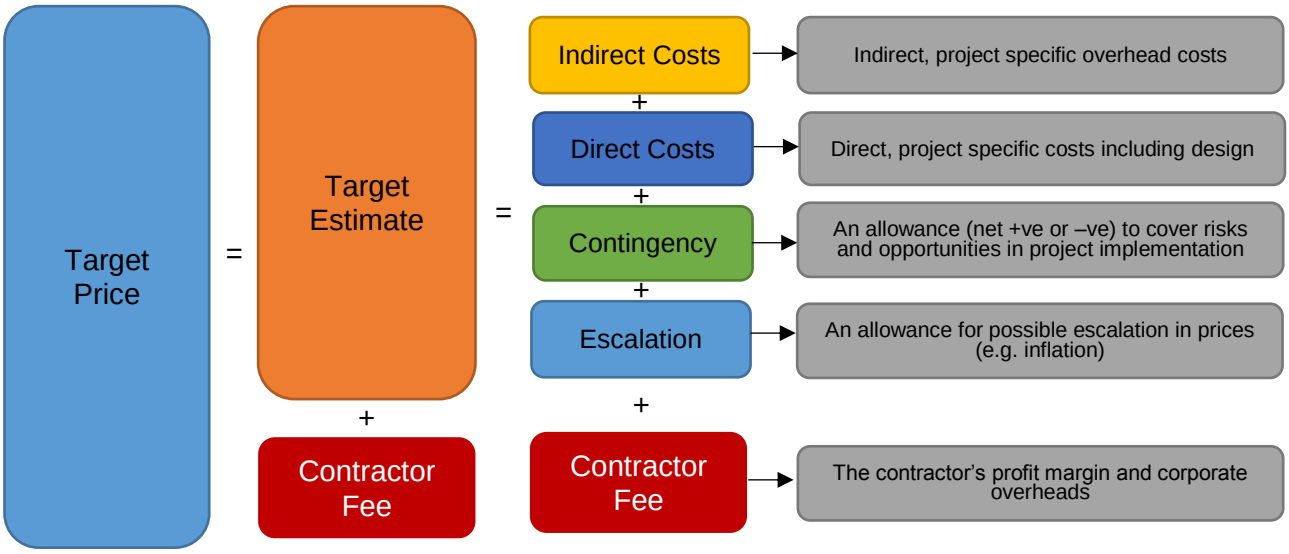


Figure 3 - Target Price Breakdown (Australian Government Department of Infrastructure and Regional Development, 2015)

The Base Target Price development process is intensive and time consuming, however, it can be a highly beneficial and collaborative process that:

- Gives the owner great insight into the capabilities of its potential delivery partners before final contractor partner selection and entering a formal agreement
- Produces a project cost estimate baseline that can be used to set reliably cost KPI's, which in turn can be used to demonstrate value for money and adherence to the project commercial objectives
- Produces a project cost estimate baseline that can be used as a starting point in future projects with similar scopes of work/owner requirements
- Provide additional alignment and "buy-in" of all the collaborating parties to the final agreed base target estimate

Steps which can be taken to demonstrate value for money or even to validate the base target price once developed include:

(i) Owner should independently prepare a rigorous cost estimate for the project before deciding to proceed with the Collaborative Contracting model
(ii) Reconciling the base target price with the owner's cost estimate
(iii) Benchmarking the base target price to recent similar projects

(iv) Engaging an independent estimator to confirm the base target price is a fair and reasonable estimate of the final forecast cost
(v) Engaging a financial auditor to audit the financial and cost accounts of each proposed contractor partner to establish a clear basis for the direct cost reimbursement and fixed fee
(vi) Conducting scope change benchmarking workshops with preferred contractors, to ensure alignment of understanding on what will and will not constitute a scope change justifying an adjustment to the base target price and other performance targets

Performance to Target

Once the base target price is agreed then cost underruns and overruns are clearly visible. These may occur for many reasons, including most commonly, the following:

- The process for the base target price development lacked rigor
- Human error in the estimation of the target price
- Poor project performance/significantly enhanced project performance
- Risks that did not materialise (e.g. escalation was less than expected) but were priced-in
- Unforeseen risks that did materialise and were not identified by the risk management process
- Innovation that occurs after setting the target price and which yield benefit unaccounted in the setting of the target price
- Significant market change – for example, changes in the market that are not project specific like movement in prices for key items
- Identified risk impact is larger than expected (e.g. above-normal cold weather days)

It is the role of the collaboration partners' joint management team to address and jointly manage the risks and issues that arise, and to mitigate the overall effect on the target price.

Contingency

The definition and compilation of the contingency/risk funds to be added into the buildup of the base target price requires a pre-agreed process and sufficient time, effort and rigour to align the parties. The unknowns and uncertainties are addressed by a project specific contingency/risk allowance. All collaboration parties should be involved in the risk management (i.e. identification, analysis and quantification of the potential impact of those risks or opportunities on the base target estimate and treatment, including through mitigation and/or transfer). Modelling of the cost impact of treated risks and opportunities can include 'bottom-up' techniques, such as Monte Carlo simulation and 'top-down' techniques including Benchmarking. In Collaborative Contracting, the project team shares one contingency/risk pool. As a result, each the collaborating parties will be encouraged to help each other to avoid or overcome any problems, from which eventually all collaborating parties will receive the (typically shared) benefit of any unspent contingency/risk allowance and the risk/reward mechanism

Change/Variations

The nature of most Collaborative Contract scope documents is fixed upon the basis of a performance specification or Owner's Value for Money statement (VfM's in the Australian Models) and is generally not as defined as a typical scope of work. This approach allows the generation of innovative ideas rather than prescriptive requirements in achieving the project outcome. Changes, including design development and execution methodology changes, are generally considered within the scope of the original target price as needing to be "best for project" decisions for which the Collaborative Contracting parties have agreed and weighed the associated risk and opportunities including any impact to the

target price.

"True changes" which will have an impact on the target price are generally less frequent in a Collaborative Contracting context. However, there remains a need for formal Change Management to address changes.

For example, it is common in the Collaborative Contracts for there to be a list of events, which we refer to as “Adjustment Events”, which are pre-agreed to trigger a change in the base target price (e.g. exercising of optional scope not included in the base target price, identify and accept risks, change to a statutory requirement or a suspension for convenience by the owner) which, if they occur, will trigger a process of adjustment to the target price, target dates and perhaps other associated Key Performance Indicators (KPI’s) as a result of the events. These events may be expressed by way of a set of guidelines or examples to guide the joint Project Management Team as to how the certain event types may occur in practice, and the contract will provide the necessary guidance as to the process and methodology to assess the impact and adjustments of the event to the relevant base target price and KPI’s.

7.6 Risk Allocation Provisions

Insurance

Certain Collaborative Contract forms are drafted with the assumption of an Owner Controlled Insurance Program (OCIP), where the owner takes out insurance in joint names of the participating parties and subcontractors – for works insurance, comprehensive general liability and professional liability insurance but all forms are adaptable to a more traditional insurance program.

In most Collaborative Contracting forms the parties generally provide traditional construction project insurance coverage -- including builder’s Risk, E&O, CGL, excess/umbrella, workers compensation and automobile coverage and there is waiver of subrogation against any other party on account of loss arising under the insurance maintained.

One of the joint management team roles is to act on behalf of the parties to report or make a demand upon the insurer for all insurable loss. Often excesses resultant from an insurable event are considered as a direct reimbursable cost and DO NOT change the target price.

Bonding

One could argue that in a Collaborative Contract, there should be no need for bonding (i.e. no blame). However, there may be a place for Parent Company Guarantees/Letters of Credit to be exchanged as a form of security, to provide surety, in the event of a participant’s wilful default.

Liability & Indemnity

The purposeful establishment of a ‘no fault – no blame’ culture underpins the Collaborative Contracting delivery method. The ‘no fault – no blame’ culture is intended to refocus the collaborating parties away from acting in a best-for-self manner and towards acting in a best-for-project manner which is further reinforced by the commercial model (i.e. all parties make or lose money together).

The contractual structure of the contract obligates the parties that, where there is an error, mistake or poor performance under the Collaborative Contracting contract, the parties will not attempt to assign

blame but will rather accept joint responsibility and its consequences and agree a remedy or solution which is best for the project. If the parties disagree, they must work together to resolve issues in a best-for-project manner/collaborative culture based on consensus decision making. “No blame” does not preclude a healthy difference in opinion’s and major disagreements. An effective Collaborative Contracting team requires a level of openness which facilitates constructive debate to allow the development of innovative solutions.

Flowing on from the “no fault-no blame” culture, Collaborative Contracting contracts generally also include a ‘no disputes’ mechanism where the parties agree not to litigate, except in limited circumstances, such as gross negligence, regulatory violations and criminality, etc. The intention of this approach is to avoid the adversarial or ‘claims-based’ culture of the traditional contract, and instead encourage the parties to jointly find solutions to problems on their own, rather than to deny responsibility and seek to target others via legal recourse. The joint management team and a steering team of upper executive members of the collaborative parties hold the responsibility for dispute resolution in most cases.

To give effect to this, some forms of Collaborative Contracting contracts have not included a formal dispute resolution procedure outside of the hierarchy of the management teams of the collaborating parties

For example: The Australian NACG PAA provides: (a)... subject to limited exceptions, such as, wilful default, the Participants agree that there will be no litigation or arbitration between them arising out of or in connection with this Agreement. The Participants must use their best endeavours to avoid issues arising as between each other and, to the extent an issue arises, must resolve the issue internally...(b)...a failure by a Participant to perform any obligation or to discharge any duty under...this Agreement...does not give rise to any enforceable right or obligation at law or in equity ....

Generally, the owner and non-owner participants/parties waive all claims against each other arising from or related to the contract and include a clause which is intended to waive their rights to consequential damages. Thus, the provision surrounding the issues on liability are generally sparse and often limited to providing an indemnity in the event of a wilful and deliberate act where the consequence could have been foreseen, or not providing the required contractual insurances, or in respect of express warranties (not all forms).

Dispute Resolutions

Most of the contract forms have a multi-step escalation of any dispute commencing with the joint project management team working through any upper management steering committee (as highlighted above) followed, in some cases, by the more traditional route of mediation, then arbitration or litigation. Those forms where the parties have committed to no arbitration/ litigation follow a binding expert determination route for final resolution.

Termination

Termination of the whole contract – by client for convenience

As with most traditional contracts the option for the owner to terminate for its convenience is contained within various forms of Collaborative Contracts. The particularity, as with most traditional contracts, is in gaining agreement about the amount payable, specifically in respect of the risk and reward elements.

For example: The Australian NACG PAA provides that in considering the risk /reward payment that may be payable "the Participants must, in Good Faith, estimate the Cost Performance Amount or KRA Performance Amount (as the case may be) which would have been payable during the course of this Agreement, if this Agreement had not been terminated".

Termination of whole contract for cause – CCDC30

Certain Collaborative Contract forms allow the owner to terminate the whole contract for cause in limited scenarios. One of the widest scope for terminations (more reflective of a traditional contracting approach) is in the CCDC 30 which allows the client to terminate the contract where the project team neglect to properly perform work or fail to comply with the requirements of the contract, and then also fail to correct the default within the prescribed timeline. The owner's obligation resultant from the termination is to pay the non-owner participants its reimbursable costs incurred to the date of termination plus the risk/reward amount accrued in respect of completed at the date of termination BUT less such loss and damage as was incurred by the owner due to the default.

Similarly, in certain Collaborative Contract forms, the non-owner participant (NOP) may terminate the contract for cause by the owner but usually only for continued non-payment, bankruptcy, elongated suspension/owner induced delays or owner's wilful default of its obligations. Payment due to the non-owner participants is governed by termination for owners convenience.

Termination of one of the participating contractor parties for wilful default

The termination of one of the participating parties is limited to several scenarios notably: bankruptcy, material default of insurance requirements, neglect to collaborate for the benefit of the project (see CCDC 30) or committing a wilful default (however in NACG PAA this does not include any error of judgment, mistake, act or omission, whether negligent or not, which is made in good faith). If the participating parties decide to terminate one of the parties to the contract (either directly by the owner, if those rights are included or by a decision by the joint management team), the remaining parties are entitled to take over possession of the defaulting participants scope in the project and finish it by any method the remaining collaborating parties considers expedient.

The owner is required to pay the terminated party its reimbursable costs incurred at the time, subject to any deduction for any loss or damage incurred by the remaining parties due to the default further the terminated party is entitled to their share of the risk/reward payment relative to the work completed, less any loss or damage incurred due to default.

7.7 Management

Decision Making

A key feature of Collaborative Contracting is the requirement for the parties to make decisions which are 'best-for-project' rather than 'best for individual. This shifts the project team away from traditional adversarial contracting.

The best-for-project principle is based on the understanding that the parties will direct their decisions towards the collective vision and objectives stated in the Collaborative Contract, rather than their own self-interests or the commercial interests of their own employer or funder. Ultimately, the commercial

arrangement should operate to ensure that, by acting in the best interests of the project, the parties will also be acting to support their own best interests and which in turn should encourage collaboration, problem solving and innovation.

A Collaborative Contract will contain a well-defined governance structure. The structure typically includes a joint management team and a steering committee or leadership team which will require participation and representatives from all the collaborative participants organizations. The formal governance contained in the contractual agreement enables the Collaborative Contracting parties to make all project decisions collectively and jointly manage all responsibilities.

A key feature of the joint management structure is that decisions are often made collaboratively (by majority, supermajority, or unanimously). Every member is entitled to cast a vote in the decision-making process.

Note that in certain contractual models, important or material decisions (often those that impact target price or completion date) may be reserved for unilateral determination or deciding vote by the owner given that the owner, as the client, will ultimately own and pay for the asset.

Documents/Record Access

Through the careful establishment of trust, the parties become enabled to commit to an 'open book' arrangement and have much broader mutual access and audit rights. These provisions ensure the costs, which are reimbursed to the contractors under the remuneration framework, have been actually and reasonably incurred.

It is interesting to note that in certain Collaborative Contracting models, a breach of the obligation for openness, transparency and auditability is a material default which can lead to termination for cause.

Warranty

The obligation to perform warranty work and remedy defective work is, as per the principle, in most contracts. However, the associated compensation attributable to such warranty work and defective work (whether pre or post completion) varies and in some models is considered a reimbursable cost.

7.8 Conclusion

While there are a number of similarities between the principles involved in both traditional and Collaborative Contracting models, there are significant differences which need to be fully evaluated and openly addressed within each party's organisation and between the parties to allow the full alignment and greatest opportunity for a successful collaborative result.

The form of contract can codify the actions expected from the parties to achieve collaboration but will remain reliant on the relationship and within that relationship, the adoption of collaborative behaviors to break down the barriers between the parties and truly act in a best for project spirit.

8.0 RISK SHARING AND ALLOCATION MODELS

8.1 Purpose

The purpose of this section is to introduce the differences in managing risks in Collaborative Contracts as opposed to a traditional contract, and to present some guidelines on how the parties interact to manage risk.

This document should be read in conjunction with the ISO 31000 (Risk Management - Guidelines) and ISO 44001 (Collaborative business relationship management systems — requirements and framework) together with industry recognized material concerning risk management.

8.2 Definition

Risk can be defined as *the effect of uncertainty on an organizations ability to meet its objectives*. Every project involves risk. Risks should be borne and managed by the party who is best able to manage/control it.

