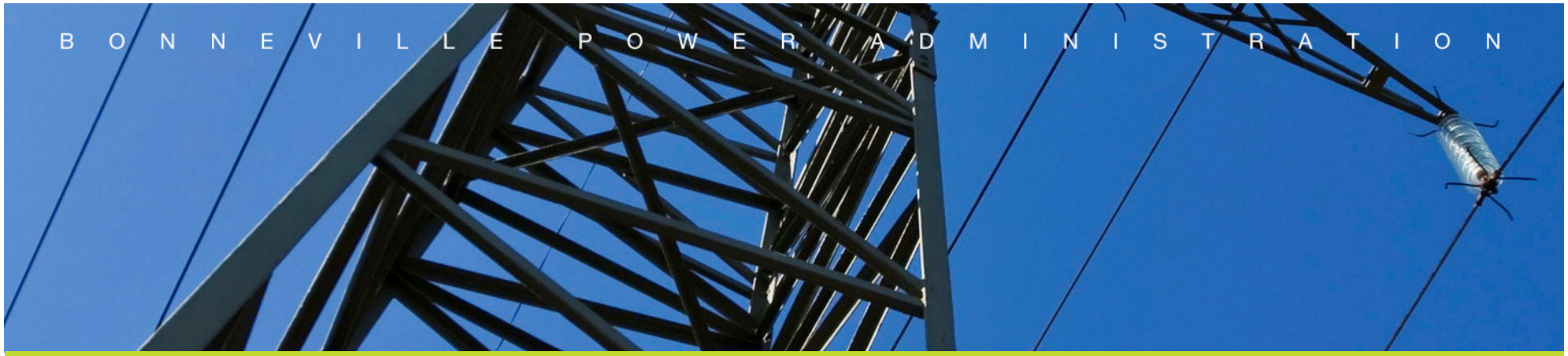
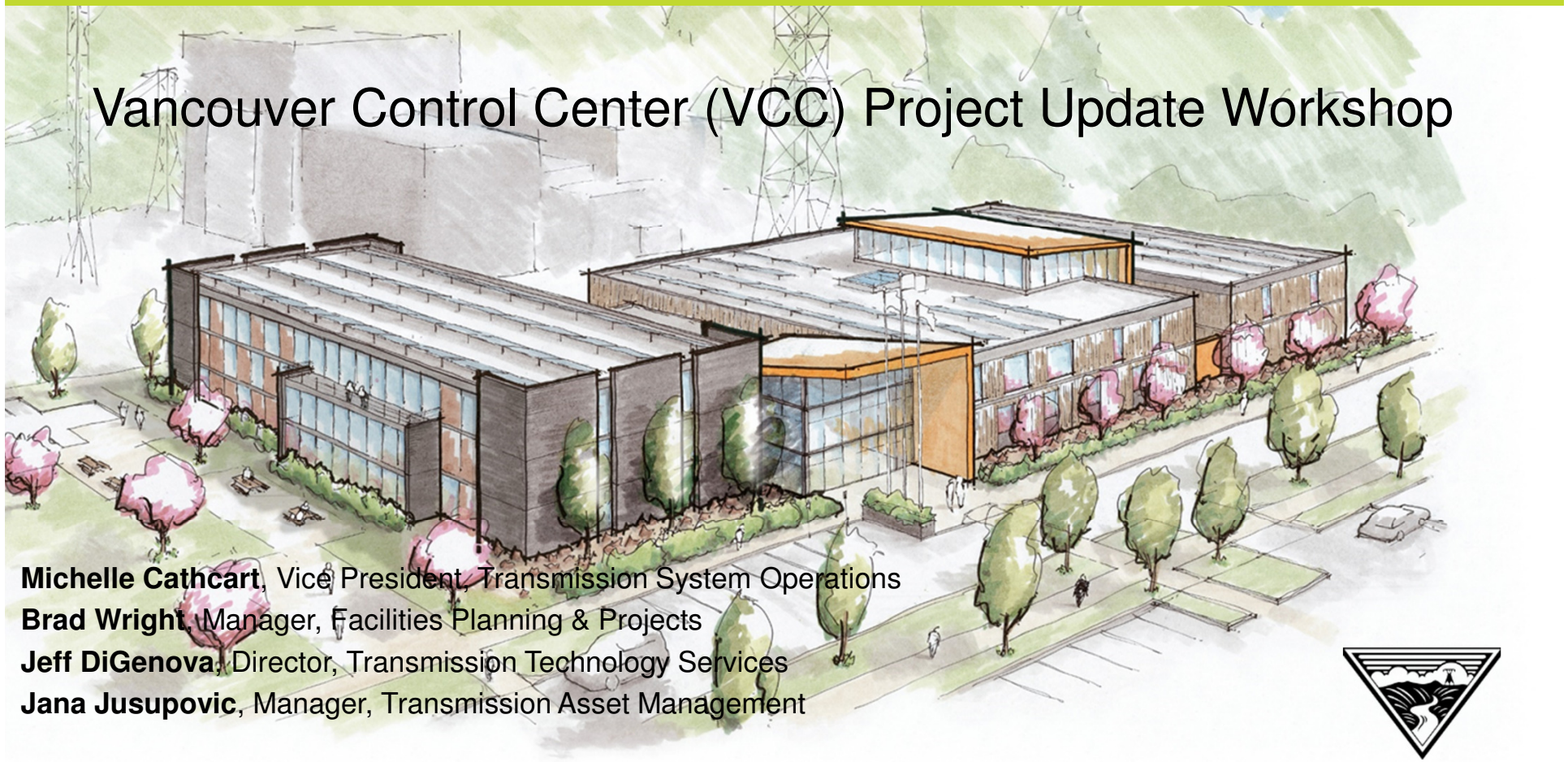


