



To: Finance and Intergovernment Committee

From: Jerry W. Dobrovolny, Commissioner / Chief Administrative Officer
Cheryl Nelms, General Manager, Project Delivery

Date: March 31, 2020

Meeting Date: April 15, 2020

Subject: **Capital Projects and Project Delivery**

RECOMMENDATION

That the GVS&DD Board receive for information the report dated March 31, 2020, titled “Capital Projects and Project Delivery”.

EXECUTIVE SUMMARY

In the Fall of 2019, the Board expressed interest in undertaking a review of the way Metro Vancouver delivers major infrastructure projects in order to ensure value for our residents. Responding to capacity needs due to population growth and meeting regulatory requirements have led to a dramatic increase in the scope of Metro Vancouver’s capital project program budget and the scale of projects within this program. The current construction market dynamics coupled with the complex nature of these projects adds additional challenges. In the face of these challenges, Metro Vancouver is undertaking a best practices response, including establishing a Project Delivery department as a Centre of Expertise for the organization on project delivery, engaging a consultant to undertake a high level review of major projects and implementing a forward looking plan.

PURPOSE

To provide information regarding current challenges in the delivery of major infrastructure projects and Metro Vancouver’s response.

BACKGROUND

In the Fall of 2019, the Board expressed interest in directing staff to conduct an independent review of the processes and decision-making related to major infrastructure projects and bring forward recommendations to the Board arising from the review.

PROJECT DELIVERY

Metro Vancouver delivers major infrastructure projects that are necessary for providing the services that our residents rely on every day. The region’s increasing population and the need to anticipate and respond to legislative and regulatory requirements requires significant investments to build, maintain and upgrade our infrastructure.

The delivery of these projects present many challenges, including:

- the unprecedented scale;
- layers of complexity; and,
- market influences.

In light of these challenges, Metro Vancouver is undertaking the following best practices response:

- reorganization, including the creation of a Project Delivery department as a centre of expertise;
- engaging a consultant to undertake a high level review of major projects; and,
- implementing consultant recommendations.

Staff will be providing periodic updates to advisory committees, standing committees, and the Board regarding progress on implementing the recommendations of the consultant.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

CONCLUSION

The delivery of major infrastructure projects to continue to deliver core services to the region presents a multitude of challenges. In the Fall of 2019, the Board expressed interest in directing staff to undertake a review of the processes and decision-making related to major infrastructure projects in order to ensure value for our residents. Metro Vancouver staff have taken the initial steps in responding to this request, including the creation of a new department, engaging a consultant to undertake a high level review of major projects. Staff will be providing periodic updates on progress on implementing consultant recommendations.

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Attachment

Capital Projects and Project Delivery

Jerry Dobrovolny, P.Eng, MBA

COMMISSIONER / CHIEF ADMINISTRATIVE OFFICER

MVRD Board Meeting: April 24, 2020

37132263

Cheryl Nelms, P.Eng., Ph.D.

GM, PROJECT DELIVERY



Board Request

Staff were directed to:

- conduct an independent review of the processes and decision-making related to major infrastructure projects be conducted; and,
- bring forward for Board consideration recommendations arising from the review.

Outline

- Challenges
 - 1. Scale
 - 2. Complexity
 - 3. Market Influences
- Best Practices Response
 - 1. Re-organization
 - 2. Independent high level review by KPMG of major projects
 - 3. Response to KPMG's strategic recommendations

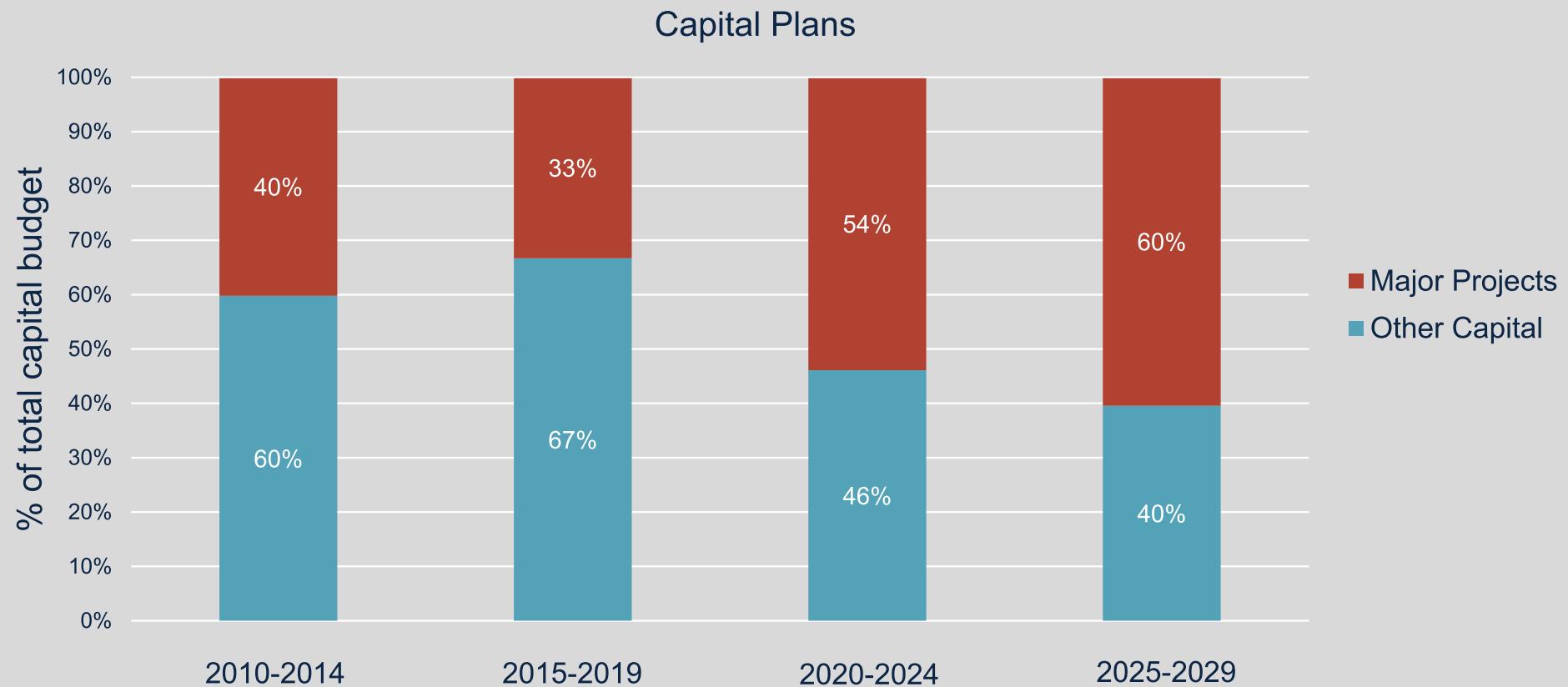


Challenge 1: Scale



Challenge 1: Scale

Major Capital Projects as Percentage of Plans



Challenge 2: Complexity



Challenge 2: Complexity

- Contract structures
- Environmental requirements
- Stakeholder involvement
- Funding approaches
- Regulatory requirements
- Community benefits
- Indigenous partnerships



Challenge 3: Market Influences



The screenshot shows the Vancouver Sun website. The top navigation bar includes categories like NEWS, BUSINESS, SPORTS, ARTS & LIFE, HOMES, TRAVEL, OBITUS, and CLASSIFIEDS. Below the navigation is a search bar and a "FEATURED" section with links to "THE REAL SCOOP", "MEDICINE MATTERS", and "THE SEARCH". The main headline is "Pattullo Bridge contract awarded to Fraser Crossing Partners".