8.3 Risk in a Collaborative Contract

Traditionally parties to a contract allocate contingency sums of money to cater to risk. This can lead to layers of 'risk contingency funds' being factored in by the parties to a contract. In Collaborative Contracting, all project risk management outcomes are shared by the participants when/if they are realized. Any impact on cost or schedule is addressed collectively and not in silos. A visual of how risks are allocated can be seen in **Figure 4**.

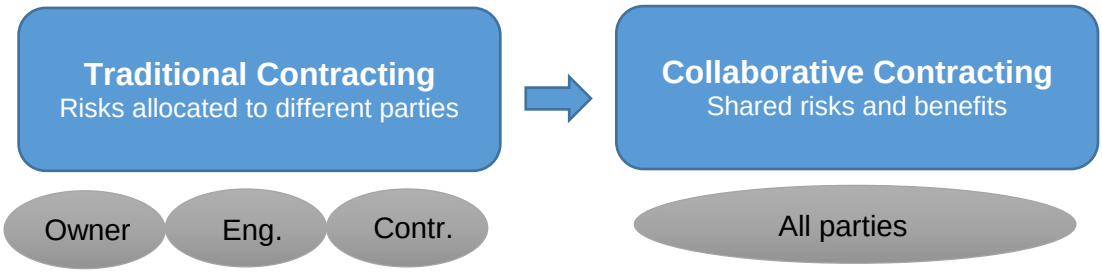


Figure 4 Comparison for risk sharing (Morwood, Scott, & Pitcher, 2008)

In a true Collaborative Contract, all sums associated with layers of risk should be excluded/given up and addressed only if encountered. Setting aside the funds associated with these 'layers of risk' would create a contingency pool to be drawn down from in the event a risk is realized. This would ensure a lower project base cost with an agreed mechanism between parties as to how this 'contingency' would be incorporated into the target price. For example, this would be done in the validation phase in the Integrated Project Delivery and Alliance Contracting models.

The risk pool is explained further in the Contract Structure and Incentive Model sections on CCDC 30. (CCDC Canadian Construction Documents Committee, 2018)

8.4 ISO Risk Management Process

The process is the systematic application of policies, procedures and practices to the activities of communicating and consulting, establishing the context and assessing, treating, monitoring, reviewing, recording and reporting risk - page 18 (ISO International Organization for Standardization, 2018). Also see **Figure 5** for an understanding of the key elements and terminology.

Risk identification: what could prevent us from achieving our objectives?

Risk analysis: understanding the sources & causes of the identified risks; studying probabilities and consequences given the existing controls, to identify the level of residual risk.

Risk evaluation: comparing risk analysis results with risk criteria to determine whether the residual risk is tolerable.

Risk treatment: changing the magnitude and likelihood of consequences, both positive and negative, to achieve a net increase in benefit.

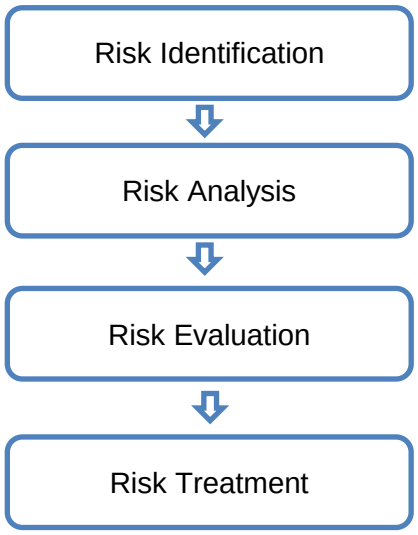


Figure 5 Risk Management Process from page 26 (ISO International Organization for Standardization, 2018)

8.5 Joint Approach to Risk

A joint approach to risk is a key difference between a traditional and a Collaborative Contract. According to McKinsey (McKinsey Global Institute, 2017) this could lead to a reduction in 'transactional project costs'. The parties would need to formulate how to jointly manage risk and what risks individual partners would retain. Preventing or reducing the impacts of the identified risks is best done through early identification of risks which aligns with the collaborative concept of early partner engagement. It also relies on open and honest evaluation of risk impacts as well as a decision-making process that is transparent and fully supported by all partners. **APPENDIX F - Potential Project Risks at the outset of Collaboration** details some potential project risks that should be considered and acknowledged by the parties at the outset of collaboration.

Determining risk management accountability at the outset is key to managing a collaborative contract:

1. **Who is responsible or accountable (parties or specific personnel)?**

   Parties should decide who will participate in the management of risk, how often the parties will meet and who is assigned to manage the risks. This may involve rigorous up-front alignment sessions and be addressed at decided upon intervals throughout the project.

2. **How are risks addressed and managed?**

In a Collaborative Contract, risks would be managed jointly versus independently or in silos. In some instances, contractors are encouraged to exclude risk money up front (estimating and through the rates incorporated into the contract) and only seek additional compensation upon the realization of a risk event. This is one of the main benefits to Collaborative Contracting whereby the up-front base costs are lower coupled with being able to positively impact the direction of a project and avoid costly/lengthy disputes, claims and protracted claims resolution.

For example, if the risk of contaminated soil is realized the parties address how to deal with this risk collaboratively in terms of execution and cost and schedule mitigation.

The teams may jointly decide to engage a facilitator with specific experience in this field.

3. **How often does the team meet to understand, status and control risks?**

This will depend on the familiarity/experience the parties have in working together as well as the scope, size and complexity of the project. The intervals of interaction would be decided after up front lengthy alignment sessions.

4. **How can the organization(s) prevent, reduce undesired effects?**

By jointly identifying, categorizing, assessing each risk and finding ways to mitigate/treat each risk category. Teams should meet regularly and make decisions to control and act appropriately in the management of risks.

6. **Value Engineering to achieve innovations and savings carried out at design and procurement phase will alter the figures as set out in the risk pool.**

Early engagement of parties to a contract can positively impact any project. An example of this would be early constructability reviews/value engineering sessions between owners, contractors and designers.

7. **Decisions regarding the agreed sum carried in a shared contingency pot (sum held by contracting parties).**

This could contain a provision where the balance of the risk pot is shared equally among the partners or allocation by a pre-determined percentage at the conclusion of the project.

8. **What is the process when a risk is encountered to manage this occurrence? When an event happens where cost is incurred how is that managed/impacts measured?**

Setting up a risk contingency pot allocated through the management of change is one way of providing comfort to the parties that in the event of a realized risk that one party will not have to bear the burden of a given risk which is typically that way in allocating risks in traditional contracting.

This may form part of the regular risk meetings and should be managed traditionally through the change provisions in the agreement. Either way both parties are involved in early identification and tasked with jointly solving the problems or assessing and addressing each risk encountered. The scale of the management of risk would be based on the size and complexity of the project.

As indicated in the ISO 31000 standard Section 5.3 (ISO International Organization for Standardization, 2018): *governance between collaborative parties to a contract guides the course of the organization(s), its relationships and the rules, processes and practices to achieve its purpose.*

8.6 Management Team Approach to Risk

The joint management team should establish and record the process to be used for risk management within the relationship, recognizing the links into each organization's existing risk management processes. This includes:

1. The appointment of a competent person to manage risk which shall be jointly agreed between the contracting parties or joint accountability between assigned risk managers
2. Early engagement of stakeholders to address risks/constructability/lessons learned/design input as well as ideas/brainstorming
3. Who owns the risk? (Who is the right party to manage each risk)?
4. Jointly agreeing, defining and documenting the roles and responsibilities
5. The establishment of a joint risk register incorporating issues previously identified on an individual organizational basis and those resulting from any interdependency. (ISO 44001 Section 8.6.4) (ISO International Organization for Standardization, 2017)
6. The process/procedure utilizing the sums included in the contingency pool including what risks are included/excluded
7. Governance/rules surrounding the management of risk
8. If a risk/reward mechanism is in place what are the mechanics of this?

8.7 Risk of Collaboration

What happens if a collaborative business relationship does not work out? The reasons for collaborating in the first place may be impacted by the maturity of the organizations, leadership changes, other business interests or the changing nature of business, misaligned goals of the organizations and many other reasons. There are different risks associated with the different stages of each project, i.e. the validation stage – whereby parties to a project may invest time up front and a project is not sanctioned due to escalating costs, viability or risk exposure. The risks at this stage are inherently different to planning and executing a live project.

How parties deal with disputes/dispute resolution and the requirement for disengaging (reconfigure or dissolve the relationship) should also be considered.

The potential of an exit strategy or a formal dissolving of the project should be considered up front. This should be incorporated into the agreement at the outset of the relationship and be well understood by the parties.

Has dispute resolution been considered?

Dispute resolution is a pre-requisite for any agreement. Traditional contracts tend to rely on litigation or Arbitration which can lead to lengthy, costly and uncertainty of the outcome for both parties. Other forms of alternative dispute resolution such as conciliation, mediation or adjudication for prompt payment may be more suitable in the event the parties or unable to agree on a certain issue. This situation should be a last resort as Collaborative Contracting should require the parties to focus on project outcomes, compromise or reach agreements to the benefit of the project/relationship. This topic is also addressed in the Sourcing and Contracting section.

Is rework or any potential warranty work included in the risk pool?

This is an issue that should be agreed at the outset of the relationship. There should be enough quality controls on any given project to limit this issue however, this can be heavily debated in time and material or reimbursable contracts as to who burdens the cost of deficiencies post mechanical/substantial completion and warranty work.

9.0 Conclusions

As outlined throughout this framework, the goal of this initiative is to shift mindsets on project leadership and project delivery principles as to the methodology and benefits of Collaborative Contracting given the right circumstances. Heavy industrial construction project delivery has room for improvement and this document serves as a tool that can facilitate innovation and collaborative resolution of complexities leading to improved project outcomes.

Collaboration works. As noted in the image below excerpted from research conducted by Dr. George Jergeas and Robert Porter Lynch (Jergeas & Lynch, 2015), transitioning from adversarial through transactional to collaborative project delivery improves the likelihood of positive project outcomes. The collaboration spectrum provided earlier in the framework highlights the key elements of navigating the phases of collaboration, with a key prerequisite of trust.

MODEL	ADVERSARIAL	TRANSACTIONAL	COLLABORATIVE
% chance of On-Time, On-Budget, On-Target Project Delivery	Under 10%	20-30%	80-100%

Figure 6 - Performance of Collaborative Approach copied from page 11 (Jergeas & Lynch, 2015)

As you seek to understand the extent of your organization's collaboration maturity, it is possible to shift incrementally towards the collaborative end of the spectrum. The goal is not to boil the ocean but evolve our way of thinking and eliminate the zero-sum game. All parties can win without one needing to lose. Working together towards mutual success is a more rewarding overall experience for all involved.

In closing, this framework will assist you in the journey to increased collaboration in contracting for positive outcomes. Therefore, this best practice is designed to be an in-use document that can be copied and shared. You are encouraged to pilot this in your organization, measure the results and continue to drive the requisite change and innovation to project cultures and execution philosophies.

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Appendix A – Collaborative Contracting Framework

ASSUMPTIONS OF THE CREATOR OF THIS FRAMEWORK

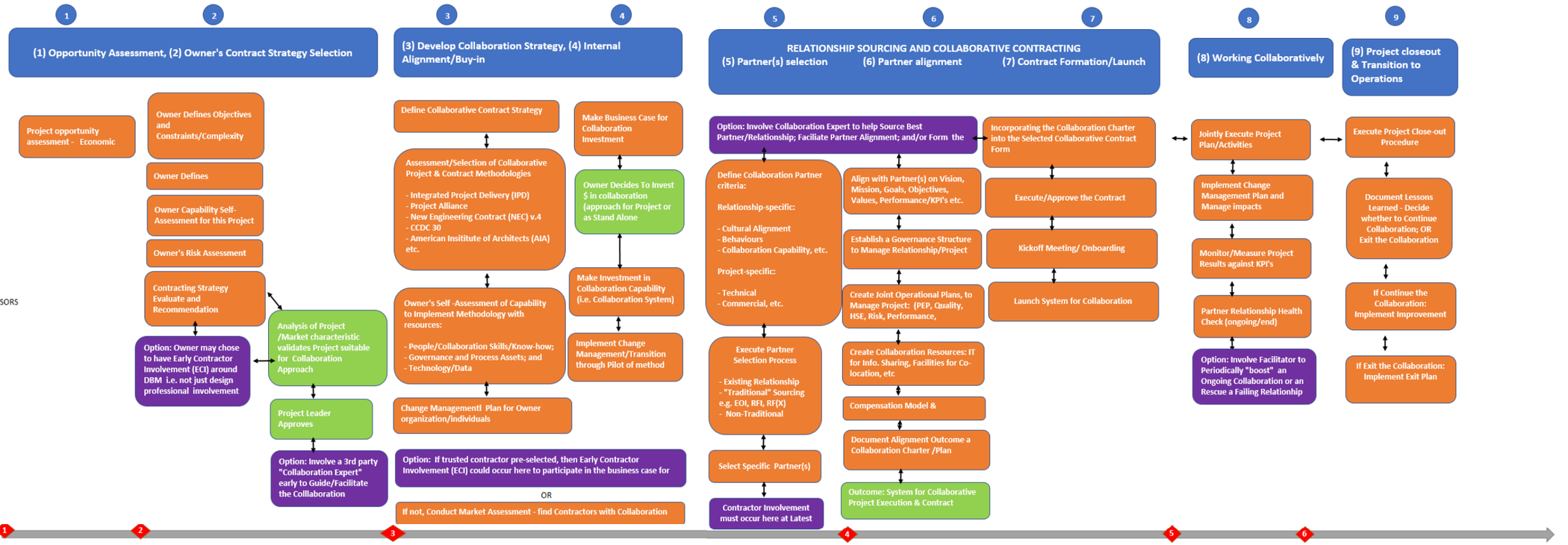
THIS FRAMEWORK IS SPECIFIC TO CONSTRUCTION PROJECTS
COLLABORATION IS NEW TO THE OWNER
NO SPECIFIC CONTRACT METHOD IS RECOMMENDED
FRAMEWORK IS DESIGN PROCESS AGNOSTIC
FRAMEWORK IS DELIVERY METHOD AGNOSTIC
OWNER USE OWN PROJECT LIFE-CYCLE APPROACH (e.g. FEED, FEL, etc.)
NO SPECIFIC HSE, QUALITY, RISK, ETC. PRACTICE IS RECOMMENDED

KEY COMPONENTS OF FRAMEWORK

STARTS WITH CONTRACT STRATEGY CHOICE
EARLY STEPS ARE OWNER INTERNAL ACTIVITIES
FOLLOWED BY EARLY CONTRACTOR INVOLVEMENT (ECI)
THEN EXTERNAL COLLABORATION WITH E&C, EPC, etc.
COLLABORATIVE WORKING FOR PROJECT EXECUTION
ENDING with PROJECT CLOSE AND LESSONS LEARNED

LEGEND

BLUE "BUBBLES" ARE MAJOR PROCESS GROUPs
ORANGE "BUBBLES" ARE KEY PROCESSES WITHIN THE GROUPS
GREEN "BUBBLES" ARE KEY DECISION POINTS
PURPLE "BUBBLES" WHEN OWNER INVOLVES CONTRACTORS/ADVISORS
GREY BARS ARE KEY END TO END CONTRACTING WORKSTREAMS
◇ DIAMONDS REFLECT A STAGE GATE IN PHASEOLOGY



Appendix B - Sample Collaborative Sourcing Strategy Evaluation Template

Collaborative Strategy Options evaluated against key business requirements					
	A: Company's current practice	B: Informal Alliance	C: Contract Based Alliance (IPD)	D: Joint Venture_____	E:Other
Increase Cost Competitiveness	0				
Increase Cost Predictability	0				
Maintain Quality	0				
Maintain Safety	0				
Increase schedule Certainty	0				
Advance Technology	0				
Adaptability	0				
Effort to implement strategy					
Insert addl reqs					
Insert addl reqs					
A: Total Score	**0**				

Score legend

+1 = Strategy option is better than status quo for this requirement

0 = Strategy option is equal to Status Quo for this requirement

-1 = Strategy option is worse than Status Quo for this requirement

Appendix C – Samples and Tools for Contractor Selection

Sample Evaluation Criteria

STAGE III EVALUATION CRITERIA		Weight
1.0	*Experience & Capabilities of Proposed IPD Team*	
	.1 Corporate Profiles	1.0
	.2 Proposed Personnel	1.5
	.3 Experience in Collaborative Project Delivery	4.0
	.4 Experience in Wastewater Treatment Upgrade Projects	3.5
	.5 Past or Current Difficulties	1.0
2.0	*Proposed Project Delivery and Collaboration*	
	.1 Management	2.5
	.2 Co-Location Plan	1.5
	.3 Collaboration Technology	1.5
	.4 Planning & Execution	2.5
	.5 BIM Execution	2.0
	.6 Risk Management	1.5
	.7 Union & Labour Force Understanding	1.0
3.0	*Value Added and Innovative Practices*	2.5
4.0	*Costs and Compensation (fees, profit expectation, etc.)*	2.0

Sample RFX Questions

IPD GENERAL CONTRACTOR TEAM

Provide a corporate overview, inclusive of such elements as history, position in the marketplace and corporate philosophy for each proposed IPD General Contractor Team member organization. Profile is also to include evidence of strong financial health.

