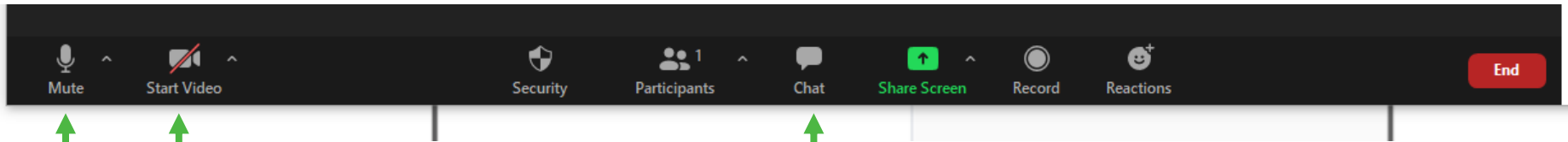


Regional Community Liaison Committee Project Briefing

March 16, 2022

Zoom Meeting Reminders

We'll be using a few basic tools, which you can find at the bottom of the screen



Mute/unmute your mic
& turn your video on/off

Open the chat panel for
questions / feedback

Regional Community Liaison Committee

Action Items Tracking Log: January – December 2021

Item No.	Action Item	Responsibility	Meeting Date	Status / Outcome*
2021-016	Shanna Mason to confirm if public consultation and a comment period is required for the 85 th Ave laydown area.	Shanna Mason	December 8, 2021	Complete. No public consultation and comment period is required for the use of 85th Ave lands as the laydown area is already established, fenced and ready for use.
2021-017	Katrina Kelly to follow up with Mayor Heiberg to confirm names of who attended the emergency response plan meeting	Katrina Kelly to provide information to Dave Conway	December 8, 2021	Complete. Dave Conway provided the information from Katrina to Mayor Heiberg January 11, 2022.
2021-018	Katrina Kelly will confirm that with the criteria associated with the venting windows provided to BC Hydro that the special conditions in the Hudson's Hope area are being considered.	Katrina Kelly to provide information to Dave Conway	December 8, 2021	Complete. Dave Conway provide the information from Katrina to Mayor Heiberg January 11, 2022.

Site C COVID-19 Update

Shanna Mason

Dam Site Construction Update

Chris Waite



Dam Site Construction Update

- **Main Civil Works**
- **Penstocks, Intakes and Spillway**
- **Right Bank Foundation Enhancements**
- **Powerhouse, Turbines and Generators**
- **Balance of Plant**
- **Area E**