Vancouver Control Center (VCC) Project Update Workshop



Michelle Cathcart, Vice President, Transmission System Operations
Brad Wright, Manager, Facilities Planning & Projects
Jeff DiGenova, Director, Transmission Technology Services
Jana Jusupovic, Manager, Transmission Asset Management

December 8, 2020

Pre-decisional – For Discussion Purposes Only

Agenda

Purpose: Inform customers of the potential VCC Project, the process for approval, and anticipated timelines

1. Introductions

2. Why is the VCC needed?

3. What scope will be in the project?

4. What is the schedule?

5. What will the project cost?

6. Q&A

Why is the VCC Needed?

Business Needs: Dittmer Control Center (DCC) is in an end-of-functional life facility that must be upgraded or replaced to preserve existing functionality and mitigate growing operational risks.

- Improve resiliency against physical risks (seismic, fire, etc.)

- Improve physical security

- Support Grid Mod benefits

- Meet 20 year space needs for staff/equipment

- Lower total cost of ownership

- Lower leased space cost

- Improve workflow and efficiency

- Consolidate data centers

What's in it for Customers? Continuity, resiliency and efficiency are essential for Bonneville to meet customer needs and reliably serve the Pacific NW

What Scope Will Be In the VCC Project?

Three projects compose the overall VCC Bundle

- **Building**
- **Data Center**
- **Telecommunication**

The Building

Data Center Scope

- **Data Center Infrastructure**
  - Operations Technology (OT) Data Center
  - Information Technology (IT) Enterprise Data Center
- **Application Migration**
  - Migration and cutover of OT applications
  - Migration and cutover Enterprise IT applications

Telecommunication Scope

- **Telecommunication Infrastructure**
  - Installation of equipment and networks
  - Microwave tower
  - Fiber optic cabling (inside and out)
- **Migration of Network Circuits (over 1100 live network circuits)**
- **Migration of Telecommunication Applications**

Technology Implementation Strategy

- **Transparent to operations**
- **Sequenced with Lifecycle Replacement**
- **Minimize incremental costs**

What Is The Schedule & Approval Process?