Provide a description of the experience and capabilities of key personnel from each organization that is put forth to play a role on this project. Describe individual roles and responsibilities. Provide resumes for all key personnel proposed for the team. The Proposer warrants that the key personnel will be actively involved in the project at least to the extent indicated in its RFP response.

Provide example(s) of the IPD Team's organization and key individual experience with the following: a) Design and construction experience for [ENTER WORK TYPE] that are similar in nature to this project for the last ten (10) years. Provide project references and include a financial summary that describes the original tendered project value and the final project cost and an explanation of any differences between tendered and final costs. Provide a summary of the original estimated construction schedule and the actual time to complete the project and an explanation of any differences between the original estimated time and the actual time to complete.

EXPERIENCE AND CAPABILITIES OF IPD GENERAL CONTRACTOR

Provide a summary of the overall delivery method used to deliver the project (i.e. conventional design-bid-build, design-build, etc.) and provide a summary of the team that was used to deliver the project, highlight organizations and key individuals that are being proposed for this project and describe what their roles and responsibilities were. Provide a summary of any unique challenges and innovative solutions that were used to solve them. Include project photos and graphics in an appendix if desired to support the descriptions provided.

Implementing lean design and construction techniques with specifics of how the organization and key individuals have used these techniques on other projects to improve project delivery efficiency. How the proposed team has used the strategy of Target Value Design to maximize value to the Owner while remaining within budget.

How the proposed team has worked in a co-located work environment with comments on how the organization / key individuals managed this process.

- How the proposed team has collaborated on projects that have gone beyond the level of collaboration found on normal construction management or design-build projects. Describe strategies used, how the collaboration process was managed, and what technology platforms were used.

- Describe actual experience on IPD projects by organizations or key individuals identified in the RFP response and how this experience would be used by these organizations and key individuals to benefit this project.

- Describe all instances of project disputes that, in the last five years, reached the level of formal dispute resolution or litigation. For each dispute, describe the parties involved and the nature and amount of the dispute.

PROPOSED PROJECT DELIVERY AND COLLABORATION APPROACH

Management: Describe the strategies, processes and systems that will be used to foster collaboration, innovation and efficiency. Include strategies and techniques for financial modeling, reporting and cost control. Accurate cost accounting and cost forecasting on a continuous basis is critical to an IPD project. **Co-Location Plan**: Describe what the IPD General Contractors plan for co-location would look like and how co-location would be managed.

Collaboration Technology: Describe what technology platforms and strategies would be used to truly allow for collaboration both at the co-location facility and for situations where individuals are not physically in the same location but working remotely together.

Risk Management: Describe the proposed approach to identifying, tracking, reporting, updating and managing project risks.

Use of Local Resources: The expectation is that interested local resources be adequately educated on IPD and that opportunities be presented for them to participate in this project when and where appropriate. These resources/firms may be part of the IPD Agreement or they may provide labour and materials under conventional agreements as required. Describe how the IPD General Contractor would go about ensuring that local resources are informed, evaluated, and utilized to the extent possible.

VALUE ADDED AND INNOVATIVE PRACTICES

Proposers are encouraged to build on the contents of this RFP and describe any value added and innovative practices that they can offer the project that have not been covered by the requirements of this RFP. This includes, but is not limited to, recommendations for other key sub trades and/or consultants that should be invited in the Added Parties process.

Schedule is paramount to this project. Identify and elaborate on any value add or innovative practices that could improve on the current schedule.

COST AND COMPENSATION

Provide a breakdown of costs for each IPD General Contractor Team member (key individuals and support personnel) based on the following elements in Canadian dollars exclusive of G.S.T. Ensure the information in the table are in exact accordance with all the requirements are completely defensible. All IPD projects are complete "open book" and you will be required to show proof.

The IPD General Contractor shall also indicate the percentage of profit (margin) you intend to make/charge on this project. Based on the amount of work the IPD General Contractor could possibly self-perform, this percentage could be based on overall construction value, or on effort charged to the project.

a. The profit percentage will be rolled into the Risk Pool and will be at risk.
b. The profit expectations must be in line with similar projects executed by the IPD General Contractor in the past / based on industry norm, and you will be required to show proof.

Subconsultant and subcontractor (Added Parties) breakdown of costs by Team member and percentage of profit is to be provided at time of interview, if selected.

APPENDIX D – Contracts Structure Comparison Chart

As noted in section 7.2 of this guideline, the provisions of nine contact models are compared in the following tables:

1. CCDC 30 – Canadian variant of IPD Style Contract
2. NEC4 – New Engineering Contract
3. AIA C191 family
4. AIA C195 family2
5. Consensus Docs 300
6. Sutter Health Integrated Agreement for Lean Project Delivery
7. Hanson Bridgett LLP Standard Multi-party Agreement
8. NACG PAA - Project Alliance Agreement – Australian Government
9. AAA PAA - Alliance Association of Australasia Model

To facilitate comparisons between models, the tables are also compiled in an Excel spreadsheet – which is available for download from the COAA Library at https://www.coaa.ab.ca/library/.

Model		1. CCDC 30 - Variant of IPD Style of Contract
Background	**Origin/History**	Made in Canada, published in 2017
	Scope of Usage	Canada Only
Form	**Structure/Components**	Data to be provided when the deliverable is at 100% completiond
	Parties	Owner is the person or entity identified as such in the Agreement. Design/Construction Team consists of the Consultant, Contractor and Other IPD Parties
Commercial Provisions	**Target Cost**	The Base Target Cost is developed during the Validation Phase and is the target cost of the Design Services and the Work which consists of all Reimbursable Costs to complete the Project as described in the Base Program, an appropriate contingency and allowances. Base Program is the Owner's requirements that define the quality, quantity, functionality, aesthetics, sustainability, and other requirements for the Project • Estimated Final Target Cost is the final target cost developed by the PMT during the Design/Procurement Phase and consists of all Reimbursable Costs to complete the Project, as described in the Base Program, and appropriate contingency and appropriate allowances, but does not include Added Value Incentive Items. • Final Actual Cost is the sum of all Reimbursable Costs incurred through to the end of the Warranty Phase The Base Program, Base Target Cost, Milestone Schedule, Risk Pool and other Project are all set out in the Validation Report Reimbursable Costs are the costs stipulated in Article A-5 of the Agreement • Validation Phase starts on the Effective Date ending on Owner's acceptance of Validation Report Target Value Design is a process that includes Project values, cost, schedule, and constructability as the basic components of the design criteria and uses cost targets to drive innovation in design to provide best value to the Owner within the Base Target Cost, Final Target Cost and Milestone Schedule and such other Project Objectives as agreed by the parties.
	Compensation	The Risk Pool is part of the CCDC 30 compensation and incentives regime. The Risk Pool is a sum of Profits of the Design/Construction Members which is set up by the Project Management Team ("PMT") during the Validation Phase and is distributed amongst the Design and Construction Team in accordance with a Risk Pool Distribution established via Schedule A. This may be amended upon addition of new parties. The Risk Pool is established in the Validation Report. The Design / Construction Team are paid by the Owner for their : • Reimbursable Costs; • The relevant portion of the Risk Pool with Value Added Taxes as applicable to such payments; • Unpaid balance of the holdback amount, when due, upon Substantial Performance of the Work; and • At the end of the Warranty Phase – unpaid balance of the Risk Pool and Reimbursable Costs with Value Added Taxes. Reimbursable Costs are the actual costs supported by documentation the Design/Construction Team incurs in performing the Design Services and Work plus overhead. All cash discounts, trade discounts, rebates and refunds, and all returns from sale of surplus of materials and equipment applicable to the Work are to be credited to the Reimbursable Cost of the Project, and the Design/Construction Team must make provisions so it can be secured. Other IPD Party is a person or entity identified in Annex - OTHER PARTIES or a person or entity identified in Schedule E - ADDED PARTY, if any, as parties to the Contract to perform a part or parts of the Design Services or the Work, as the case may be, but does not include the Owner, the Consultant and the Contractor. The overhead, which does not include any profit for the Design/Construction Team, to be included in the Reimbursable Costs are calculated on the following basis: • Consultants – A percentage to be determined of the actual cost as identified in Schedule B – ALLOWED COSTS • Contractor – A percentage to be determined of the actual cost as identified in Schedule B – ALLOWED COSTS • Other IPD Parties – as set out in Annex - OTHER PARTIES and Schedule E – ADDED PARTY The Design/Construction Team is responsible for paying subcontractors and subconsultants
	Change/Contingency	The Risk Pool may be adjusted at three points: 1. Increase upon selection of Added Value Incentive Items: Owner may select an Added Value Incentive Item where the estimate Final Target Cost x 125% is < the Base Target Cost. This is calculated during the Design/Procurement Phase and before the Final Target Code is established. The Risk Pool is increased by 25% of the estimated Reimbursable Costs of each Added Value Incentive Item. 2. Increase at the end of the Design/Procurement Phase: When the Design/Production phase is completed and the PMT determines after the selection of Added Value Incentive Items the Final Target Cost is < the Base Target Cost the Risk Pool is increased according to the following: (a) If difference is < or = 15% of the Base Target Cost, the Risk Pool is increased by a designated % of the difference, the % is to be determined by the parties. (b) if the difference is > 15% of the Base Target Cost, the Risk Pool is increased by a designated % of the difference, the % is to be determined by the parties. 3. Increase or decrease upon completion of the Warranty Phase: (a) If the Final Actual Cost is < the Final Target Cost, the Risk Pool is increased by 50% of the difference. (b) If the Final Actual Cost exceeds the Final Target Cost, the Risk Pool is reduced by an amount equal to the excess until the Risk Pool is depleted. Contractual Amendments have to be made where the PMT makes decisions affecting the Risk Pool. The Risk Pool can change if there is an occurrence of an unforeseen event but it too must be set out in a Contractual Amendment. Reallocation of Work Scope may adjust the Risk Pool distribution. A recalculation of the Risk Pool distribution is to be recorded in a Contract Amendment. The PMT may recalculate the distribution of the Risk Pool if there is material financial inequity from the reallocation of the work scope of the members of the Design/Construction Team Contract Amendments are to be used when documenting changes to the Project Objectives, including Base Target Cost, Final Target cost, Milestone Schedule and Risk Pool. Any party can provide PMT with a request for a Contract Amendment setting out the nature of the change, reason and effect. The PMT retains discretion to reject any requests not submitted promptly. Additionally, the PMT must promptly review and make a determination for a Contract Amendment request.