Pattullo Bridge contract awarded to Fraser Crossing Partners

According to an order in council, the B.C. Transportation Financing Authority can sign agreements with Fraser Crossing

Business About YVR

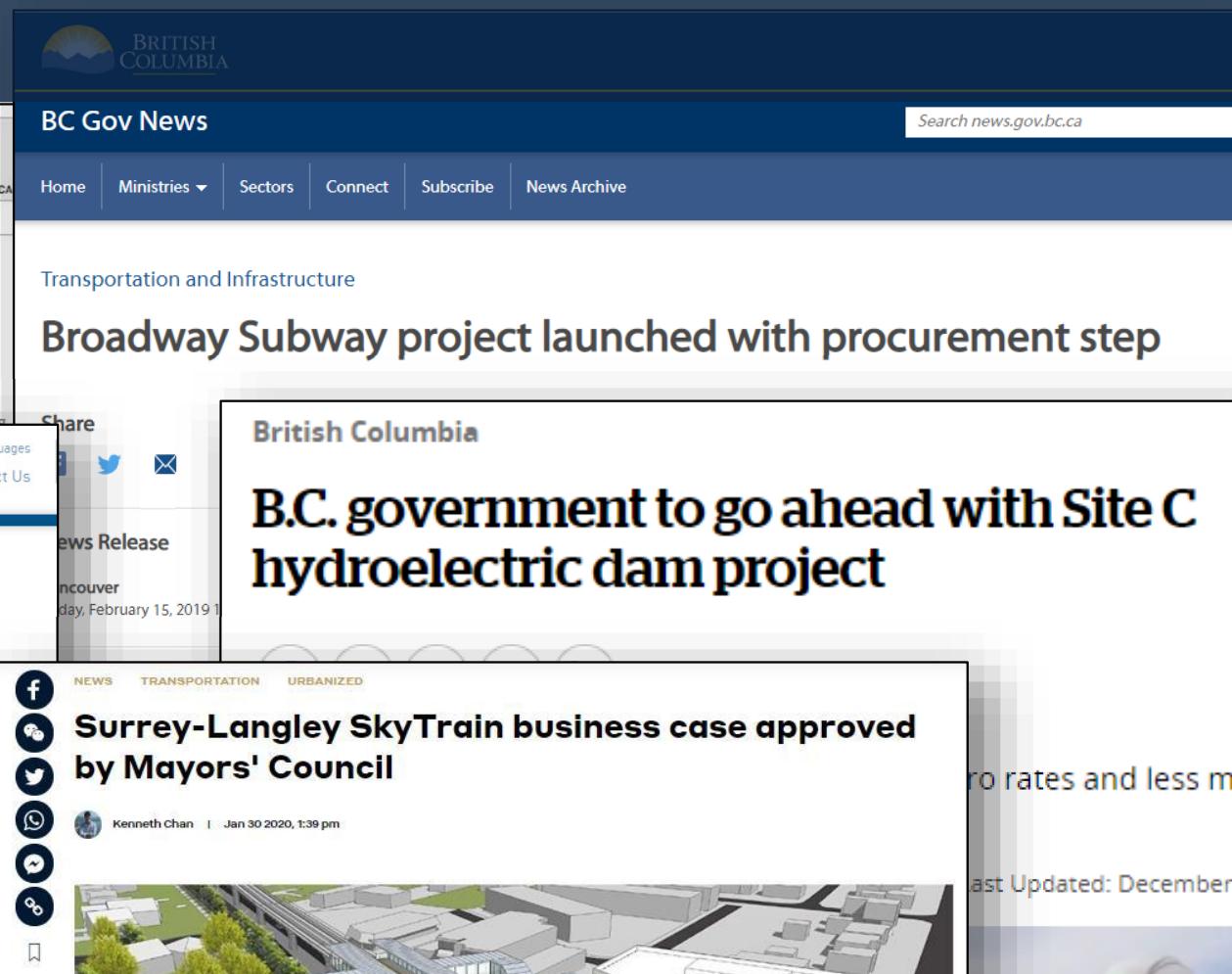
中文 Français Other languages

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YVR Breaks Ground on Multi-Year Expansion Projects to Further its Position as a World-Class Connecting Hub and Strong Economic Generator for British Columbia

June 14, 2018 • Richmond, B.C.

YVR investing \$9.1 billion into the airport under its 20-year



The screenshot shows the BC Gov News website. The top navigation bar includes links to Home, Ministries, Sectors, Connect, Subscribe, and News Archive. The main headline is "Broadway Subway project launched with procurement step". Below the headline is a "British Columbia" news item: "B.C. government to go ahead with Site C hydroelectric dam project". The bottom news item is "Surrey-Langley SkyTrain business case approved by Mayors' Council".

Challenge 3: Market Influences

Metro Vancouver Region Projects:

- Broadway Extension
- Roberts Bank Terminal 2
- Vancouver International Airport Upgrades
- Surrey Langley SkyTrain
- Pattullo Bridge Replacement
- North Shore Wastewater Treatment Plant
- Annacis Island Wastewater Treatment Plant Expansion
- George Massey Tunnel Replacement Project