Main Civil Works - Approach Channel





Dam Construction

Penstocks, Intakes and Spillway



Penstocks



Intakes



Spillway, Stilling Basin and Headworks





Foundation Enhancement West Stilling Basin

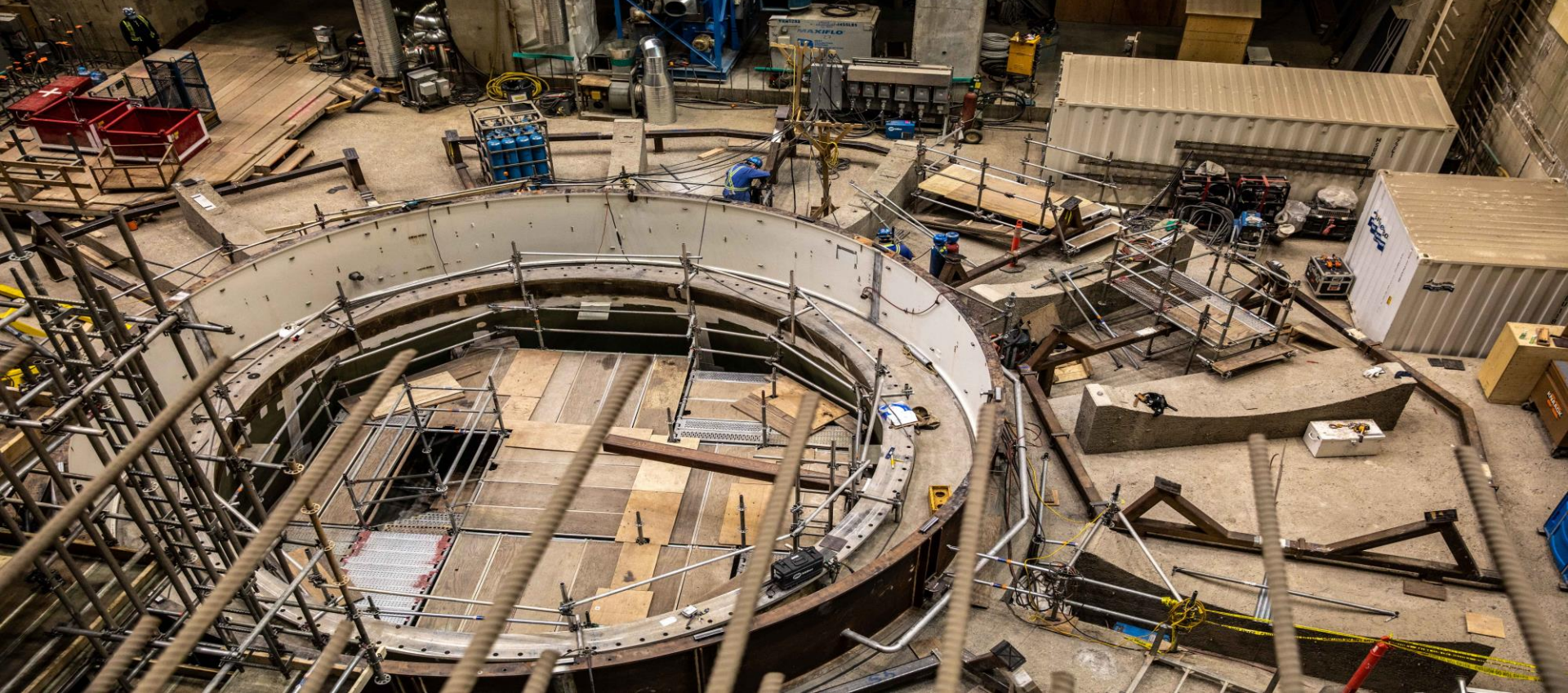


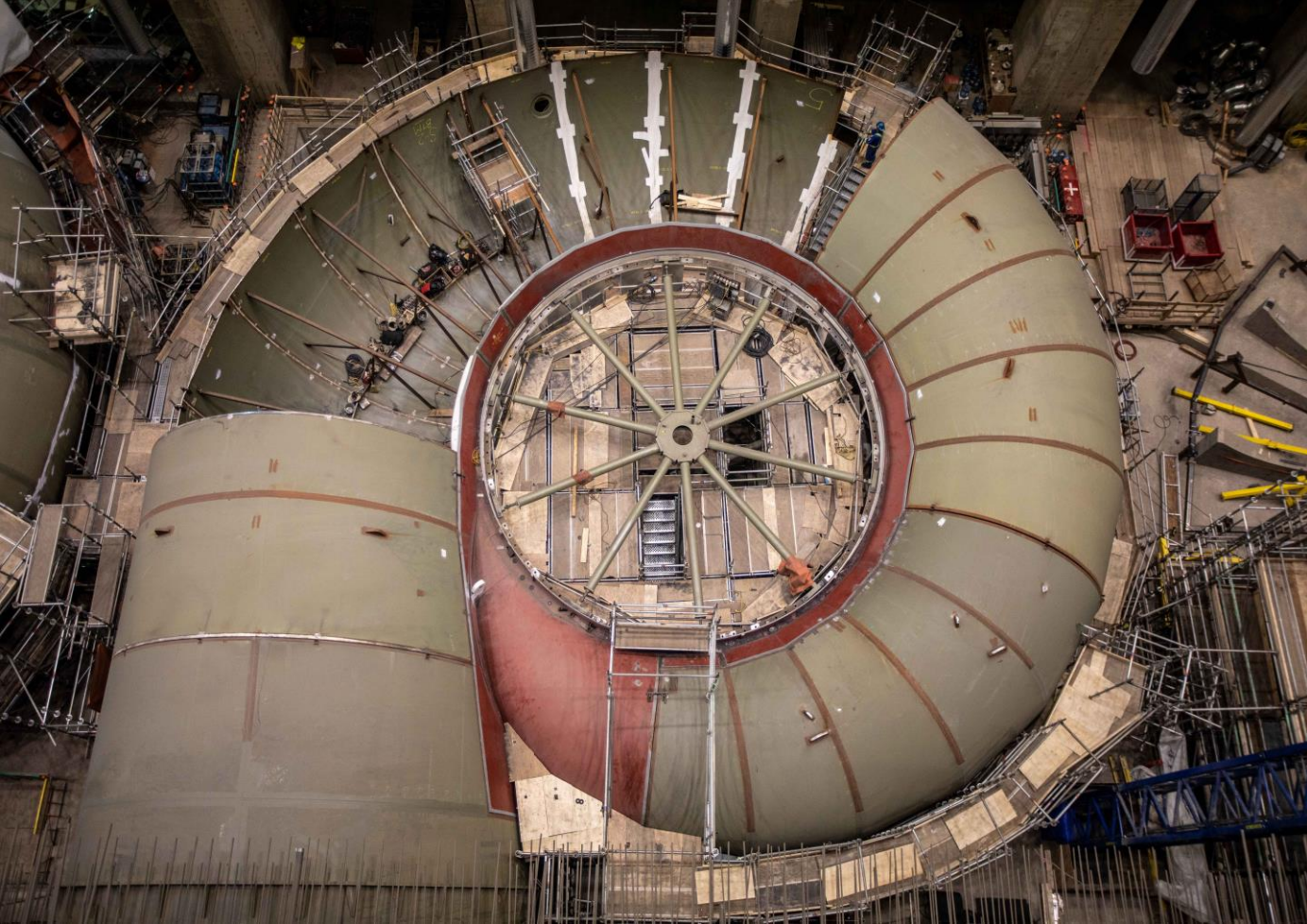
Foundation Pile Drilling

Powerhouse Turbines and Generators Units 6 to 1



Preparing unit 6 for stay ring installation





Unit 5 Scroll Case Assembly



Balance of Plant – Cable Tray and Control Panels

