



OLRT LESSONS LEARNED

MITIGATION PLAN/ 11-Resources

MARCH 2021

Issue:

Insufficient functional resources added to the Project at bid time and misunderstanding of the level of skill required for each role resulting in salary expectations for qualified functions not meeting the budgets set.

Findings:

As identified during the lessons learned workshops, resources were a major issue on the Project by not having sufficient functions from an early stage, full time and did not fulfill the requirements of the Prime Agreement. This resulting on the impact of the operational performance.

There were not sufficient resources to monitor, react, respond and not enough time identified to provide a valid response to the Client. Added to this, too many Key Performance Indicators that were unclear and too general, and subject to interpretation creating a misalignment with Client and responsibilities shared between construction and O&M.

The workforce level was not included in the Prime Agreement and Subcontracts but played an important role in the delivery of the product and its performance.

It was also noted that:

- Staffing hired did not have the qualifications or experience of the complexity of the work;
- Specifically, the Quality Management Team had limited construction experience with no systems background and no full time Quality Manager;
- The market did not have the skill set available in their workers and resources;
- The market was saturated with work and finding the right resources was a challenge;
- Insufficient knowledge, capacity or availability in house to provide the training to reach level of skill required;
- Learning curve was longer than expected to have resources up and running;

Overview:

As a priority, upon negotiating the Prime Agreements, there needs to be implication by the leads of the functions to review the output and level of effort required to perform the scope identified. Resources must be reviewed within our complete organisation structure and secured to manage the

expectations of the Contract. As applicable, flow down and manage our Subcontracts with the same level of resources and requirements added to the Prime Agreement to understand and manage our risk and apply the lessons learned since we did not apply them from Canada Line nor Trillium on this issue resulting in an overrun of cost related to staffing the projects.

Consider self performing vs outsourcing, or sharing of the risk profile, based on a total approach (availability of resources, experienced skilled workers, local market knowledge, service proven, capacity to run entirety of the scope) and review the partnership structure Construction and O&M.

Tools & Recommendations:

Tool	Recommendation	Owner
<p>1. Self Performing vs Outsourcing part of the Construction packages and especially the O&M portion of the Work</p>	<ul style="list-style-type: none"> ➤ Name Key Individual(s) to provide a detailed plan that includes: <ul style="list-style-type: none"> ➤ Obtain organisation chart to map out how many resources/functions and skilled workers needed. ➤ Understand the level of commitment (duration of the contract, 1st 6 months..) and skill set for each of the resources mapped out. ➤ Obtain full staffing plan including names and cv's of available functions and technicians with qualifications to run and maintain ➤ Review Budget vs Should Cost vs Market Value to decide commercial decision and expert maintainer to evaluate learning curve of self perform vs outsource 	<ul style="list-style-type: none"> ➤
<p>2. Benefit from existing car design in revenue service to ensure compliance and avoid unknown integration issues</p>	<ul style="list-style-type: none"> ➤ Start identifying skilled workers, from past projects and in market early in the process and provide training of experienced issues and new system as required prior to execution ➤ Access to people early on in the process for training, knowledge transfer and review of the system as a whole from bid stage. Do not wait and incorporate once project is launched. ➤ Issue a true MFL including names, dates, durations, functions, requirements 	<ul style="list-style-type: none"> ➤

<p>3. Knowledge of critical components/systems and interfaces and Budget to pay for it</p>	<ul style="list-style-type: none">➤ Incorporate to Subcontracts resources and skill sets required;➤ Incorporate an option in Subcontracts for installation, testing and training as part of the delivery;➤ Use the Subcontractors knowledge of their product;➤ Budget for this knowledge, skill set and outsourcing to have sufficient resources and experience as part of team and not only inhouse	<p>➤</p>
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