Source: Top100Projects.ca/2019



Best Practices Response



Best Practices Response 1: Re-organization

Pre-2012 Organizational Structure

Policy and Planning

Solid Waste

Water

Liquid Waste

Operations and Maintenance

Solid Waste

Water

Liquid Waste

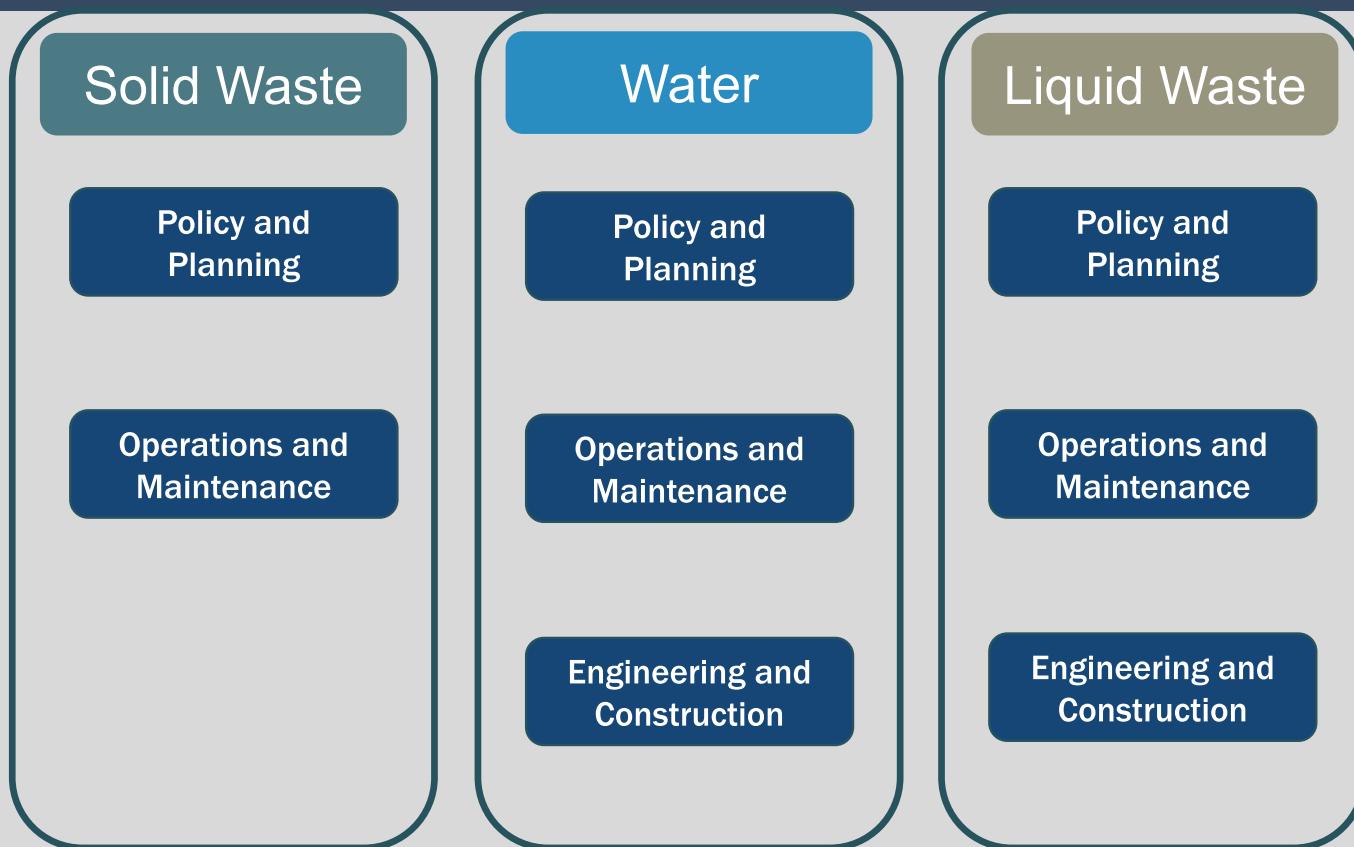
Engineering and Construction

Water

Liquid Waste

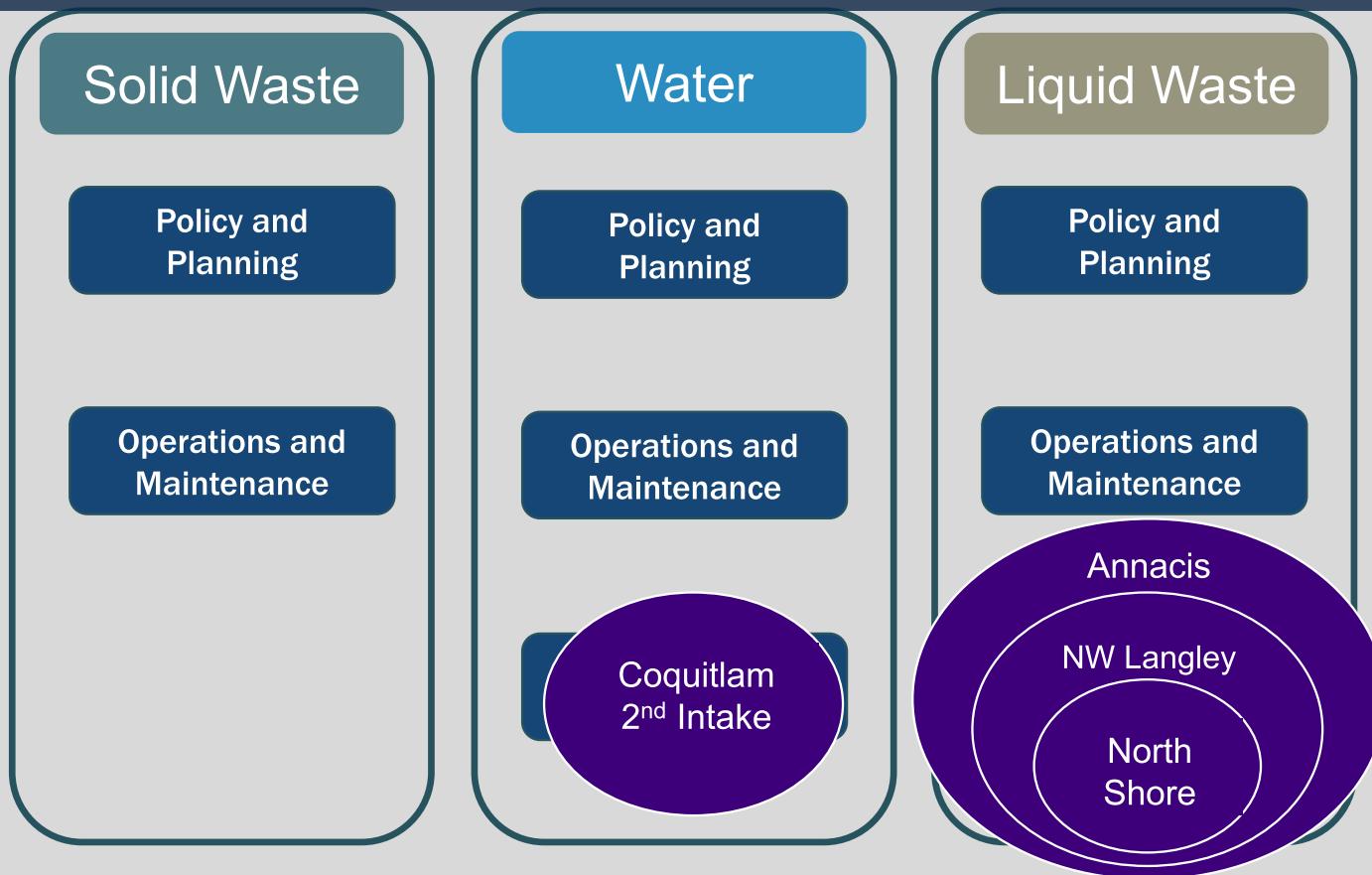
Best Practices Response 1: Re-organization