Model		1. CCDC 30 - Variant of IPD Style of Contract
Risk Allocation Provisions	**Insurance**	Owner, Consultant, Contractor, subcontractors/subconsultants are to pay for the following forms of insurance from start of Work until 1 yr after date of Substantial Performance: • Automobile Liability Insurance; • Aircraft/Watercraft Liability Insurance; and • Contractors' Equipment Insurance if used directly or indirectly in the Work. • Commercial General Liability Insurance The PMT is also required to have specific insurance including: • "Wrap-Up" general liability insurance; • Builders' Risk Broad Form • Boiler and Machinery/Equipment Breakdown • Project professional liability insurance The insurance provisions are very specifically laid out in the Contract The PMT is to administer the insurance related administration for the Project. The insurance premium and deductible amounts are considered Reimbursable Costs.
	Bond	Data to be provided when the deliverable is at 100% completiond
	Indemnity	The parties indemnify eachother from and against all claims, for losses suffered by them or a 3rd party arising from/ attributable to involvement in Contract, provided certain conditions are met, including reasonble notice in writing, except where insurance coverage exist and has a limit, there is a limitation in the Validation report. But claims of third parties resulting from bodily injury, sickness, disease, death, or injury to destruction of tangible property, the obligation to indemnify is without limit.
	Liability	Owner, Consultant, Contractor, Other Parties waive all claims from Contract and also consequential damages. They do not waive liability for direct loss and damage arising from claims arising from a list if items: willful default; express warranty obligations of the parties or an obligation to provide third party warranties, payment of amounts due under the Contract by any party to the Contract against any other party, attributable to any violation, including: alleged violations of any IP rights, patent or copyright or trademark or licenses, failure to provide insurance coverage, indemnification under policies of Insurance claims by third parties; and damages resulting from substantial defects or deficiencies in the Work or Design which were not known or could not have been reasonable discovered before the end of the Warranty Phase.
	Termination	Owner, member of Design/Construction Team can terminate prior acceptance of Validation Report, with Written Notice. The remaining parties may: a) replace the terminated party; b) elect to continue the Contract, Contract appropriate revisions to the Schedules; or, c) the Owner may terminate the Contract. Before termination, remaining parties are entitled to recover from the terminated party any portion of the Risk Pool paid under Milestone Payments, where the amount paid under the Milestone payment exceeds the amount they are entitled Upon termination, any member Design and Construction Team is entitled to Reimbursable Costs incurred for Validation Phase, without profit. A terminated party is entitled to their share of the Risk Pool, relative to the Design Services and Work completed when they are terminated, which becomes due only at the end of the Warranty Phase, minus any loss or damage incurred by the other parties due to the default. Any member of the Design/Construction Team who terminates their participation in the Contract are entitled to be paid all Reimbursable Costs, share of the Risk Pool accrued for any loss sustained upon products and construction equipment and any other damages sustained due to their termination and participation in the Contract. After the Validation Phase, Owner may give written notice to the Design/Construction Team of an error. W/n 5d, if they fail to correct it, Owner may terminate Contract. If the Owner terminates the Contract the Owner must: • Take possession of the Project, products at the Place of Work, utilize the construction equipment and finish Work; • Pay the Design/Construction Team Reimbursable Cost incurred to the date of termination; • Pay all parties fair compensation for any constriction equipment retained for use; and • Assume and become liable for all obligations and unliquidated claims undertaken or incurred re: Project. Upon termination, parties are entitled to portions of the Risk Pool up and until termination. Obligations for quality, correction and warranty continue in force.
Management	**Decision Making**	2 decision making bodies: Project Mngt. Team/Senior Mngt. Team Most decisions of PMT/SMT are unanimous and if not, are escalated PMT decisions re: design, cost, schedule or reallocation of Work are to be recorded in writing and signed by all members of the PMT. PMT decisions that affect Base and Final Target Cost, Milestone Schedule, Risk Pool is to be documented by a Contract Amendment. PMT decisions are final and not subject to review or modification except by subsequent PMT action or SMT instruction A Project Implementation Team ("PIT") is PMT's interdisciplinary, cross-functional teams, made up of rep.'s of the Consultant, Contractor, Other IPD Parties, subconsultants/ subcontractors. Provides working-level guidance/implement of Project. PIT's role is to collaborate with the PMT and other PIT's regarding elements of the Project: site use, improvements, selections, installation of materials, building systems and equipment. PIT's meet regularly with the PMT during Target Value Design (TVD) process to evaluate the project and use the process to optimize and coordinate the design in accordance with the Base Program. During Validation Phase, PMT develops an initial pull-based schedule based on the design requirements and the Milestone Schedule jointly with the PIT's.
	Documents /Record Access	Members of Design/Construction Team must keep accounts necessary to document Reimbursable Costs. IPD Team is allowed reasonable access to the Design/Construction Team's records re: to Reimbursable Cost. Design/Construction Team must keep records for 1 yr. from date of final payment or longer as per the PMT; Owner can retain plans, drawings, graphic representations and specifications for its use SMT can terminate a member of the Design/Construction Team by unanimous vote. Where there are differences between the parties or failure to agree, such disputes are to be settled in accordance with the Dispute Resolution The Project Implementation Team ("PIT") are interdisciplinary, cross-functional teams organized by the PMT, and consist of appropriate representatives of the Consultant, Contractor, Other IPD Parties, subconsultants, and subcontractors to provide working-level guidance for the implementation of elements of the Project. The role of the PIT is to collaborate with the PMT and other PIT's regarding Project elements such as site use, improvements, selections, installation of materials, building systems and equipment. They ae also to meet regularly with the PMT through the Target Value Design process to evaluate the project and use the Target Value Design process to optimize and coordinate the design in accordance with the Base Program. During the Validation Phase the PMT is to develop an initial pull-based schedule based on the design requirements and the Milestone Schedule jointly with the PIT's.
	Dispute Resolution	The PMT is responsible for management of all conflicts under the Contract. However any differences, failure to agree (collectively called disputed) will be settled in accordance with the Conflict Management provision. PMT must resolve disputes by amicable negotiation and provide timely disclosure of relevant facts, information and documents to facilitate the negotiations. If PMT is unable to reach unanimous agreement, refer the conflict to the SMT. If SMT cannot resolve the conflict, Owner in SMT can give instructions to the Design/Construction Team to perform If the dispute cannot be resolved by the SMT, it shall be submitted to mediation as per CCDC 40. Then if the dispute is not resolved by mediation the parties may refer it to be finally resolved at arbitration as per CCDC 40 Parties may refer unresolved dispute to the Courts or other forms of ADR agreed to in writing.
	Warranty	Data to be provided when the deliverable is at 100% completiond

Model		**1. CCDC 30 - Variant of IPD Style of Contract**
Knowledge/ Resources	**Knowledge/Resources**	http://www.ccdc.org/document/ccdc30/

Model		2. NEC4 – Engineering and Construction Contract
Background	**Origin/History**	Created by the Institution of Civil Engineers in the UK. There have been 4 editions since 1993. NEC4 is the 4th edition and went public in June 2017.
	Scope of Usage	It is in use in over 16 countries with the highest level of adoption in UK, New Zealand, Australia, Hong Kong and South Africa. Application include mostly in civil work
Form	**Structure/Components**	NEC4 is described as a "'family' or 'suite' of standard contracts" each made of "core clauses" and "primary options" and "secondary options". Multiple contracts are included in the suite, each accompanied by Guidance Notes/Flowcharts: • Engineering and Construction (ECC). • Engineering and Construction Subcontract (ECS) • Engineering and Construction Short Contract (ECSC) • Engineering and Construction Short Subcontract (ECSS) • Professional Services Contract (PSC) • Professional Services Short Contract (PSSC) • Framework Contract (FC) • Term Service Contract (TSC) • Supply Contract/Short Supply Contract (SC/SSC) • Dispute Resolution Service Contract (DRSC Two new contracts were introduced with edition 4: • Design Build and Operate (DBO) • Alliance Contract (ALC) NEC contracts have 9 "Core Clauses", 2 "Dispute Resolution Options"; and the ECC, TCS and PCS have 6 "primary
	Parties	Parties: 2-party contract between "employer" (owner) and contractor.
Commercial Provisions	**Target Cost**	Within the NEC "family" of standard templates, two of the compensation options that can be chose by a user relate to "target cost", and they are: • Option C: Target contract with activity schedule • Option D: Target contract with bill of quantities These options permit the establishment of a target cost immediately upon contract execution. Option C: Is a cost plus contract which is subject to a pain/gain share mechanism by reference to an agreed target cost built up from an activity schedule. A target cost contract introduces a mechanism enabling the contractor, and/or the consultant team, to share in the benefits of cost savings, but also to bear some of the cost when there are cost overruns. This is typically shared in a pre-agreed proportion. The activity schedule to submitted with the relevant programme (project plan) and identifies each activity and the price that is allocated to it and when interim payments are made against completion of each activity. Option D provides for a target cost with a bill of quantities: A bill of quantities is a document prepared by the cost consultant (often a quantity surveyor) that provides project specific measured quantities of the items of work identified by the drawings and specifications in the tender documentation. A bill of quantities should be prepared when the design is complete.

Model		2. NEC4 – Engineering and Construction Contract
	Compensation	The compensation and incentives are structured by way of 6 (compensation) Options, each represented a different methodology: • Option A: Priced contract with activity schedule • Option B: Priced contract with bill of quantities • Option C: Target contract with activity schedule • Option D: Target contract with bill of quantities • Option E: Cost-reimbursable contract • Option F: Management contract Option A: (Lump Sum) Priced with activity schedule: The Contractor offers to provide the works described in the contract for a sum of money. The contract provides for certain risks to be carried by the "employer" (owner) resulting in the lump sum being adjusted if "compensation events" occur. The activity schedule is typically written by the Contractor since it knows what activities will be carried out. Each activity is priced as a lump sum by the Contractor which is paid when the activity is completed. In pricing an activity, the Contractor takes responsibility for estimating quantities and resources, and assessing and pricing risks. Option B -(Measured) price with bill of quantities: The "employer" (owner) provides a bill of quantities which is priced by the Contractor. The contract price is the sum of prices for all items in the bill which may include lump sums for certain items. When the work is done, if it is found by remeasurement that the estimated quantity is not correct, it is corrected and payment is made to the Contractor to reflect the actual work carried out. Under this option, unlike Option A, the "employer" (owner) takes the risk of the correctness of the quantities. Option B should be used when the risk of change in quantities is relatively high. Option C - Target Cost contract with activity schedule: In this option the Contractor tenders (or negotiates) a target price using an activity schedule. Each activity is priced as a lump sum and a Fee is also tendered as a percentage for subcontract work and for the Contractor's own direct work. The initial target price is the sum of the activity prices and the fee. During the course of the contract, the target price is adjusted to address compensation events that are set out in the contract. Payment is made on the basis of actual costs with an incentive mechanism for the Contractor to minimise costs. Savings and over-runs are shared between the parties. The sharing of risk in the target cost approach is likely to reduce the occurrence of disputes. Option D - Target Cost contract with bill of quantities: This is similar to Option C except that the target price is established by means of a bill of quantities rather than an activity schedule. During the course of the contract, the target price is adjusted to allow for changes of quantities as well as for compensation events. Thus, the "employer" (owner) carries a rather greater risk than is the case with Option C.
	Change/Contingency	NEC3 has prescriptive requirements for the development, acceptance and revision of the programme (project plan) issued by contractor for acceptance by the "employer". This establishes a credible baseline for Change and application of Contingency. The standard forms provide a comprehensive list of what should be included within a programme (project plan) including: • starting date, Key Dates and Completion Date • Planned Completion • order and timing of the operations of contractor • provisions for "float" (contingency) • provisions for time risk allowances • key dates when Contractor will need: (i) access to any part of the site, (ii) acceptances, (iii) plant and materials provided by the owner, (iv.) Information • any other information that is requested within works information • statement of how the contractor plans to do the work identifying principal equipment and resources to be used Under core clause 31.3 the Project Manager (PM) is required to either accept the programme (plan) or notify the contractor of reasons for non-acceptance it within 2 weeks of the contractor's submission. The contractor is then required under core clause 32, to submit an updated and revised programme at regular intervals from the starting date, as stated in the contract data. Core clause 50.3, impose a powerful incentive on the contractor to ensure that an initial "programme" (project plan) is submitted: a ¼ of the price of work is withheld until an initial programme is submitted. Revisions (Change) to the Programme: Clause 32.1 permits the Contractor at time to update the current "programme" (project plan) to reflect the true reality of what they perceive all remaining works to entail and detail current progress, impact on compensation events, addressment of delays and correct of noted Defects, etc. – and submit to the "employers" (owners) PM for acceptance.
Risk Allocation Provisions	**Insurance**	The default position is that the contractor has to insure against the specific (listed) events it is liable for (clause 83.3), while the "employer" (owner) has no such obligation. The contractor's insurance is required to be in place from the starting date until the defects certificate is issued. This means the contractor must have a policy in place beyond the date of completion. With the exception of professional indemnity insurance, the obligation to be insured ceases after the defects certificate is issued The insurance table (NEC3 ECC clause 84.2 and NEC4 ECC clause 83.3) lists four events against which the contractor is to insure with a minimum amount of cover. The contractor remains liable, with or without insurance, subject to any limits in X18. One of the PM's duties is to review the contractor's insurance certificates and decide to accept or reject. In making this decision, the project manager is required to ascertain if the insurance complies with the contract and assess the commercial position of the insurer. The core insurance clause (above) does not require the contractor to insure against claims of negligence in its design. If the contractor's liability goes beyond the standard of 'reasonable skill and care' or 'skill and care normally used by professionals designing works similar', the parties should implement one of the "secondary option" X15, which requires the contractor to take out a professional indemnity insurance policy. With the exception of employer's liability insurance, all policies for insurance made be in joint names and preclude a right of subrogation by the insurer.
	Bond	Data to be provided when the deliverable is at 100% completion.
	Indemnity	Reciprocal indemnity against all risk events, and reduction of the liability to the extent and proportion that the counterparty contributes to the loss.

Model		2. NEC4 – Engineering and Construction Contract
	Liability	Secondary Option X18 states what the limitation is on various liabilities, such as indirect or consequential loss, but is not a contract mechanism for recovery, which is dealt with elsewhere. X18.1, 18.2, 18.3 limits the contractor's liabilities to the "employer" (owner) for respectively indirect/consequential loss, loss of property, defect in design to amounts agreed to by parties and listed in the Contract Data. X18.4 limits the contractor's total liability for all matters except a list of excluded matters to an amount agreed to by parties and listed in the Contract Data. Excluded matters include: Delay Damages – which are dealt with in Option X7 Low Performance – which are dealt with in Option X17 X18.5 – sets out an "end of liability date". X7 – Used for a contract where the works and works information are described using a performance specification (KPI) and a Defect arises such that the KPI is unachieved. X17 is a typical liquidated damages clause that impose a daily rate set out the in Contract Data, for each day until Completion or "employer" (owner) takes over the works.
	Termination	Data to be provided when the deliverable is at 100% completion.
Management	**Decision Making**	The PM, appointed by the "employer" (owner) is a significant decision maker. NEC clause 10.1 stated that the "employer" (owner) and Consultant (the PM) shall act "in a spirit of mutual trust and co-operation." But there is bias because the owner appoints the PM. The decisions of the PM are immediately reviewable by the Adjudicator, who is independent. Either party may call for an Adjudicator to "open-up, review and revise" the PMs decision within 28-days.
	Documents/Record Access	The NEC3 contracts actively encourage a culture of transparent decision making by creating strict requirements about how communication should take place with all key stakeholders involved with the contract. The specific clauses related to communication are as follows: Clause 13.1 – This clause requires each form of communication to be in a format which can be read, copied and recorded. Clause 13.2 – This clause says that a communication will have effect when delivered to the address in the Contract Data or to any other address notified by one party to the other Clause 13.7 – This clause requires notifications to be communicated separately from other types of communications to ensure no notifications are missed. The NEC3 contracts consider that notifications are so important as to warrant separate communication. A failure to do so would possibly make the proposed notification void. Transparency – Early Warning: NEC4 includes warning process obliging both parties to identify potential problems to the project and notify the other as soon as they become aware of a matter that could affect time, (Key Date or Completion), cost (Price) or quality (performance). The process includes the concept of a "risk reduction" meeting to address the risk or event identified in the early warning.

Model		2. NEC4 – Engineering and Construction Contract
	Dispute Resolution	There are two dispute resolution "options" labelled Option W1 and Option W2. Under both options, the intention is that the Senior Representatives process should act as the primary dispute resolution process, adjudication as a secondary process and arbitration / litigation as a third and final resolution process. There is also a new Option W3 – Dispute Avoidance Board Senior Representative Process Highlights:Under Option W1 (used where the UK Construction Act does not apply) the initial referral process to Senior Representatives is compulsory prior to the commencement of adjudication proceedings. Option W2, while the contract envisages that the parties should refer a dispute to the Senior Representatives in the first instance, clause W2.2(1) confirms that the parties are entitled to refer a dispute to adjudication at any time. each party must submit a statement of case within a week of notification, limited to ten sides of A4 plus supporting evidence. However, the Senior Representatives can attend as many meetings and use any procedure they consider necessary to resolve the dispute over a period of no more than 3 weeks. At the end of this process a list of issues agreed and not agreed is produced and the Project Manager and Contractor must put the agreed issues into effect. The process is also intended to be "without prejudice" and no evidence of the statement of case or the discussions may be disclosed in subsequent proceedings. Adjudication Process: If the parties' senior representatives cannot agree a nominating body appoints an independent adjudicator at the start of the contract. The adjudicator's appointment is made official via a handy NEC-provided Dispute Resolution Service Contract. There is an "Adjudication Table" set outs a variety of procedural treatments for different types of disputes, including, depending on the nature of the dispute: which party may refer a dispute to the Adjudicator, time-lines and rules for notifying and referring disputes, the Adjudicators powers and responsibilities, such those relating to fact finding, communication with the parties, cost assessments, extensions, reasons. The contract clarifies that while the Adjudicator's decision is binding, it is not enforceable in the same as an arbitrator's decision and can be referred to and reviewed by a tribunal is a party is "dissatisfied". The provisions for review by tribunal set out the time-lines and rules for referring disputes, tribunal powers to review and revise an Adjudicator's decisions. Arbitration Process: The nature of the process lies outside of the NEC4 document. Dispute Avoidance Board (DAB): New Option W3, is only applicable where the UK Construction Act does not apply and provides for the obligatory referral of all "potential disputes" to an impartial standing DAB before any subsequent referral to a tribunal. The DAB is formed of one or 3 members identified in the Contract or nominated by a DAB nomination body specified by the parties. The objective of the DAB is to resolve
	Warranty	Data to be provided when the deliverable is at 100% completion.
Knowledge/ Resources	**Knowledge/Resources**	https://www.neccontract.com/

Model		3. AIA C191 FAMILY (3 Party Agreement)
Background	**Origin/History**	American Institute of Architects C191-2009 Standard Form Multi-Party Agreement for Integrated Project Delivery
	Scope of Usage	Mostly in America and Canada
Form	**Structure/Components**	The following documents form part of the Agreement: Multi-party Agreement: A. Exhibit A, General Conditions B. Exhibit B, Legal Description C. Exhibit C, Owner's Criteria D. Exhibit D, Target Criteria Amendments Exhibit AA, Target Cost Breakdown ii. Exhibit BB, Project Definition iii. Exhibit CC, Project Goals iv. Exhibit DD, Integrated Scope Services v. Exhibit EE, Project Schedule vi. Exhibit FF, Digital Data Protocol vii. Exhibit GG, Building Information Modeling Protocol
	Parties	
Commercial Provisions	**Target Cost**	The Target Cost is set before the conclusion of the Criteria Design Phase. (§5.2) Contractor, Architect and other non-Owner Parties develop the Target Criteria Proposal ("TCP"), and if the Owner approves the TCP, a Target Criteria Amendment ("TCA") is executed establishing the Target Cost, the Project Definition, the Project Goals, and the Project Schedule, among other things. (§5.2; see also Exhibit D) If the Parties are unable to agree on the Target Cost, or Owner rejects the TCP, or the Parties are otherwise unable to execute the TCA, the Agreement is terminated and the Owner pays the other Parties the amount due and owning under the contract documents without reference to a specific provision defining how that amount is to be calculated. (§5.2, §10.2.1) However, §4.2.3 allows the Parties to set a GMP on the cost of preparing a Target Criteria Proposal.