August 2019 – September 2021

(SG0-SG3) – Key Deliverables

- Alternatives selected
- Preliminary engineering valid
- Requirements finalized
- Concept design completed
- Cost estimate -30% to +50%
- NEPA environmental review initiated
- Primary Alternative selected
- Owners Consultant/Progressive Design Builder On boarded
- Business Case Approval for Design
- Project Schedule Approval

September 2021 – July 2023

SG3 – Key Deliverables

- Design Completed
- Activation plan completed
- Guaranteed Maximum Price determined
- Project Schedule updated if needed
- Cost estimates -20% to +30%
- Business Case Approval for Construction

July 2023 – September 2027

SG4 – Key Deliverables

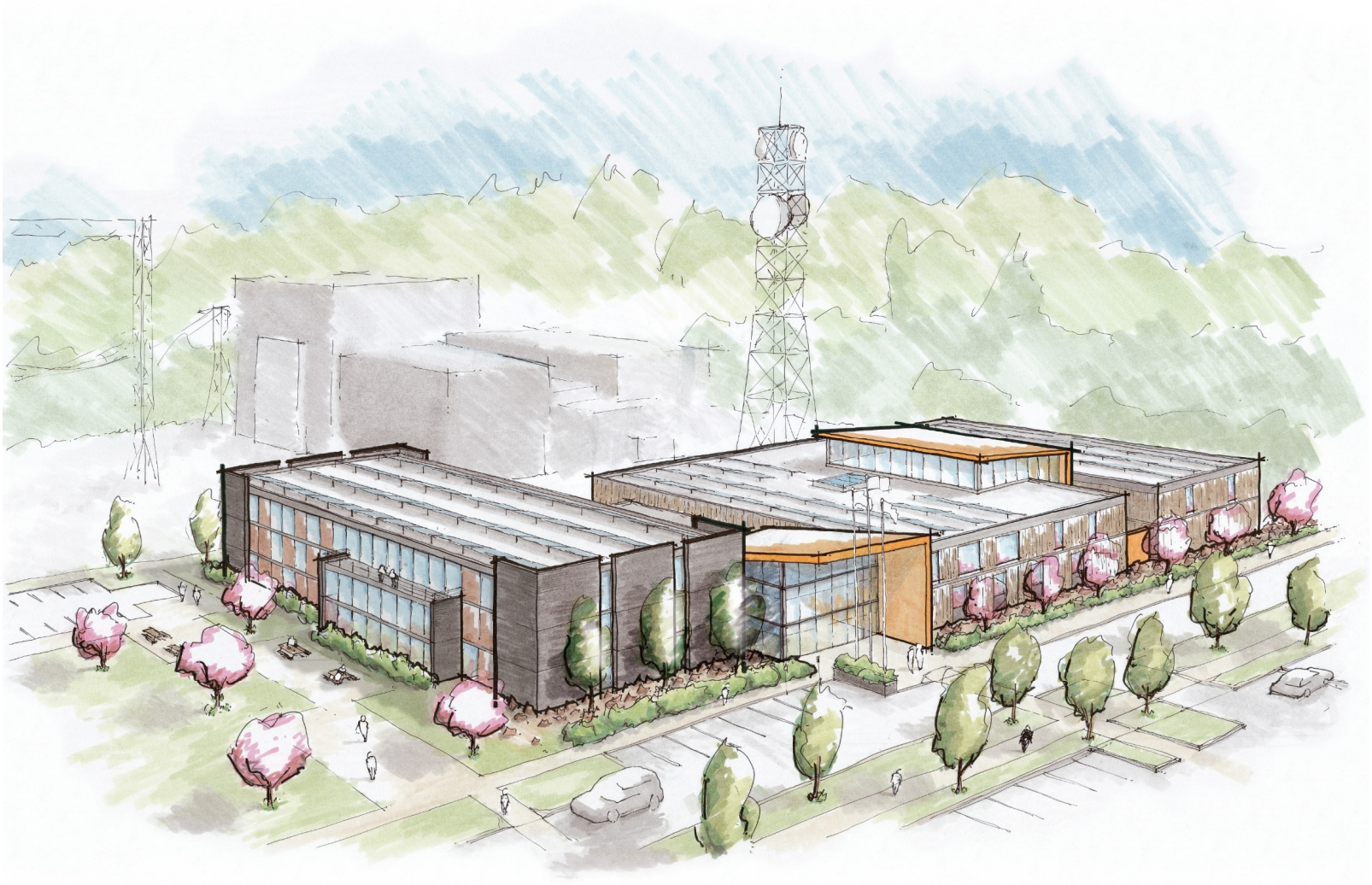
- Site Preparation
- Cost estimates -15% to +20%
- Project Schedule Updated if needed
- VCC Building Completed
- Technical Equipment installation begins