2012-2019 Organizational Structure



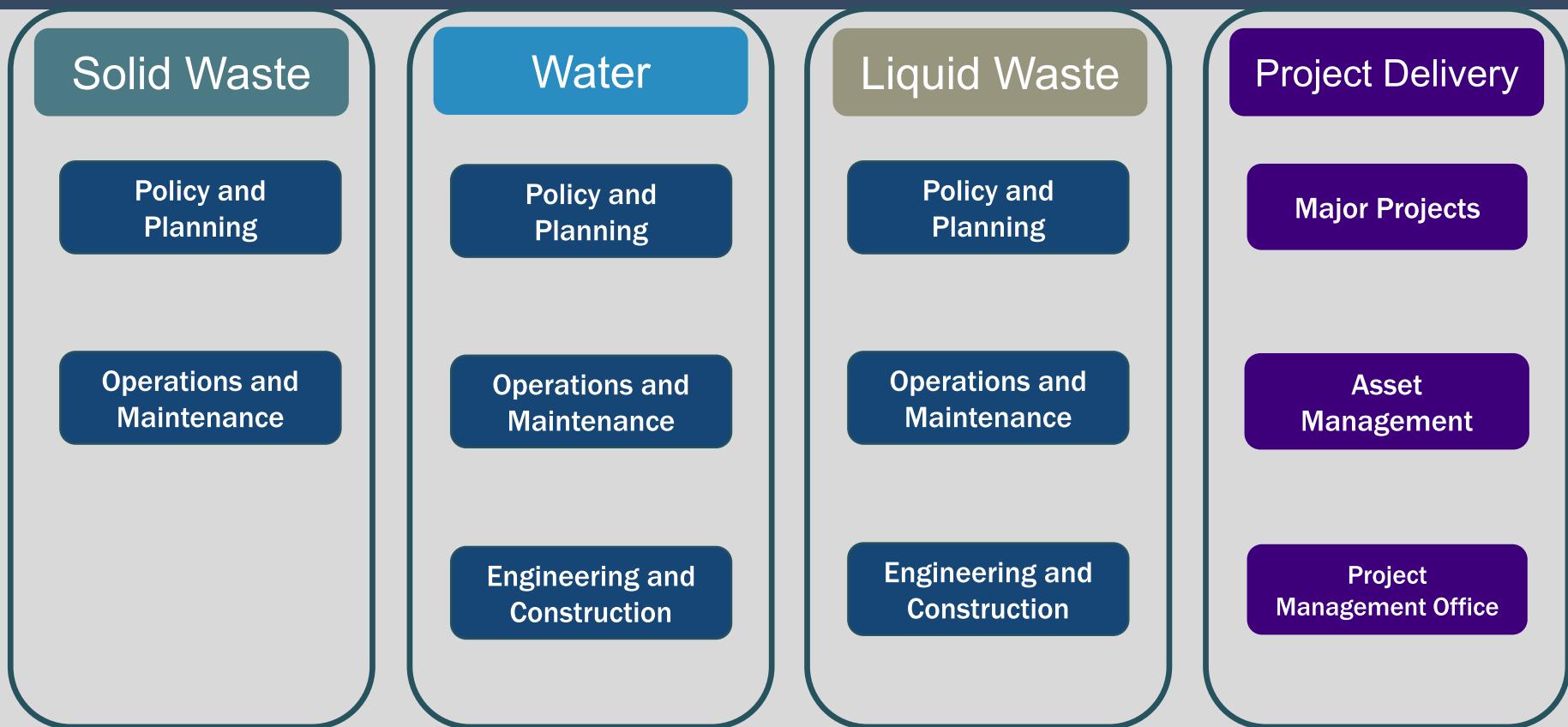
Best Practices Response 1: Re-organization

2012-2019 Organizational Structure



Best Practices Response 1: Re-organization

2020 Organizational Structure



Best Practices Response 1: Re-organization

Project
Management
Office Centre of
Expertise

Major Projects
Delivery

Asset
Management

Best Practices Response 1: Re-organization

Functions of a Centre of Expertise

Project Management Framework

Policy, Processes and Procedures, Standards and Controls

Quality Assurance

Quality Assurance and Control, Monitoring, and Training

Asset Management

Asset Management Strategy and Plan, Policy, Processes and Procedures, Standards, Corporate Reporting

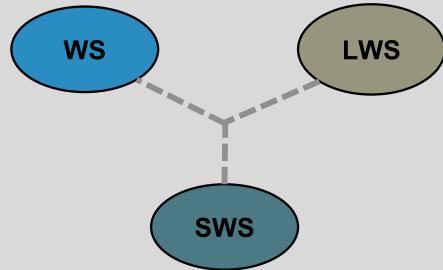
Project Delivery

Project Management of Major Complex Projects

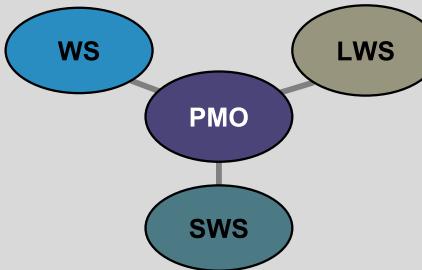
Best Practices Response 1: Re-organization

Project Management Models

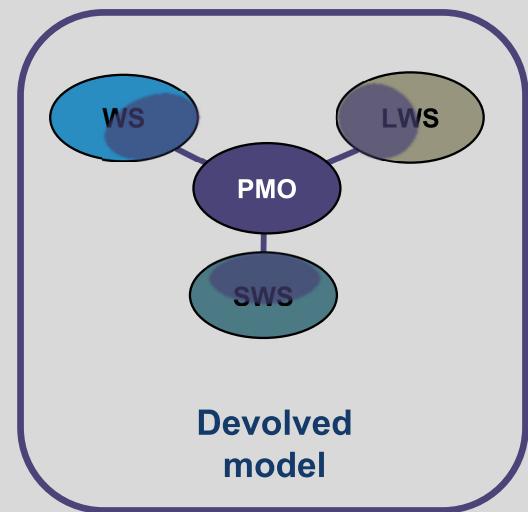
Increasing Project / Department Autonomy