Model		3. AIA C191 FAMILY (3 Party Agreement)
	Compensation	Profit is earned through: (1) "Goal Achievement Compensation," which is paid upon achievement of the Project Goal and regardless of whether the Target Cost is exceeded; and (2) realized "Incentive Compensation" if actual costs are below the Target Cost at Project completion. (§1.1.2, §4.4.1, §4.5) If the Target Cost is exceeded, the Owner will either continue to pay all Costs of the Work, which includes Architect's and Contractor's salaried employees (§4.1) ; OR the Owner has a check the box option to not reimburse the Parties for any further Labor Costs but only continue to pay for material, equipment and subcontractor costs. (§4.2, §4.2.4). The Agreement does not define the Architect's and Contractor's fees, nor does it include a mechanism for placing any percentage of those fees at risk. Rather, it states only that the Parties will "share in any savings realized," and includes a placeholder for each Party to insert its respective proportional share of such savings. (§1.1.2, §4.4.1) Note: Project Schedule is not directly tied into compensation. It may be part of the Goal Achievement Compensation but the Agreement does not really discuss what happens if the Project Schedule is exceeded.
	Change/Contingency	The Target Cost Breakdown ("TCB") is to identify all costs, fees, allowances and contingency amounts. The parties are to develop a risk matrix that identifies principal risks for planning, designing and constructing the project. The risk matrix will be used to establish the Target Cost contingencies. (§A.5.7, A.5.8.1) Target Cost may be only be amended (1) upon unanimous, written agreement of the Parties, or (2) for the following specific reasons: Quantity variations where unit prices are used; Cost variations from specified allowances; Owner initiated changes in the Project Definition Owner initiated changes to the Project Schedule; material defects in Owner supplied services and information; or Force Majeure or (3) to reflect a reduction resulting from failure to achieve a Target Goal for which Goal Achievement Compensation was to have been awarded. (§5.3.1, §5.3.2, §5.3.3, §6.3) Adjustments to the Target Cost and Contract Time are accomplished via Change Order or other "Modification" to the Agreement. (§2.3.2, §5.3.1). The definition of Modification includes Change Orders, amendments signed by the Parties and Owner Directives. Note: There is not a definition for what constitutes a Project delay, and there does not appear to be any relief for schedule delays unless it is an Owner initiated change in the Project Schedule.
Risk Allocation Provisions	**Insurance**	Has default normal insurance provisions with an assumption that it will be replaced by an OCIP, if available, no later than execution of the Target Criteria Amendment. (§7.1, §7.2) Includes a waiver of subrogation between parties for damages caused by fire or other peril covered by insurance, except as to proceeds of the policy (§8.2.2).
	Bond	
	Indemnity	Mutual comparative indemnity for personal injury and property damage caused by a Party's negligence. Indemnity obligation is limited to the indemnifying Party's available insurance coverage, unless the Party failed to secure required insurance. (§8.3) The Agreement also provides that each Party shall indemnify the others against third-party claims for vicarious liability. (§8.4)

Model		3. AIA C191 FAMILY (3 Party Agreement)
	Liability	Complete waiver of claims subject to 7 exceptions: (1) Willful Misconduct; (2) Express Warranty; (3) Owner's Failure to Pay; (4) Express Indemnification; (5) Failure to Procure Insurance; (6) Damages arising from 3rd party liens, etc; and (7) Damages covered by insurance. (§8.1) Note: Although there is a waiver of consequential damages, the Agreement allows for liquidated damages. (§8.2.1)
	Termination	Automatic Termination Failure to agree on the Target Criteria Amendment results in an automatic termination of the Agreement. The Target Criteria Amendment is a modification to the Agreement entered into at the conclusion of the Criteria Design Phase and prior to the commencement of the Detailed Design Phase (Exhibit A, A.1.1.13). The Owner is to pay the Parties all amounts owing under the Contract Documents at the time of termination (Section 10.2.1). A Party can terminate the Agreement by providing seven days written notice to the other Parties (Section 10.2.2.1). The Owner is to compensate the Parties in accordance with Section 10.2.3.2. A Party may terminate the Agreement in the following circumstances: • The Owner has failed to make payments to the Party in accordance with the Contract Documents, where the Party's Work has been stopped for 30 consecutive days due to no act or fault of the Party (Section 10.2.2.1). • The Owner repeatedly suspends, delays or interrupts the entire Work, as described in Section 10.1 which amounts to greater than 100% of the total number of days scheduled for completion or 120 days in any 365 day period (whichever is less) (Section 10.2.2.2). Where a Party terminates the Agreement pursuant to Section 10.2.2, the remaining Parties are to meet within 10 days to determine if the Project continues. Where the Parties cannot mutually agree upon the terms and conditions of continuation, the Contract terminates and the Owner compensates the terminated Parties in accordance with Section 10.2.3. Termination by the Owner for Convenience: The Owner can, at any time, terminate the Contract for their convenience and without cause, upon seven days written notice to the Parties. Where such notice is provided, the Parties are to stop all operations as directed by the Owner in the notice, take actions for protection and preservation of their Work and terminate existing sub-contracts and purchase orders, ensuring they enter into no further subcontracts or purchase orders (Section 10.2.3.1). Where the Owner terminates a Party pursuant to Section 10.2.4.1, they are not entitled to further payment until the Project is completed. When the Project is completed, the remaining Parties determine the sum attributable to the terminated Party, excluding damages and expenses incurred by the remaining Parties, due to the termination (Section 10.2.4.2).
Management	**Decision Making**	The Project Executive Team ("PET") is responsible for the overall planning and management of the project. The PET consists of a representative from the Owner, Architect, Contractor, and any additional Parties to the Agreement. The PET may delegate responsibilities to others, including the Project Management Team ("PMT"). Decisions by the PET must be unanimous. (§2.1.1, §2.1.2, §2.1.3) If the PET is unable to reach consensus, there is an option for an "Owner's Directive," which is similar to the Hanson Bridgett model, and subject to further dispute resolution. (§2.1.2, §2.1.2.1) The PMT includes one representative from each Party to the Agreement. The PMT is responsible for the day to day management of the project and for executing the decisions of the PET. PMT decisions must be unanimous, and are binding, subject to subsequent review and decision by the PET. The PMT does not have authority to make decisions that impact Target Cost or Contract Time. (§2.2.1, §2.2.2, §2.2.3) If the PMT is unable to reach consensus, any member may refer the matter to the PET for resolution. The PET has the sole authority to approve issues that result in a change to the Target Cost or the Contract Time. (2.2.3, 2.3.2) Note: There is some tension and confusion between the roles and authority of the PMT and PET. The document says that PMT decisions are binding, unless the PET acts, which can create some uncertainty concerning PMT decisions

Model		3. AIA C191 FAMILY (3 Party Agreement)
	Documents/Record Access	Parties must maintain books and records for 3 years after final payment. Owner has the right to audit upon reasonable notice, except for previously agreed rates, unit prices and lump sum amounts. Accounting records and business methods are deemed confidential and proprietary. (§4.6)
	Dispute Resolution	The Parties establish protocols for issue resolution, and endeavor to resolve all Project issues through direct discussions of the PMT. Issues not resolved by the PMT may be submitted to the PET. If the PET fails to reach consensus, any party may refer the dispute to the Dispute Resolution Committee ("DRC"). (§2.3.1, §2.3.2, §9.3) The DRC consists of a senior representative from each Party and a Project Neutral. The DRC will meet and confer within 15 days of dispute initiation, and the Project Neutral will endeavor to mediate resolution of the dispute. (§9.4, §9.4.1,§9.4.2, §9.5.1) If the matter is not resolved, and depending upon the check box option chosen, the matter will either be (1) Arbitrated by the Project Neutral; (2) Arbitrated by the AAA; or (3) resolved by other binding dispute resolution method (e.g., litigation or DRB). (§9.6)
	Warranty	The Contractors warrant: 1. Materials and equipment used in the Contractors Work are of good quality and new, unless the Contract Documents permits otherwise (Exhibit A, A.10.4); 2. The Contractors Work will conform to the requirements of the Contract Documents and be free from defects, except for those inherent in the quality of the Contractor's Work that the Contract Documents require or permit (Exhibit A, A.10.4); and 3. If within 1 year of the date of Substantial Completion of the Work or after the date for commencement of warranties under Exhibit A, A.10.18.1 or terms of an applicable special warranty, the Contractors Work is not within the requirements of the Contract documents, the Contractor is to promptly correct such Work, after receiving written notice from the Owner. The notice is to be given promptly after discovery of the condition (Exhibit A, A, 10.20.2.2.1). The term "Contractor's Work" means the construction and services required of the Contractor by the Contract Documents, whether completed or partially completed, and includes all other labour, materials, equipment and services provided, or to be provided, by the Contractor to fulfill the Contractor's obligations (Exhibit A, A.1.1.3). The Contractor also warrants that title to all of the Contractors Work covered by an Application for Payment will pass to the Owner, no later than the time of payment (Exhibit A, A.12.5). During the Closeout Phase, the Parties are to conduct inspections, to determine, amongst other things, any written warranties and related documents requirement by the Contract Documents and assembled by the Contractor (Exhibit A, A.11.1.1). The Parties does not waive claims against each other claims out of any express warranty obligations of the Parties, which are set out in Exhibit A, A.10.4, or obligations to provide third-party warranties under the Contract Documents (Section 8.1.2). The Parties can commence a claim arising out of breach of warranty, or otherwise, against each other as permitted by Article 8, Risk Sharing, of the Agreement, in accordance with Article 9, Dispute Resolution, of the Agreement within the time period specified by applicable law. But in any case not more than 10 years after the date of Substantial Completion of the Work (Exhibit A, A.16.7).
Knowledge/ Resources	**Knowledge/Resources**	https://www.aiacontracts.org/contract-documents/18471-multi-party-agreement----ipd

Model		4. AIA C195 FAMILY2 (LLC formation + agreement governing LLC +3 separate agreements) (C195, C196, C197)
Background	**Origin/History**	
	Scope of Usage	
Form	**Structure/Components**	
	Parties	
Commercial Provisions	**Target Cost**	The Target Cost is set before the conclusion of the Criteria Design Phase. The Agreement specifies that the Target Cost Proposal ("TCP") shall be developed jointly by the Members, but that Construction Manager ("CM") is primarily responsible for its development, in consultation with Owner and Architect. (§5.1.1, §5.1.2) After the CM and Architect reach a consensus, they present the Target Cost to the Owner and the Owner evaluates and either approves or disapproves. (§5.1.1, §5.1.2) If the TCP is accepted, the Members execute a Target Cost Amendment ("TCA"). The Target Cost may only be adjusted under limited circumstances via written Amendment. (§5.5,§5.6.1) If Owner rejects, then Architect, CM, Owner and the other Members revise the Project Definition and Schedule, to see if they can reach a consensus on Target Cost. If consensus not reached, the LLC is dissolved and the governing Agreement is terminated. (§5.5)
	Compensation	The A/CM and other Non-Owner Members of the LLC are reimbursed for direct costs and a percentage of indirect costs incurred during the course of providing services to the Project, pursuant to each Member's separate agreement with the LLC. (C197 §6.1.1, Article 8) Profit is earned through: (1) "Goal Achievement Compensation" which is paid upon achievement of the Project Goal and regardless of whether the Target Cost is exceeded (C196 §2.2.3.3); and (2) realized "Incentive Compensation" if actual costs are below the Target Cost at Project completion. (C197 §§6.2, 6.3) Completion of the Project on or before the Substantial Completion Date established in the Project Schedule is specified as one of the Goals for which Goal Achievement Compensation is to be awarded. (§CC.2.1.2) Non-Owner Members forfeit the Goal Achievement Compensation if they fail to achieve a project goal, regardless of fault. Similarly, Incentive Compensation is forfeited if Actual Costs exceed Target Cost, regardless of fault. (§1.2.1 ("success or failure shall be shared"), §5.6.3 ("Goal Achievement Compensation for the unachieved goal is not awarded") If the Target Cost is exceeded, Architect, CM and other non-Owner Members will continue to perform their respective work without further compensation for direct or indirect costs. (C197 §6.1.2; C196 §2.2.3.3) Therefore, the Target Cost essentially sets a guaranteed maximum price that the Owner will pay for design and construction of the Project. Target Cost recovery plans are developed without regard for which Member(s) may have been at fault. The Owner has the right to reject any recovery plans presented by the Architect and CM, although they must continue the Work and take reasonable mitigation steps. (§5.7.5,§5.7.6)