Area E Material Source Update



- Road, including Right-of-Way ~ 63 ha - Crown Land
- Area E Mine Site ~ 55 ha - Crown land that is licensed to BC Rail; BCH also seeking crown land tenure



Stripping is 55% complete

Questions?

BC Hydro
Power smart

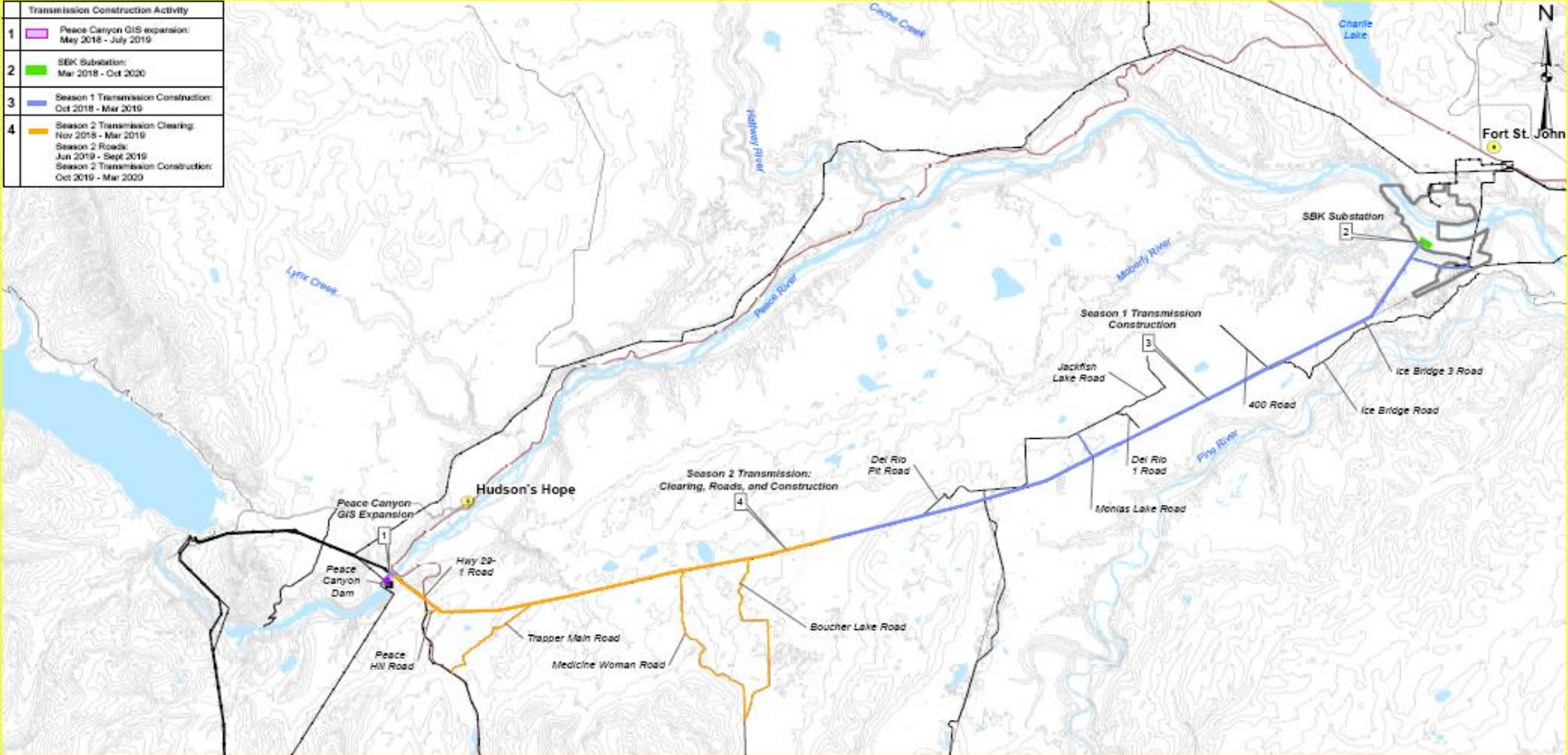
Off Dam Site Construction Update

Matt Drown

Off Dam Site Construction Update

- **Transmission**
- **Highway 29 realignment**
- **Hudson's Hope Shoreline Protection**
- **Portage Mountain**
- **Reservoir Clearing**