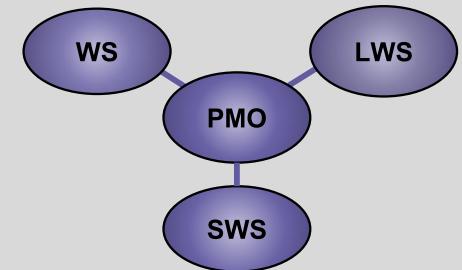
Decentralized model



Influencing model



Devolved model



Centralized model

Increasing Centralization of Control

Best Practices Response 2: Independent Review

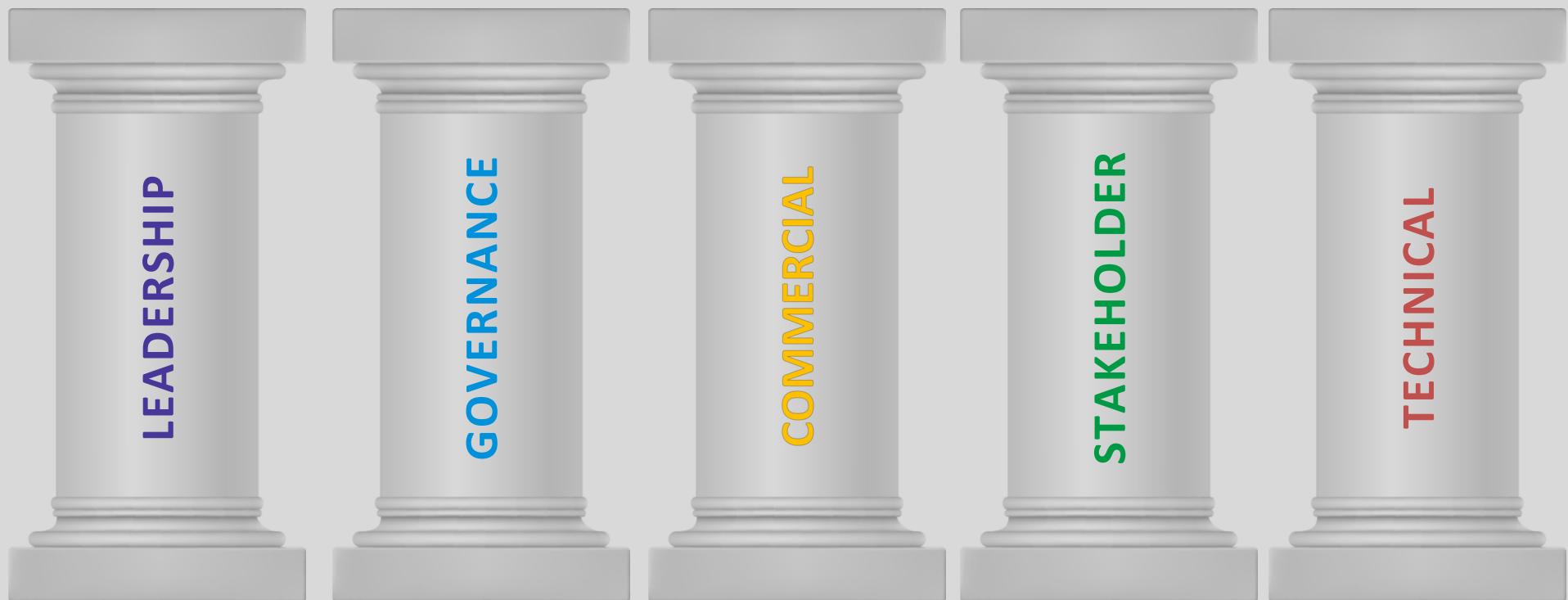
KPMG Approach to Project Delivery

Key steps:

- Document review: key documents including reports from major projects
- Interviews: key project personnel involved in the delivery of major projects and programs
- Focus Group: validation and review of findings with General Manager working group

Best Practices Response 2: Independent Review

Best Practice Project Delivery Framework - KPMG



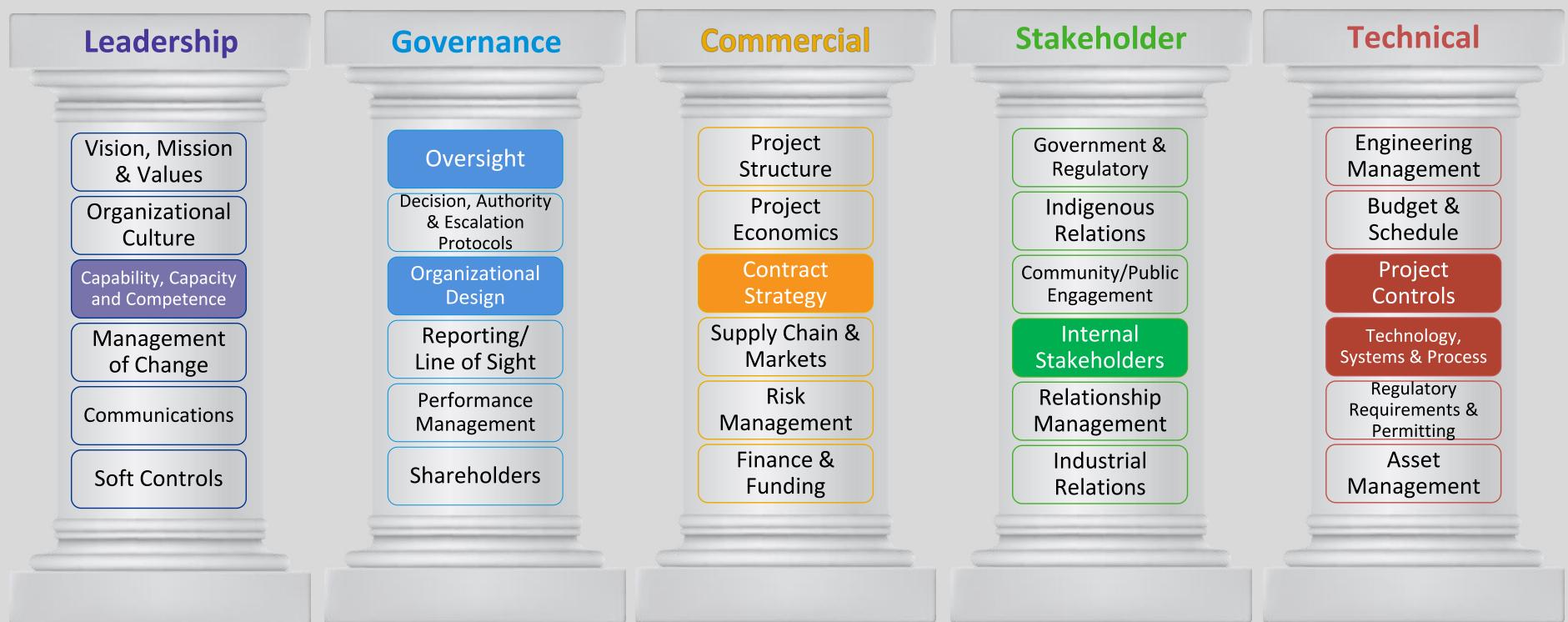
Best Practices Response 2: Independent Review

The 5 Pillar Framework



Best Practices Response 2: Independent Review

Strategic Areas of Opportunity



Best Practices Response 3: Response to Recommendations

Next Steps

Source:
KPMG

COVID-19 Response

Next Steps

- \$1.7 Billion in work underway
- Over 40 claims received to date
- Coordinated approach to address risk
- Working with the Province and industry on COVID response
- Scenario analysis is currently being conducted to identify the range of potential COVID-19 financial impacts on Metro Vancouver projects

Discussion





RECOMMENDATION

That the GVS&DD/GVWD Board receive for information the report dated September 18, 2020, titled "Capital Infrastructure Project Governance".