Model		**4. AIA C195 FAMILY2** (LLC formation + agreement governing LLC +3 separate agreements) (C195, C196, C197)
	Change/ Contingency	The Target Cost Breakdown ("TCB") must identify in detail the various elements of the Target Cost. Target Cost includes a contingency for uncertainty in the scope of Work, risk, potential indemnity costs, market conditions, and other factors. The risk matrix is used to establish the Target Cost contingency. (§5.2.8, §5.3) Note: Does not discuss how contingency is used. Target Cost cannot be adjusted except: (1) Owner-initiated changes in the "Project Definition" or Project Schedule; (2) Force Majeure events; (3) Reduction in Target Cost because Project goal is not achieved and Goal Achievement Compensation is not awarded; or (4) other reasons upon unanimous, written agreement of the Members. (§5.6) The Target Cost is adjusted via written Amendment signed by all Members. (§5.6.1)
Risk Allocation Provisions	**Insurance**	Encourages "Integrated Coverage" by providing that LLC-controlled insurance program ("CCIP") may be elected upon acceptance of the Target Cost. Has default normal insurance provisions for "Pre-Target Cost" coverage, as well as additional provisions describing "Post-Target Cost" coverage for insurance not provided under the CCIP. (Article 13) Separate Owner's Agreement requires Owner to either obtain Property insurance, or notify the other Members of its intent to not procure such coverage. (C196 §2.4.2) Separate Member agreements provide that the LLC and the Member waive all rights against each other, and against the Owner and its contractors/consultants, for damages covered by insurance, except as to proceeds of the policy. Separate A/C/O Agreements are to include waivers of subrogation. (§6.2.1.10, §6.2.2.7; C197 §11.3; C196 §7.2)
	Bond	
	Indemnity	Members are protected by the LLC and are indemnified by the LLC for claims arising from their acts or omissions, except for 1) willful misconduct; and (2) obligations expressly arising under the Members' separate agreements with the LLC. (§12.1, §12.2, §12.3) The LLC provides indemnity to the Owner, Architect, CM and other Members under separate agreement, for damages, losses and claims not covered by the CCIP except for the Member's own willful misconduct. (§6.2.1.7, §6.2.2.6; C196 §5.4)

Model		4. AIA C195 FAMILY2 (LLC formation + agreement governing LLC +3 separate agreements) (C195, C196, C197)
	Liability	Separate Non-Owner Member Agreements are to include clauses limiting Members' liability to the LLC to the proceeds of available insurance, other than claims and losses arising from the Member's willful misconduct. (§6.2.1.6) Separate Non-Owner Member Agreements are to include language limiting Members' rights to recover against another Member to the proceeds of available insurance, except for claims arising from another Member's willful misconduct. (§6.2.1.11) Separate Owner Agreement includes provisions limiting Owner's right to recover against another Member to the proceeds of available insurance required by governing Agreement and separate Non-Owner Agreements, except for claims arising from another Member's willful misconduct. (§6.2.2.8; C196 §5.3) Note: However, under the compensation sections of the separate Non-Owner Member agreements, the Architect, CM and other Members have the ultimate risk for exceeding the Target Cost because they must continue to perform their respective work and service without further compensation for direct or indirect costs. Liability Waiver: Separate Owner's: Agreement provides that Owner waives all claims against LLC for loss of use and consequential damages due to fire or other hazard. (C196 §2.4.4)
	Termination	Data to be provided when the deliverable is at 100% completion.
Management	**Decision Making**	Decisions for the LLC are made by a "Governance Board" ("Board") consisting of an odd number of Members (5 or more). Owner has majority with 1 more representative than the non-Owner Members. Chair person is one of the Owner's representatives. (§8.2.1) Each Member has sole discretion to replace its representative at anytime and without approval of the Governance Board. (§8.2.2) Authorizations, approvals, or other actions require the unanimous vote of the Board unless specifically designated in the Agreement to be decided by majority vote. (§8.2.3) LLC Members also establish a Project Management Team ("PMT"), consisting of one representative from each Member. The PMT may choose to include non-Member Project participants, as well. (§D.1.1, §D.1.2, §D.1.3) Project decisions require unanimous affirmative vote of the Member representatives of the PMT. If PMT Member reps are unable to reach consensus, the matter is referred to the Governance Board and established dispute resolution procedures. (§D.1.4, §18.2) Note: Presumably, the Members chosen as part of the PMT would not be the same as those chosen to serve on the Board. However, this is not explicitly required under the Agreement.
	Documents/Record Access	The LLC must maintain accounting records. Any Member or its representatives may inspect the LLC's accounting records, the Agreement, and the LLC's Certificate of Formation, for any purpose reasonably related to the Member's Interest in the LLC. (§11.1) The LLC has the right to audit Members' accounts to verify direct and indirect costs per Non-Owner Member separate agreements. (C197 §11.2) Accounting records and business methods are deemed confidential and proprietary. (§11.2) LLC must maintain books and records for 3 years after final payment. The Owner has right to audit LLC's accounts per Owner's separate agreement. (C196 §7.1)

Model		**4. AIA C195 FAMILY2** (LLC formation + agreement governing LLC +3 separate agreements) (C195, C196, C197)
	Dispute Resolution	Members attempt to reach a mutual consensus on all disputes within 15 days notice of dispute. If consensus is reached, CM distributes all recorded resolutions to all Members. (§18.2) If Members fail to reach consensus, disputes are then presented to Governance Board which has 30 days from notice to reach a unanimous consensus. (§18.2) If a consensus is not reached, the matter is referred to arbitration through a "Dispute Resolution Committee," which includes one chief executive of each Member and a "Neutral" arbitrator, who is the chair. If mutual resolution is not achieved within 60 days, the Neutral decides the matter. The Neutral's decision is final and binding. (§18.3, §18.4)
	Warranty	Data to be provided when the deliverable is at 100% completion.
Knowledge/ Resources	**Knowledge/Resources**	As above

Model		**5. CONSENSUS DOCS 300 -** (3-Party Agreement)
Background	**Origin/ History**	
	Scope of Usage	
Form	**Structure/Components**	
	Parties	
Commercial Provisions	**Target Cost**	Project Target Cost Estimate ("PTCE") is based on 100% Construction Documents, is jointly developed by Owner, Designer and Constructor, and is set forth in an Amendment after approval by the Project Management Group ("PMG"). (§8.2.5, §8.3.1, §8.3.6) The PTCE includes all design and construction costs including contingencies, allowances, Constructor's Fee and Designer's compensation. (§8.3.1) Before PTCE is set, the Constructor provides ongoing cost modeling for all phases: preliminary, schematic, design development, and construction documents. Cost models are reviewed by the PMG on an ongoing basis. (§8.2, §8.2.7) If the proposed PTCE exceeds the Project Budget: (1) Owner can either increase the Project Budget or terminate the Project; (2) PMG can authorize re-bidding or renegotiating; or (3) PMG may direct the CPD to provide value engineering and redesign to bring the PTCE in line with the Project Budget. (§8.3.5) Note: The above process is similar to traditional preconstruction services and the PTCE is
	Compensation	Designer's and Constructor's base compensation takes a traditional approach. Designer: Compensation for basic services is based on actual costs and may also include a Designer's Fee (defined as normal non-Project O/H & P). Fee is subject to incentive and risk- sharing provisions. Fee is also subject to adjustments for changes in design services or for project delays, provided Designer is not at fault. Fee may also be adjusted for Additional Services mutually agreed to by the PMG. (Article 9) Constructor: Compensation is broken down by Preconstruction and Construction services. Compensation for Preconstruction may be based on stipulated sum, actual cost, or other basis. Compensation for the Construction is Cost of the Work plus Fee (defined as normal non-Project O/H & P). Fee may be stipulated sum or other basis. Fee is subject to incentive and risk-sharing provisions, and may be adjusted for change orders, and delays not caused by Constructor. (Article 10) The PMG is charged with developing a financial incentive program to reward the CPD Team for achieving Project expectations and benchmarks. Performance criteria may include cost, quality, safety, schedule and innovation, among other things. (§11.2, §11.3) If the actual cost of the project is less than the PTCE, the parties share in savings on a percentage or other basis mutually agreed upon. (§11.4) If the PTCE is exceeded, either the Owner bears the entire cost or the extra cost is shared by the Parties based on mutually agreed percentages or another basis. (§11.5) If the losses are shared, the Parties will agree whether the Designer's and Constructor's Fees are, or are not, at risk, and if so, whether the total amount of each Fee is, or is not, the limit of liability. (§11.6)

Model		5. CONSENSUS DOCS 300 - (3-Party Agreement)
	Change/Contingency	Change Orders cover changes in the scope of work, PTCE or Contract Time. They must be in writing and approved by the PMG. (§2.2) Note: Although the primary Change Order provisions appear to only apply to the Constructor, by definition, if a Designer-related change in the scope, PTCE or Contract Time is approved by the PMG, such change would necessarily need to be accomplished via Change Order. Change Orders follow a somewhat traditional process but are limited to the following conditions: (1) material change in scope of Work; (2) changes required by regulatory agencies; (3) differing site conditions; (4) a compensable delay; or (5) claims for which the Owner is found liable. Constructor can use contingency to cover costs that are not recovered through the change order process. (§8.3.7) Contractor can request, or Owner can order, changes in the Work, timing, or sequencing that impact the PTCE or the Contract Time. Accepted changes are formalized in a Change Order. (§20.2.1) Change orders are resolved through negotiations between Owner and Constructor. Owner may issue a written Interim Directed Change prior to reaching agreement with the Constructor on an adjustment. If they agree, a Change Order is issued. If they dispute the cost of the proposed change, Owner pays Constructor 50% of the estimated cost, and the dispute is subject to Dispute Resolution procedures. (§20.3) The PMG performs a "root cause assessment" on a monthly basis to determine if Change Orders granted should result in an adjustment to the PTCE. The PMG's decision on whether to increase the PTCE directly impacts whether the participants receive an incentive reward or potentially share in a loss. (§20.6)
Risk Allocation Provisions	**Insurance**	Parties provide traditional construction project insurance coverage -- Builder's Risk, E & O, CGL, workers comp and auto. Agreement does not include waiver of subrogation language for Constructor's and Designer's insurance. There is a waiver of subrogation in favor of Constructor, its Subcontractors and Material Suppliers, and Designer. Owner and Contractor further mutually waive all rights against each other for damages covered under the Owner's property insurance, except as to proceeds of the policy. (§21.4.1, §21.4.3)
	Bond	
	Indemnity	The Owner, Architect and Constructor have separate indemnity obligations to each other for damages arising from bodily injury and property damage on a comparative fault basis: Meaning, the party is only responsible to the extent its act or omission caused the damage, and will be reimbursed for defense costs paid in excess of indemnitee's percentage of liability. (§21.1)
	Liability	Project Risk Allocation has two options - (1) "Safe Harbor Decisions" or (2) "Traditional Risk Allocation." Regardless of the option selected, there is a mutual waiver of consequential damages. (§3.8.2, §3.8.3) Under the Safe Harbor, the Parties waive liability against each other for acts, omissions, mistakes, or errors in judgment arising from joint decisions made in good faith by the PMG, unless the party is in willful default of an obligation under the Agreement. (§3.8.2.1) Under the Traditional Risk Allocation, each Party remains fully liable for its own negligence and breaches of contract and warranty but there is an option to cap Designer's and Constructor's liability to a specified amount for uninsurable risk. (§3.8.2.2) Liability Waiver: Separate Owner's Agreement provides that Owner waives all claims against LLC for loss of use and consequential damages due to fire or other hazard. (C196 §2.4.4)
	Termination	Data to be provided when the deliverable is at 100% completion.

Model		5. CONSENSUS DOCS 300 - (3-Party Agreement)
Management	**Decision Making**	The Project Management Group ("PMG") has ultimate decision making authority. The PMG includes a representative from the Owner, the Designer, and the Constructor. It can also include other critical project participants by invitation, but with limited voting rights (e.g., items that directly concern that participant's work) and they are subject to removal. The PMG meets regularly regarding Project status and issues. (§3.3, §4.1,§4.7.2) The decision making process encourages consensus among PMG members, but if a consensus is not reached, the Owner decides, unless the decision implicates life, health, property and public welfare and is required to be made by a licensed design professional, in which case the Designer decides. (§4.6) The PMG receives input from the Collaborative Project Delivery Team ("CPD Team"), which includes the Owner, Designer, and Constructor, plus other design consultants and Trade Contractors involved in the preconstruction phase that sign Joining Agreements. The PMG establishes a matrix for regular meetings of the CPD Team regarding overall Project planning, scheduling and coordination, and variances. (§3.3, §4.8) Note: The Agreement does not specify clearly whether the PMG takes part in the regular CPD Team meetings. The matrix may be a means of establishing which Team members should attend.
	Documents/Record Access	There is a high degree of transparency between the Owner, Designer and Constructor. The PMG has access to all costs models, accounting records and documents used in formulating the PTCE (limited to work performed under unit costs, actual costs, or similar methods). (§8.2.8) Designer and Constructor must keep full and detailed accounts with respect to all costs for their respective portions of the project, which is subject to Owner's audit. (§19.1) Owner's accountants will substantiate Constructor's final costs within 15 days of delivery to the PMG and before issuance of a final certificate for payment. (§19.4)
	Dispute Resolution	Initial dispute resolution is through direct discussion between the Parties and, if the dispute is not resolved within 5 business days, the matter is referred to the PMG. (§23.2) If not resolved by PMG, the parties can opt for non-binding "mitigation" measures: (1) project neutral; or (2) dispute review board. If mitigation measures are not selected, the Parties must mediate the dispute. Findings through "mitigation" measures may be introduced as evidence at a subsequent adjudication. (§23.3, §23.4) Disputes not resolved through the above dispute resolution proceedings are resolved
	Warranty	Data to be provided when the deliverable is at 100% completion.
Knowledge/ Resources	**Knowledge/Resources**	As above

Model		**6. Sutter Health's Integrated Agreement for Lean Project Delivery** (IFOA rev. 2009)3 (3-Party Agreement)
Background	**Origin/History**	
	Scope of Usage	
Form	**Structure/Components**	
	Parties	
Commercial Provisions	**Target Cost**	"Target Cost" is not a binding contract price in the IFOA, but is a design criteria used to guide/stretch the IPD Team as it seeks to create Owner value through the design process. The Target Cost is set as part of the early design effort, in conjunction with the Target Value Design Plan. (§9) The Target Cost is developed following the IPD Team's validation of the Owner's budget during an intensive "Validation Phase." The estimated cost of design and construction by the IPD Team resulting from the validation effort is called the "Expected Cost." If the Expected Cost meets the parameters of the Owner's business plan, the Project proceeds to Preconstruction Phase. Working from the assumption of the Expected Cost, the IPD Team sets the Target Cost as a stretch goal to drive design innovation. (§9.1-9.4) When the Core Group determines the design is sufficient complete, the IPD Team prepares an "Estimated Maximum Price" ("EMP") proposal. As described below, the agreed EMP becomes the contract price that determines whether the final project cost triggers incentive payments or risk-sharing from the profit pool. (§12, §14)
	Compensation	Architect: The Architect is paid on the basis of actual hours expended, which are allocated between "Cost of the Work" and "Architect's Profit" according to the agreed incentive and risk- sharing plan ("IPD Team Risk Pool Plan"). All or a portion of Architect's Profit is segregated into the IPD Team At-Risk Pool. The Architect's services are factored into the EMP and are justified through a resource-loaded work plan ("RLWP"). (§26, §14) CM/GC: The CM/GC is reimbursed for its "Cost of the Work" plus a "CM/GC's Fee." All or a portion of CM/GC's Fee is segregated into the IPD Team At-Risk Pool. CM/GC's preconstruction and construction services and expenses are addressed in the EMP. Preconstruction costs are justified through a RLWP, and construction costs are shown in a schedule of values. (§27, §12.3, §14) Both Architect and CM/GC: If the final Project cost ("Actual Cost") exceeds the EMP, then the Owner recoups its extra costs from the IPD Team At-Risk Pool. Once the pool is exhausted, the Owner bears all additional Cost of the Work without recourse to the participating risk-pool members. (§14, §33.1) If the Actual Cost is less than the EMP, then Architect and CM/GC will typically be entitled to some augmentation to the At-Risk Pool based on a percent of cost savings, depending on how the IPD Team Risk-Pool Plan is worded. Other non-cost performance incentives may be agreed by the parties and provide additional profit augmentation.