Estimated Project Cost
(IPR Closeout Report, September 2020)

Total Investment	$554.1M
Facility	$186.5M
Transmission and IT	$367.6M
Expense Savings	$1.7M/year (60% lease reduction)
Contingency	20% (SG2), 10% (SG3), 5% (SG4)

										TOTAL
	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027				
Option 'A' - New build VCC Costs	$37.3M	$74.6M	$74.6M	$153.6M	$144.0M	$70M				$554.1M

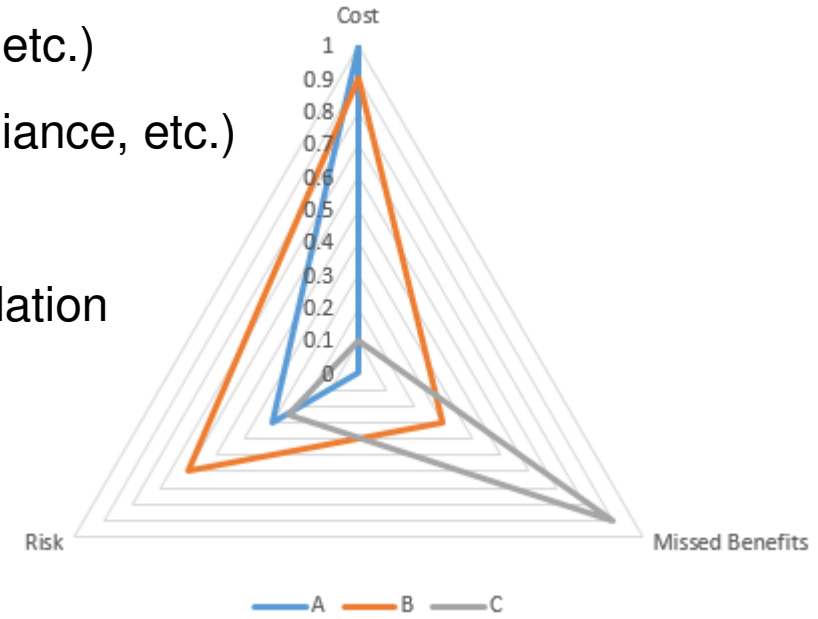
Questions & Answers



Appendix A: Alternatives Analysis

Benefit/Risk Evaluation: 12 BPA sites evaluated in the Portland-Vancouver metropolitan area and eastern Oregon/Washington. Application of common requirements and risks led to the comprehensive assessment of three options: A) Build new, B) renovate Dittmer, and C) status quo with repairs. Assessment criteria categories included the following:

- Health, Safety and Welfare (seismic, fire, etc.)
- Continuity of Operations (reliability, compliance, etc.)
- Security (physical, cyber, etc.)
- Physical Space Requirements & Consolidation
- Lifecycle Cost Assessment
- Project Execution and Delivery
- Value-to-Risk



Preferred Alternative: Criteria analysis shows that a facility replacement yields the maximum long-term benefits, minimizes cost while reducing risk exposure. The next best alternative would be the status quo.