EXECUTIVE SUMMARY

In the Fall of 2019, the Board expressed interest in undertaking a review of Metro Vancouver's project delivery practices for major infrastructure in order to ensure value for our residents. An independent consultant, KPMG, conducted a high level review of current Metro Vancouver practices and recommended seven strategic areas of opportunity going forward. These recommendations were reported to the Committee and Board in April, 2020. At its meeting held September 11, 2020, the Finance and Intergovernment Committee received an update on progress in implementing the consultant recommendations. A more in-depth discussion of Project Governance was provided by the independent consultant, Dana Hayden, who is a leading expert in this area.

At the request of the Committee, a written report has been provided to accompany the presentation to the Board. Written reports will be provided in all future updates going forward. The next update will be provided in November, 2020.

PURPOSE

To provide the Board of Directors with an update on the implementation of KPMG's recommendations regarding the delivery of capital projects at Metro Vancouver.

BACKGROUND

In early 2020, an independent consultant undertook a high level review of Metro Vancouver practices related to project delivery. Strategic areas of opportunity were identified within KPMG's five pillars of Project Delivery:

1. Leadership
 2. Governance
 3. Commercial
 4. Stakeholder
 5. Technical

CAPITAL INFRASTRUCTURE PROJECT GOVERNANCE

At its meeting held September 11, 2020, the Finance and Intergovernment Committee received an update on progress in implementing the consultant recommendations within the five pillar framework (Attachment). Since the review by KPMG was carried out, progress has been made in the following areas:

- Staffing needs identified and key project leaders hired (*Leadership*)
- Contract strategy reviewed and identified opportunities and areas of action (*Commercial*)
- Ongoing change management initiatives with internal staff (*Stakeholder*)
- Improved and standardized reports to track project progress (*Technical*)
- Established consistent approach to COVID claims (*Technical*)
- Improve internal governance structures to create clarity on decision-making authority (*Governance*)
- Review of governance oversight by independent consultant (*Governance*)

Dana Hayden reported on the findings of the review of governance oversight practices. The consultant outlined best practices with respect to capital project governance, the scalability of project oversight, authority and accountability, and the potential need for independent oversight.

Staff continue to implement the recommendations of KPMG. Additionally, the findings of the governance review are being assessed. Any future decisions will be brought to the Board at the appropriate time.

ALTERNATIVES

This is an information report. No alternatives are presented.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

CONCLUSION

In early 2020 the independent consultant, KPMG, conducted a high level review of current Metro Vancouver practices and recommended seven strategic areas of opportunity going forward. At its meeting held September 11, 2020, the Finance and Intergovernment Committee received an update on progress in implementing the consultant recommendations. A more in-depth discussion of Project Governance was provided by the independent consultant, Dana Hayden, who is a leading expert in this area. At the request of the Committee, a written report has been provided to accompany the presentation to the Board. Written reports will be provided in all future updates to the Committee and Board going forward. The next update will be provided in November, 2020.

Attachment:

1. Presentation dated September 11, 2020, titled “Project Delivery Update”



Attachment

Project Delivery Update

Jerry Dobrovolny, P.Eng, MBA

COMMISSIONER / CHIEF
ADMINISTRATIVE OFFICER

Finance and Intergovernment Committee: September 11, 2020

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Cheryl Nelms, P.Eng., Ph.D.