Model		6. **Sutter Health's Integrated Agreement for Lean Project Delivery** (IFOA rev. 2009)3 (3-Party Agreement)
	Change/Contingency	Target Cost and EMP include an "IPD Team Contingency" to address reimbursable costs which were not anticipated in the EMP, such as design errors and omissions, but not to fund Change Orders. All IPD Team members' contingency is to be addressed within the IPD Team Contingency. Core Group controls use of IPD Team Contingency. Unless otherwise provided in the IPD Team Risk-Pool Plan, unused IPD Team Contingency reverts to Owner. (§9.8, §9.4, §12.1) Changes in the Work, Expected Cost, Target Cost, EMP or Contract Time may be accomplished by Change Order or Construction Change Directive. The Core Group approves Change Orders. Construction Change Directives may be issued by Owner in the absence of agreement by Core Group. (§24) Increases to the Expected Cost/Target Cost/EMP are limited to the following scenarios: (1) Owner-directed scope changes; (2) changes required by regulatory agencies not reasonably inferable; (3) Differing Site Conditions; (4) Compensable Delays; (5) changes in laws or regulations after EMP agreed; (6) wrongful Owner acts or omissions that cause additional cost to team; or (7) damage to the Work by unavoidable casualties which are not IPD Team's fault. (§24.3-24.4) Changes to the Contract Time are allowed for "Compensable Delays" and "Excusable Delays". Compensable Delays are those caused by wrongful acts/omissions of Owner. Excusable Delays are those beyond the reasonable control and without the fault or negligence of CM/GC and its subs. (§22.9-22.10)
Risk Allocation Provisions	**Insurance**	Parties provide traditional construction project insurance coverage -- Builder's Risk, E & O, CGL, workers comp and auto, though IFOA has been adapted to projects with wrap policies. There is a waiver of subrogation between parties for damages caused by fire or other peril covered by insurance, except as to proceeds of the policy. CM/GC and subs waive all rights of recovery against Owner for losses within scope of subcontractors' insurance. (Ex. 5, Ex. 5A)
	Bond	
	Indemnity	The Architect and Contractor have separate defense & indemnity obligations to Owner for damages arising from breach of contract, bodily injury and property damage on a comparative fault basis: Meaning, the party is only responsible to the extent its negligence caused the damage. (§32.2)
	Liability	Limited Liability: All liability of Architect, CM/GC and others participating in the IPD Team Risk Pool is limited to the amount of funds available in the pool, except that no limitation of liability is made for the following items: • insurance recoveries; • Fraud or willful misconduct; • claims against subcontractors who are not IPD Risk Pool Team Members; • fines or penalties assessed against an IPD Team Risk Pool Member; or • an IPD Team Risk Pool Member who abandons the Project. (§33.1)
	Termination	Data to be provided when the deliverable is at 100% completion.

Model		6. **Sutter Health's Integrated Agreement for Lean Project Delivery** (IFOA rev. 2009)3 (3-Party Agreement)
Management	**Decision Making**	The overall management of the Project is by a "Core Group" of Owner, Architect, Construction Manager/General Contractor ("CM/GC") and others whom the O/A/C invite to join. The Core Group endeavors to make decisions based on unanimity, but if there is impasse, the Owner may issue directions it believes are in best interest of Project, subject to further dispute resolution. (§4) The Core Group receives senior management support through designated "Senior Management Representatives" who also have responsibility to assist in resolving disputes, as described below. (§4.3, §39.2, §41.8) The Core Group is responsible for assuring that the team prepares a number of required deliverables relating to the management and execution of the Project, including a pull planning system, streamlined communication protocols, project evaluation criteria, Target Value Design plan, built- in quality plan, and similar deliverables meant to implement Lean Construction on the Project and realize Owner value. (§4.7, §8.10, §9.6, §25.2)
	Documents/Record Access	There is a high degree of transparency among the IPD Team. The Core Group has access to all Project Documents, costs models, accounting records and documents used in formulating the EMP. (§3.1, §4.1, §6, §8, §12, §19.3, §30.7) The IPD Team must keep full and detailed accounts with respect to all costs for their respective portions of the project, which is subject to Owner's audit. (§31) Owner's accountants will substantiate Architect's and CM/GC's final costs within 15 days of delivery to the Core Group and before issuance of a final certificate for payment. (§30.4)
	Dispute Resolution	Upon notice of dispute, the parties are required to meet to attempt a resolution. If the parties cannot resolve, then the dispute is submitted to the Core Group for review. If the Core Group cannot agree on the resolution, then the Senior Management Representatives are brought in for a face-to-face meeting to discuss and resolve the matter. If they cannot agree on a resolution, then the Core Group may appoint one or more third-party experts to review the claim and provide a recommendation for resolution. If the dispute has not been resolved after the foregoing process, then any party may require the others to participate in mediation. (§41) If this dispute resolution process fails to resolve a claim, then the parties are free to pursue any legal or equitable remedies (i.e., litigation). (§41.12)
	Warranty	Data to be provided when the deliverable is at 100% completion.
Knowledge/ Resources	**Knowledge/Resources**	As above

Model		**7. HANSON BRIDGETT LLP Standard Multi-party Agreement, V24** (3-Party Agreement)
Background	**Origin/History**	
	Scope of Usage	
Form	**Structure/Components**	
	Parties	
Commercial Provisions	**Target Cost**	Target Cost ("TC") is set during the Conceptualization Phase and is used as a factor in determining the amount of Incentive Compensation Layer ("ICL") paid to the Architect, Contractor, Cost Reimbursable Subcontractors ("CRS"), and Cost Reimbursable Consultants ("CRC") after Final Completion. (§6.2, §8.5) The TC represents the amount that the PMT believes is sufficient to design and construct the project in accordance with the Agreed Program and within the Target Schedule ("TS"). (Ex. A, defn of "Target Cost") The Agreed Program, TC, and TS are part of the Project Objective, which must be unanimously adopted by the PMT during the Conceptualization Phase. If a consensus is not reached, the Agreement will terminate and the Owner will pay the Architect and Contractor their respective "Allowable Costs" for Work performed. (§2.2, §6.2.2.1, §6.2.3) The TC and TS may be adjusted under limited circumstances by Change Order. (§11.1)
	Compensation	The Architect, Contractor, CRSs and CRCs are compensated for "Allowable Costs" during design and construction of the project. Allowable Costs include all direct and indirect costs plus a portion of profit between 0 and X%. The remaining profit is retained in the ICL until Final Completion. (§7.1, §8, §9.1, Ex. H, Ex. I) The ICL is established at contract execution. The ICL is increased or decreased based on the project outcome and is distributed, if at all, at agreed milestones and upon Final Completion based on participating parties' respective percentages for incentive and risk. (§8) Incentives are distributed from the ICL: (1) based on success in meeting the TC; and/or (2) achieving agreed quality/performance criteria. The participating parties' percentage of profit retained in the ICL is at risk if the project is not delivered within the TC and quality/performance criteria. If the TC is exceeded, the ICL will be used to cover project Allowable Costs until the ICL is exhausted. The Owner is responsible for the remaining Allowable Costs once the ICL is exhausted. In other words, the Architect and Contractor are each putting a percentage of their respective profit at risk but will continue to be paid for all direct and indirect costs through Final Completion of the project. If any ICL funds exist after adjusting for Project cost performance, then it is subject to up or down adjustment based on achievement of project quality/performance goals. (§8.5, §8.6)

Model		7. **HANSON BRIDGETT LLP Standard Multi-party Agreement, V24** (3-Party Agreement)
	Change/Contingency	PMT includes a contingency fund within the Target Cost to fund issues that cannot be fully anticipated when Target Cost is set but not Change Orders. PMT determines use of contingency. Unused contingency becomes part of ICL. (§6.2.2.1.1) Change Orders are used to document changes to the Agreed Program, TC, TS or ICL. Change Orders that adjust the TC are limited to: • Owner-elected scope changes or Owner suspension. • PMT Directive for additional Work that is not reasonably necessary to meet the intent of the Project • Objective or elimination of Work necessary to meet the Project Objective, and the TC or TS are affected. • Owner's Directive to the extent it increases the TC or impacts the TS. • Unforeseen & Differing Site Conditions or changes in laws/regulations. (§11) Change Orders that adjust the TS include the above categories and also include "Adverse Weather" and "Force Majeure." (§11.1.2) All Change Order Requests are submitted to, and evaluated by, the PMT. If the PMT does not reach a consensus, the matter will be determined by the Senior Management Representatives. (§11.2)
Risk Allocation Provisions	**Insurance**	The Agreement is drafted with the assumption of an Owner Controlled Insurance Program (OCIP), but is adaptable to a more traditional insurance program. The Insurance Exhibit includes Builder's Risk, E&O, CGL, excess/umbrella, workers comp and auto coverage and there is waiver of subrogation against any other Party on account of loss arising under the insurance maintained. (§12.3, Ex. K)
	Bond	Bonds: Bonding requirements, if any, are left to the Parties to define. (§21.8)
	Indemnity	The Owner, Architect and Contractor have separate defense & indemnity obligations to each other for damages arising from bodily injury and property damage on a comparative fault basis: Meaning, the party is only responsible to the extent its negligence caused the damage. (§12.4)
	Liability	All liability between the parties, CRCs and CRSs is waived except for "Allowed Claims," which are: • Willful default; • Warranty; • Project performance after Final Completion; • Third-party claims; • Owner Directive; • Owner non-payment; • Termination or suspension costs; • Enforcement of indemnity obligations; • Failure to procure proper insurance coverage; and • Enforcement of Dispute Resolution provisions, mechanics liens and stop notices. (§12.1 - 12.2)
	Termination	Data to be provided when the deliverable is at 100% completion.

Model		**7. HANSON BRIDGETT LLP Standard Multi-party Agreement, V24** (3-Party Agreement)
Management	**Decision Making**	Project decisions are made by the Project Management Team ("PMT"), which includes a representative for the Owner, Architect and Contractor. Decisions by the PMT must be unanimous. PMT decisions affecting design, cost, schedule or reallocation of the Work are confirmed through a PMT Directive. (§4.1,§4.3) If the PMT is unable to reach consensus, the issue is referred to the "Senior Management Representative" level, which will first attempt to reach consensus but, if a consensus is not reached, will decide the issue by majority vote. (§4.1.6, §4.2) The Owner can make unilateral decisions by issuing a written "Owner's Directive," but if the decision impacts cost of the project or Contract Time, the Target Cost, Target Schedule, and/or Incentive Compensation Layer will be adjusted. (§4.1.6) There is also a Project Implementation Team ("PIT"), which includes the PMT and consultants, subcontractors and others who may significantly impact the project outcome. The PMT actively seeks and considers input from the PIT. (§5.4)
	Documents/Record Access	The PMT members have access to all project documents, including, Owner Directives, Implementation Documents, the BIM, submittals, etc. (§4.1, §4.3, §5.2, Gen. Cond. §3.1) The Owner may audit the Architect's and Contractor's financial information related to (i) direct costs, profit and overhead calculations provided in establishing the TC; (ii) any application for payment or calculation of amounts owed by Owner; or (iii) subcontractor and consultant costs submitted as Allowable Costs. (§9.13)
	Dispute Resolution	The PMT will first attempt to amicably resolve all disputes between the Parties. If the PMT is unable to resolve the dispute, any Party may request the Senior Management Team ("SMT") to meet with the PMT and attempt to resolve the dispute. (§14.5) If the SMT cannot reach a consensus, a party may request mediation. Mediation is not mandatory. If all Parties agree to mediate, the mediation will be conducted by a third party neutral, who is acceptable to all PMT members. (§14.6)
	Warranty	Data to be provided when the deliverable is at 100% completion.
Knowledge/ Resources	**Knowledge/Resources**	As above

Model		8. Project Alliance Agreement Australian Gov. (NACG PAA)
Background	**Origin/History**	
	Scope of Usage	
Form	**Structure/Components**	
	Parties	Owner and NOP Corporations; duties of the (ALT) as following: Duty to act honestly; • Duty to exercise reasonable care and diligence; • Duty not to make improper use of information; • Duty not to make improper use of position; and • Fiduciary duty. • Alliance Leadership Team (ALT); • Alliance Manager (AM); • Alliance Management Team (AMT); and • Alliance Project Team (APT). Each of these groups includes representatives from all Participant organizations. The formal governance framework enables the alliance to make all project decisions collectively and jointly manage all responsibilities. In order to achieve the purpose of the alliance culture in the project it is very important that all participants guarantee (as much as possible) that each person who has been appointed as a member of the (APT) to remain on this position until the end of the project or at least until the point when the (ALT) and (AMT) decide that they are not required anymore.
Commercial Provisions	**Target Cost**	How and when the project target cost is set; { start of costs and when costs reimbursement stop – completion …..lots of costs for close out so can drag on ?} https://infrastructure.gov.au/infrastructure/ngpd/files/NACG_GN5.pdf guideline on how to develop the target price (90 pages)
	Compensation	The commercial and project objectives of the Participants are aligned through the development of a project-specific Commercial Framework. The standard Commercial Framework model for an alliance provides for the NOPs' remuneration to comprise the following three elements: their actual direct project costs (including, e.g., design and site overhead costs); their nominated fee (which comprises their profit margin plus an amount for corporate overhead); and a pre-agreed share of the 'pain or gain' outcome of the alliance project, which is determined by comparing actual and target performance in both cost and non-cost areas. Profit: all participants profit is linked to the project outcome. If the project is successful then everybody will share profit according to a predetermined ratios, but if the project fails then also everybody will suffer from the consequences.

Model		8. Project Alliance Agreement Australian Gov. (NACG PAA)
	Change/Contingency	Note: a new provision has been included in the latest revision of the alliance contract template issued by the Australian Government in 2015 that state: "If a member of the Alliance project team ceases to be a member without approval, the Project Owner may determine that any costs incurred by the Participants in replacing that member (including any costs incurred in familiarizing the replacement member with the Project) will not be reimbursed under the Agreement." Risk and Contingency Provisions means the provision for all possible Direct Costs associated with the likelihood of risks and opportunities that may arise in carrying out the Works including items such as Latent Conditions, rise and fall events, directions by Client or the Alliance Board in accordance with clause 14.1 (excluding Scope Changes), foreign exchange fluctuations, cost of living increases, costs of coordinating the Works with other works and services undertaken by Client or its contractors (other than the Non-Owner Participants) and the cost of rectifying any Defects.
Risk Allocation Provisions	**Insurance**	Owner takes insurance in joint names of the participants , non prticip, subbies etc – for works / cgl / and prof liability and motor vehicle (just for owner) b.Participant takes constr/ plant insurance, motor , workers comp c.Excesses considered a direct cost and DO NOT change target price
	Bond	Data to be provided when the deliverable is at 100% completion.
	Indemnity	Data to be provided when the deliverable is at 100% completiond
	Liability	clause 5.1 of the NACG PAA provides: (a)... subject to clause 5.3 [contains exceptions, for example, wilful default], the Participants agree that there will be no litigation or arbitration between them arising out of or in connection with this Agreement. The Participants must use their best endeavours to avoid issues arising as between each other and, to the extent an issue arises, must resolve the issue internally...(b)...a failure by a Participant to perform any obligation or to discharge any duty under...this Agreement...does not give rise to any enforceable right or obligation at law or in equity ...6
	Termination	Wilful Default means any of the following: • a deliberate and purposeful act or omission carried out, or real and substantial evidence of a deliberate and purposeful act or omission carried out, with a reckless disregard or calculated disregard for the consequences of the act or omission by a Participant which is a breach of a duty, obligation or Stipulation arising out of this Agreement, or which is a breach of a duty or obligation owed to another Participant however arising; • (an act or omission by a Participant which gives rise to a contravention or cancellation of a Licence where: • it was reasonably foreseeable that the consequences of the act or omission would give rise to a contravention or cancellation of the Licence; and • in the case of a contravention of a Licence only, the Participant fails to immediately take all steps necessary to remedy the contravention of the Licence; • a deliberate and wilful act or omission by a Participant which is a substantial or continuous breach of the Project Management System; • the refusal by the Alliance to grant to the Owner Participant access to the Site or Works as required in accordance with clause 1 5.2; and • failure to pay moneys due under this Agreement within 28 days of being directed to do so in writing by the Alliance Board, but does not include any error of judgment, mistake, act or omission, whether negligent or not, which is made in Good Faith by that Participant or by any director, officer, employee, agent or Subcontractor of that Participant.