GM, PROJECT DELIVERY

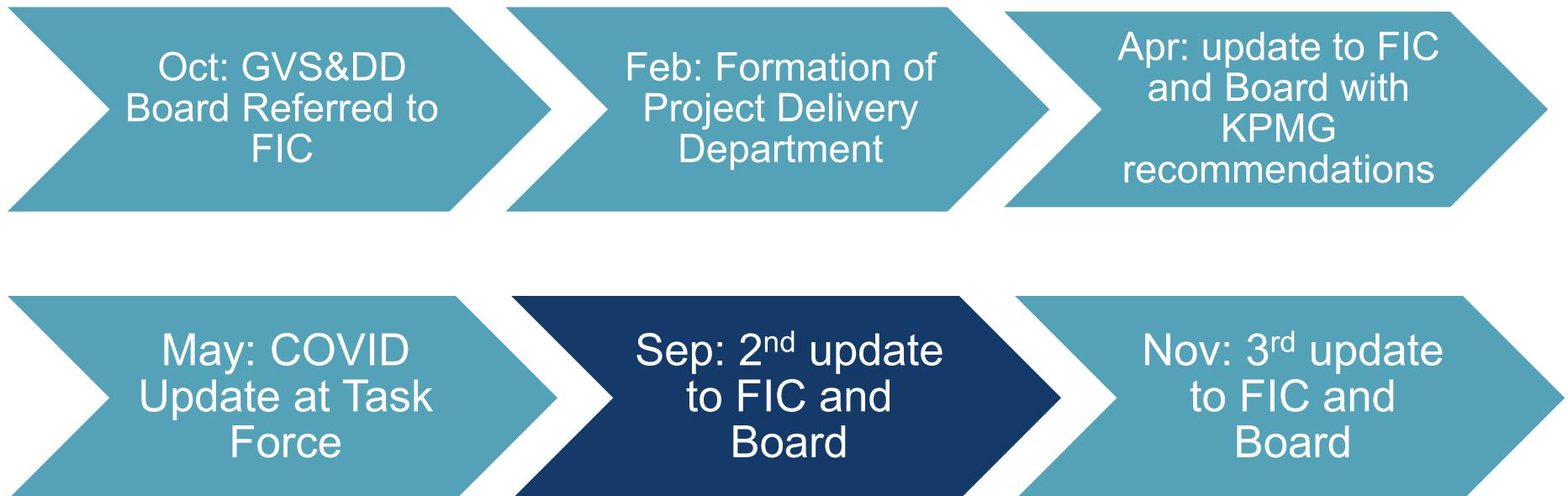
Dana Hayden, M.Sc., C.Dir

INDEPENDENT CONSULTANT



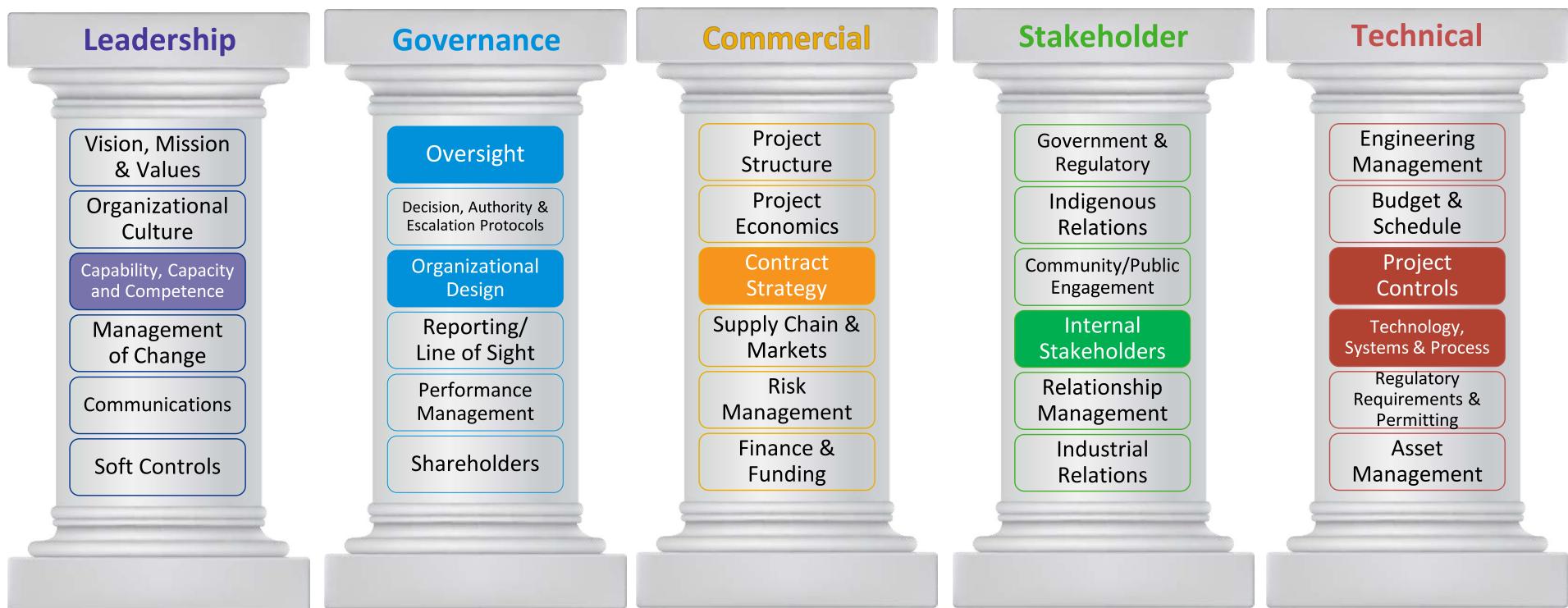
metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

Timeline



Best Practice Response: Independent Review

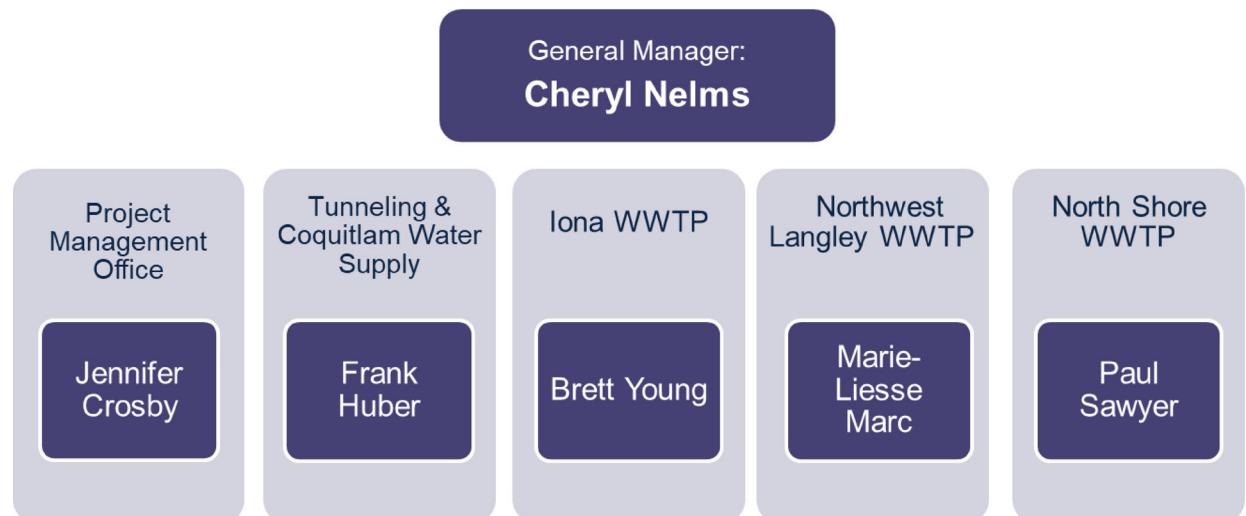
Project Delivery Framework – KPMG Review April, 2020



Leadership

Capability, Capacity and Competence

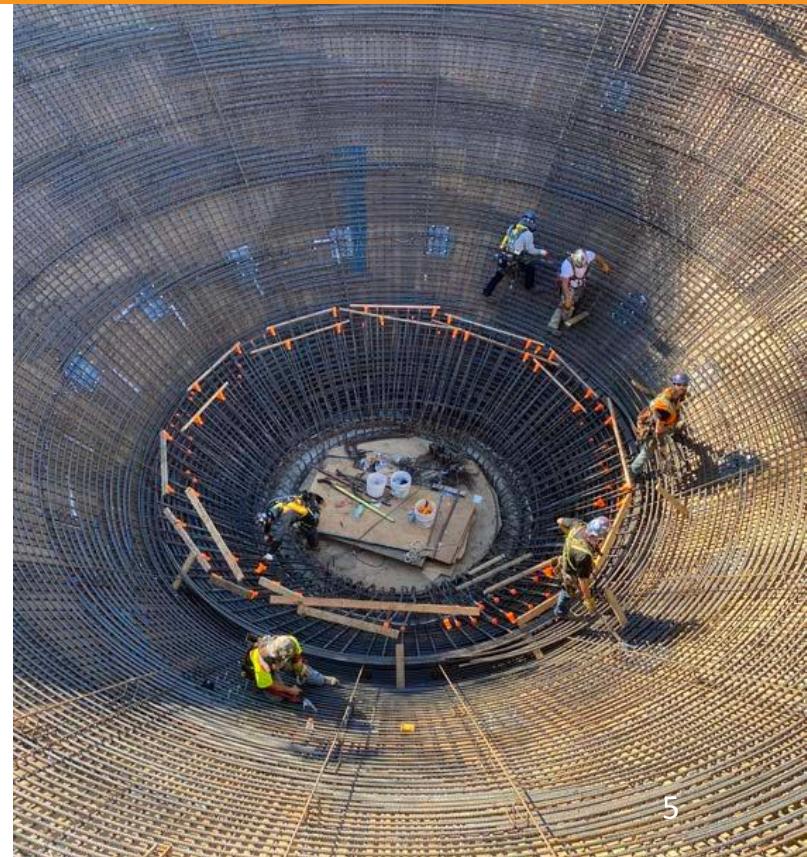
- Staffing needs identified commensurate with the scale and complexity of the key major projects
- Project leaders hired for key major projects with experience in projects with similar scope/complexity



Commercial

Review Contract Strategy

- Identified opportunities to improve contracts
- Improving contract enforcement
- Maximizing benefits to the local economy
- Market sounding conducted to ensure competitive and attractive procurements
- Enhanced ability to rely on past experience with contractors when making procurement decisions



Stakeholder

Internal Stakeholder Agreements

- Ongoing change management initiatives with staff
- Proactive internal communications with staff impacted by new department
- Developed agreements to transition projects to Project Delivery Department



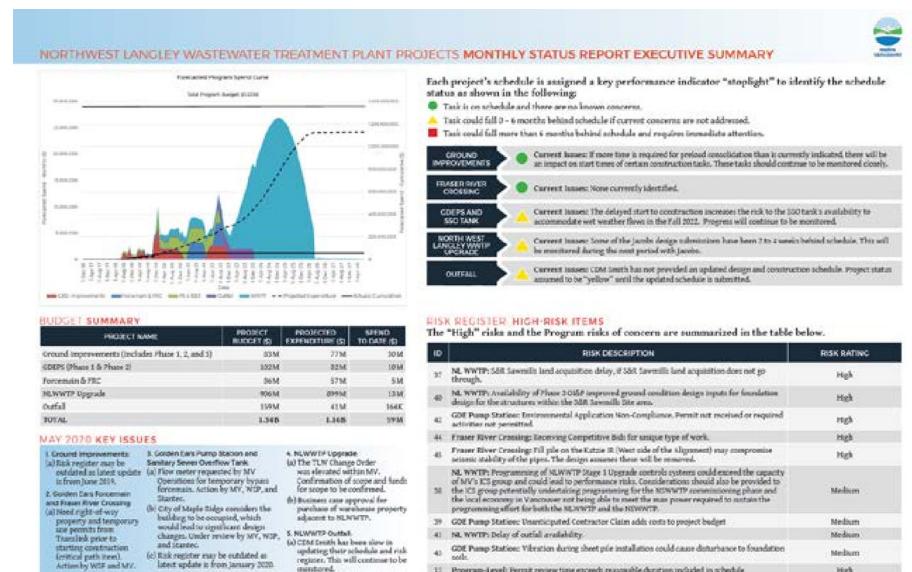
Technical *Project Controls & Technology, Systems and Process*

Project Controls

- Established consistent approach to COVID claims

Technology, Systems & Process

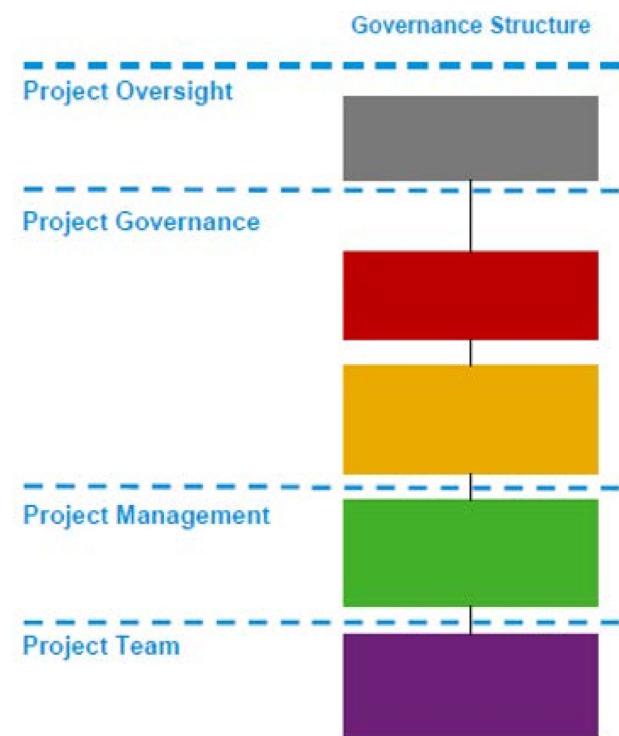
- Improved and standardized monthly reports to track progress



Governance

Oversight and Organizational Design

- Outside expertise (Dana Hayden) engaged to review governance oversight including:
 1. The scalability of project oversight
 2. Authority and accountability at each level of oversight
 3. The potential need for independent oversight
- Review is ongoing – initial recommendations being acted on



Capital Project Governance/Oversight Best Practices

Support management and expenditure decision-making, accountability and transparency by establishing processes to:

- Monitor and control projects
- Set performance measures and track them
- Measure benefits and manage risks
- Ensure a smooth transition to operations
- Translate and incorporate “lessons learned”

1. Scalability of Project Oversight

Internal Governance

- Effective oversight of projects requires regular standardized reports customized to each level of oversight

Sample project dashboard				
Key Performance Indicator		This report	Last report	Comments
cost	Deliver the project within the control budget of \$X	●	●	No unmanageable cost pressures.
schedule	Deliver the project by X date	●	●	The Covid-19 public health emergency is impacting the ability of contractors to retain adequate staff to meet schedule
safety	Deliver the project safely with zero fatalities and a total recordable incident frequency of no more than 1	●	●	Six recordable incidents occurred over the reporting period. Site inspections are ongoing and staff are working with contractors to reinforce safety procedures.
environment	Protect the environment by meeting all legislated environmental requirements and optimizing opportunities for resource recovery and greenhouse gas reduction	●	●	3 minor environmental incidents occurred during the reporting period. Two were unplanned discharges from the lona outfall and 1 was a small (< 1 litre) release of gasoline that was cleaned up immediately.

1. Scalability of Project Oversight (Cont.)

- Standardized reports required
- Standard project review milestones
- New additional reports
- Improved reports

2. Authority and Accountability

- MV to establish consistent Project Charters
 - Consistent levels of authority and accountability between projects
 - Clarity about who can decide what
 - Balance the powers of those accountable with the skills and information required to make decisions
- \$5M contract approval limit should be increased
 - Avoid project delays and facilitate implementation
 - MV staff to come forward with recommendations

3. The potential need for independent oversight

- Complex/high risk/high value projects may also benefit from independent (non-staff) expertise. e.g.:
 - construction contract negotiation
 - stakeholder engagement
 - project business environment
 - construction financing
 - risk management
 - claims arbitration
 - project controls
 - indigenous participation
- Potential benefits and implementation options being developed - will report back

Conclusion & Next Steps

Staff continue to implement recommendations from KPMG review

- New and improved reports
 - Standardized Project Charters to establish authority and accountability to be put in place
 - \$5M contract approval level to be reviewed
 - Independent oversight being assessed
- Staff will report back regularly with progress





Discussion