Model		8. Project Alliance Agreement Australian Gov. (NACG PAA)
Management	**Decision Making**	Generally unanimous but with some exceptions ;all decisions will: "be made in accordance with the alliance principles developed by the Participants and incorporated in the Project Alliance Agreement (PAA); drive the achievement of all project objectives (as per the Owner's VfM Statement) at a fair cost, where a fair cost is reference to best-in-market pricing; be made in a way that reflects the Participants' behavioral commitments under the PAA (including the Alliance Charter); and fully take into account public sector standards of behavior and protects the public interest". For example, subclause 6.6(b) of the NACG PAA provides that 'no decision can be made by the ALT unless...the decision is unanimous ... '. clause 2 of Schedule14 of the NACG PAA provides that where the ALT is unable to resolve an issue in at least two separate meetings, followed by a meeting of the authorised officers of each participant, the owner must refer the issue to expert determination. HOWEVER NACG PAA empowers the Project Owner to unilaterally determine: the impact of its exercise of so-called "reserved powers" on the target outturn cost (TOC), key result areas (KRAs) and date for practical completion, when these impacts cannot be agreed at Alliance Leadership Team (ALT) level; and the adjustments to be made to the TOC, KRAs and date for practical completion following the occurrence of an adjustment event allowing the Project Owner to ignore the Alliance Commitments wherever it exercises a right or undertakes an obligation in this capacity (as opposed to its other capacity as "Owner Participant" – being a participant in the alliance).
	Documents/Record Access	The Participants must maintain for the Relevant Period, a complete set of: (a) all records which show how the Direct Cost Target was calculated and how any Scope Changes were valued for the purposes of clause 14.2; (b) all purchase orders, invoices, accounts, records and bank statements including for the Project Bank Account (to the extent they relate to the Works) under good and accepted accounting principles showing all of the Direct Costs reasonably and actually incurred in the performance of the Works; and (c) all correspondence, tenders, Subcontracts, minutes of meetings, notes, reports, drawings, as constructed information and all other documentation associated with the Works. The Participant who holds the original of any of the records referred to in clause 18.2 (above) must: (a) keep them for the Relevant Period; and (b) on request, make them available to any other Participant and that Participant's nominated auditor.
	Dispute Resolution	Data to be provided when the deliverable is at 100% completion.
	Warranty	1) After the Date of Practical Completion, the Participants remain responsible for the completion and care of outstanding works and services in respect of the Works including reinstatement works and the rectification of any Defects existing at the Date of Practical Completion or arising during the Defects Correction Period. (2) Defects existing at the Date of Practical Completion or arising during the Defects Correction Period must be promptly rectified to the reasonable satisfaction of the Project Owner before the end of the Defects Correction Period. (3) The Project Owner must reimburse the NOPs any Reimbursable Costs reasonably and actually incurred by the NOPs in undertaking their responsibilities for the care of the Works, rectifying those Defects and carrying out reinstatement works under this clause 9.5 in accordance with clause 16.
Knowledge/ Resources	**Knowledge/Resources**	As above

Model		9. Alliance Association of Australasia Model (AAA PAA)
Background	**Origin/History**	The AAA PAA was drafted by a committee of lawyers and alliance advisors experienced in preparing and negotiating PAAs.
	Scope of Usage	
Form	**Structure/Components**	
	Parties	
Commercial Provisions	**Target Cost**	Guaranteed reimbursement of contractor's direct project costs; • an at-risk overhead and profit margin for contractor; and • gain/pain share regime, in which good and poor performance is shared equitably among the parties.
	Compensation	Generally stipulate a reimbursable arrangement for all actual costs for delivering the project with open-book cost accounting, using appointed independent probity auditors with unlimited access to those accounts. The second limb of the contract is the overhead and profit fee for participants, identified and placed 'at-risk' in an agreed manner and subject to a painshare /gainshare arrangement. The target outturn cost (TOC) represents the final cost of the project developed by all PAA parties, including the project owner (PO). The third limb represents the "incentive" aspects of the PAA with the painshare/ gainshare agreement percentages for each participant. If PAA participants deliver the project at a cost that exceeds the TOC then they forfeit part of their overhead and profit to an agreed painsharing/gainshare.
	Change/Contingency	Contingencies: the core team shares one contingency pool. As a result, each member will be encouraged to help other members to avoid any problem, which eventually all participants will benefit from the unused contingencies funds. (a) A scope change (Scope Change) is a direction by Owner Participant under clause 14.1 which amounts to either: • a significant change, amendment or alteration to the Basis For Design And Construction; or • a significant change to the fundamental requirements of the Works. Examples of when a direction by Owner Participant in accordance with clause 14.1 is also a Scope Change are set out in Schedule 9. (b) The Participants acknowledge that it is their expectation that Scope Changes are unlikely to occur during the Term. (c) Where the Alliance Board considers that a direction by Owner Participant under clause 14.1 is a Scope Change, the Alliance Board must, prior to implementation by the Participants of the direction, notify Owner Participant in writing. The Direct Cost Target is fixed and not subject to alteration except in accordance with: • clause 14.3(c)(i) (Scope Change); • clause 21.3(e) (Insurances); • clause 25.3(b) (Suspension costs); or • clause 30.2(b)(i) (Force Majeure), and is inclusive of all Direct Costs and RCP.
Risk Allocation Provisions	**Insurance**	Data to be provided when the deliverable is at 100% completion.
	Bond	Data to be provided when the deliverable is at 100% completion.
	Indemnity	Data to be provided when the deliverable is at 100% completion.

Model		9. Alliance Association of Australasia Model (AAA PAA)
	Liability	No blame – 4.1 - The Participants agree that, subject to the exceptions listed in clause 4.3(Wilful Default) , a failure by a Participant to perform any obligation or to discharge any duty under, or arising out of or in connection with this Agreement, or which is otherwise an obligation to or duty owed to another Participant however arising, does not give rise to any enforceable right or obligation at law or in equity and, to the extent that it does, the other Participants release and discharge that Participant from any consequences at law or in equity for that failure. Saving of certain legal and equitable rights: •Clause 4.1 has no force or effect: • in respect of a Wilful Default by a Participant; • in respect of a Participant's motor vehicle insurer exercising a right of subrogation, to the extent it is permitted to do so, against another Participant; • where a Participant has a right to bring a claim or action under a Statutory Requirement which cannot be excluded as a matter of law by the Participants; • any claims for breach of any Statutory Requirement (including any prosecution brought against a Participant by a Government Agency) in connection with the Works; • in respect of a breach of an obligation to indemnify under this Agreement; or • where this Agreement expressly states that clause 4.1 does not apply.
	Termination	Data to be provided when the deliverable is at 100% completion.
Management	**Decision Making**	All project decisions shall be made by the alliance lead team ALT which must consist of members from all participants. Each member shall cast one equal vote and decisions will only be made in a unanimous way and when all members are present. Therefore, all participants are obligated to always be represented in the ALT meetings; each member has to appoint a replacement in case of no attending. Team members shall continue their discussion and debating until reaching a unanimous decision. Both the owner and the NOPs have equal roles in the decision making process. that senior team members are obligated to appoint replacements in case they were not available for meetings.
	Documents/Record Access	Data to be provided when the deliverable is at 100% completion.
	Dispute Resolution	Data to be provided when the deliverable is at 100% completion.
	Warranty	Data to be provided when the deliverable is at 100% completion.
Knowledge/ Resources	**Knowledge/Resources**	As above

APPENDIX E - Local research on benefits of Collaborative Contracting

More specific to Alberta and North America, student Mihai Robu from the University of Calgary, measured the positive impacts of different best practices to the total CAPEX and Project schedule as highlighted in the **Figure 7** below.

The study consisted of a sample of >1,000 projects in the heavy industrial sector across Canada and the USA. The key outcome of the study was to determine how successful were the different best practices in improving the project cost and schedule along the different phases of the projects.
The top 3 best practices to improve COST across the project lifecycle are:

- Partnering Agreement – 11.5%
- Scope definition – 11.2%
- Risk mitigation – 12.2%

With regards to SCHEDULE performance, the top 3 best practices are:

- Change management – 18.4%
- Scope definition – 16.8%
- Risk Assessment – 12.4%

These percentages indicate the average impact on projects if the best practice is implemented individually.

Chart – Cost and Schedule impact of best practices on Heavy Industrial Projects

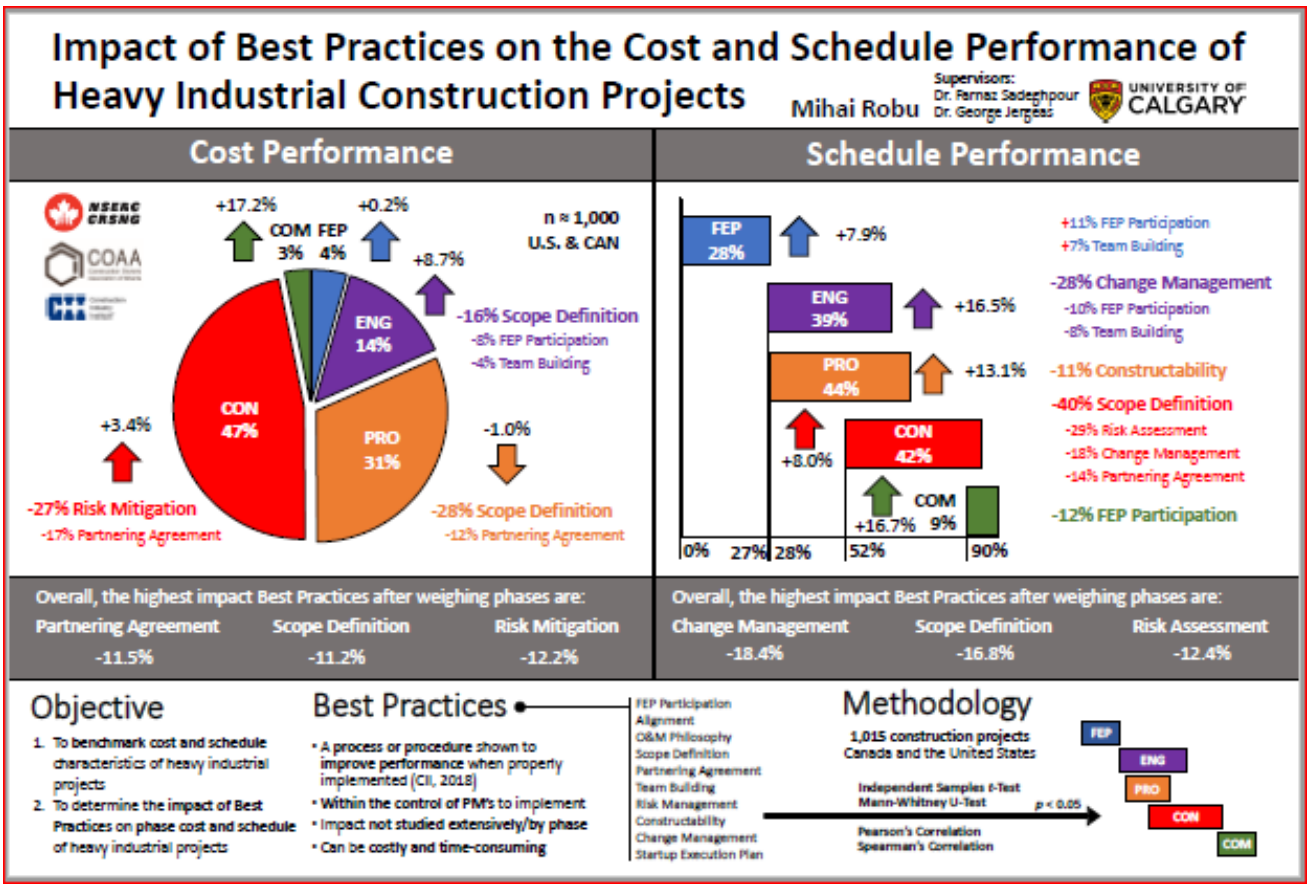


Figure 7 Impact of Best Practices on Cost and Schedule Performance of Heavy Industrial Construction Projects

Note: Percentages indicate the average impact on projects if the best practice is implemented individually.

Collaborative Contracting is a holistic approach that embeds these best practices to ultimately improve the overall project execution.

Along with this study, there are other relevant Collaborative contracting studies from McKinsey in 2017 (McKinsey Global Institute, 2017) and others that create a proof of concept to validate that collaborative contracting, if implemented correctly, can improve the execution of capital projects; however, there are many roadblocks needed to be overcome at the industry, organization and individual level to successfully implement collaborative contracting.

Section 3.3 Barriers to Adoption of this chapter will provide you with a high-level summary of what those roadblocks are and what can be done to overcome those.

APPENDIX F - Potential Project Risks at the outset of Collaboration

A Change in mind shift from traditional contracting arrangements would require Internal buy-in, partner alignment and an investment in training to provide the skills to personnel to be successful in collaborative contracting. This fundamental shift in creating collaboration systems and the associated investment and may not be forthcoming from the parties.
Parties that allocate personnel/ resources at the outset or up to the validation/project viability stage may not get recompensed by a Contracting authority (Owner) or see a return of Investment from their work/inputs into the process.
Potential leaders may be unwilling to stake their reputation on what could be construed as a 'new' contract model as opposed to the 'supposed tried and tested' traditional models.
Parties may deem the exploration of a Collaborative contract by way of Early Contractor involvement as a mere fact-finding mission or exercise to gain gratis consultancy work from experienced Contractors.
Early Contractor involvement may not create the openness to share potential scope increases until a contract is formalized, this could lead to excessive changes / claims and behaviours contrary to the goals and benefits of collaborative contracting. It is important to note that this risk is also prevalent in traditional contracting. Trust is a vital tenant in collaborative contracting.
The potential for accusations or allegations of collusion or anti-competitive practices by 'other' Contractors. This has an overlap with the risk concerning confidentiality of parties' information. Guidance should be sought by legal counsel in advance of formalizing a collaborative contract.
Concerns over one party taking information from the other party and pursuing traditional contracting methods (Competitive/Three bids and a buy). This element of confidentiality and trust should be addressed at the outset of the process.
The alignment of goals or interests may be too difficult to compromise on a grand scale.
Concerns over confidentiality of Technical/Commercial information shared between the parties.