Transmission Construction Activity	
1	Peace Canyon GIS expansion: May 2018 - July 2019
2	SBK Substation: Mar 2018 - Oct 2020
3	Season 1 Transmission Construction: Oct 2018 - Mar 2019
4	Season 2 Transmission Clearing: Nov 2018 - Mar 2019 Season 2 Roads: Jan 2019 - Sept 2019 Season 2 Transmission Construction: Oct 2019 - Mar 2020



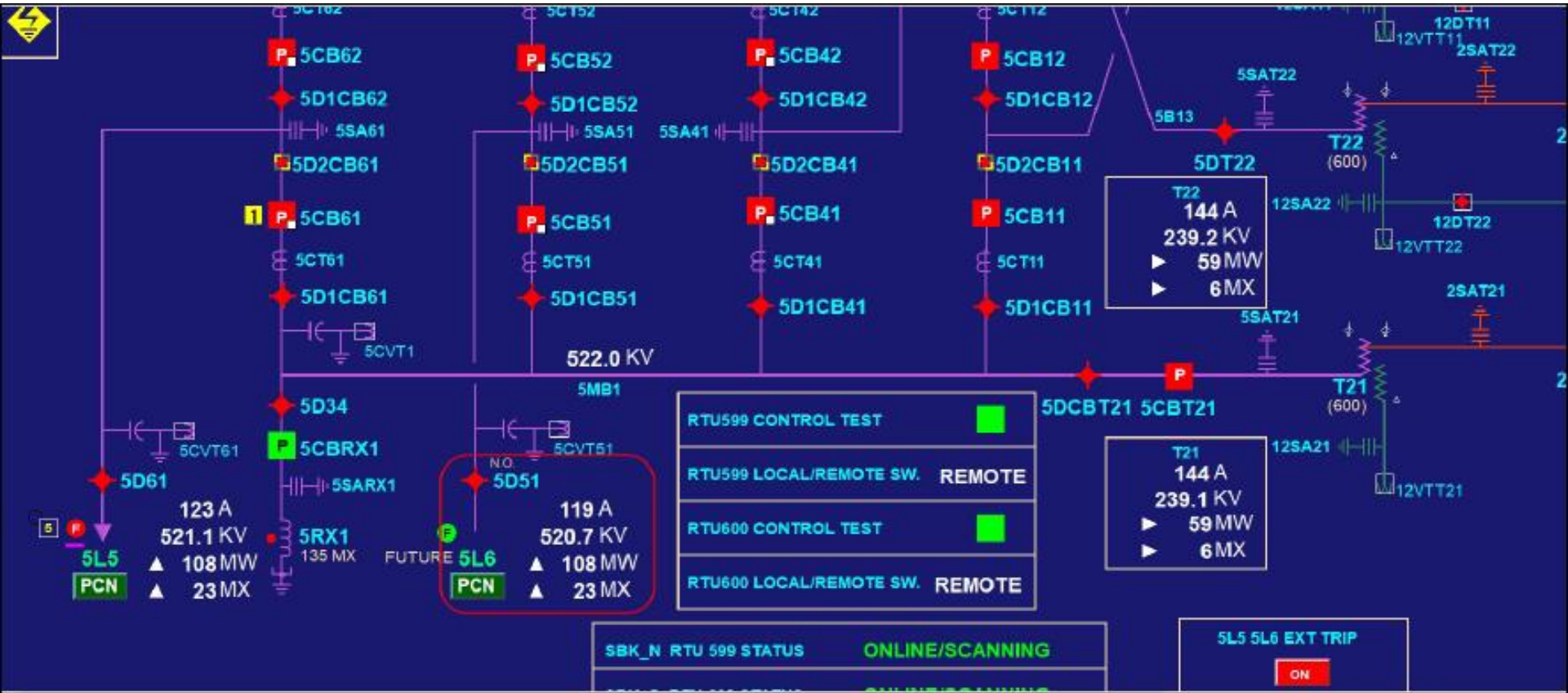


Installing an insulator string on a dead-end tower to connect the conductors to the tower

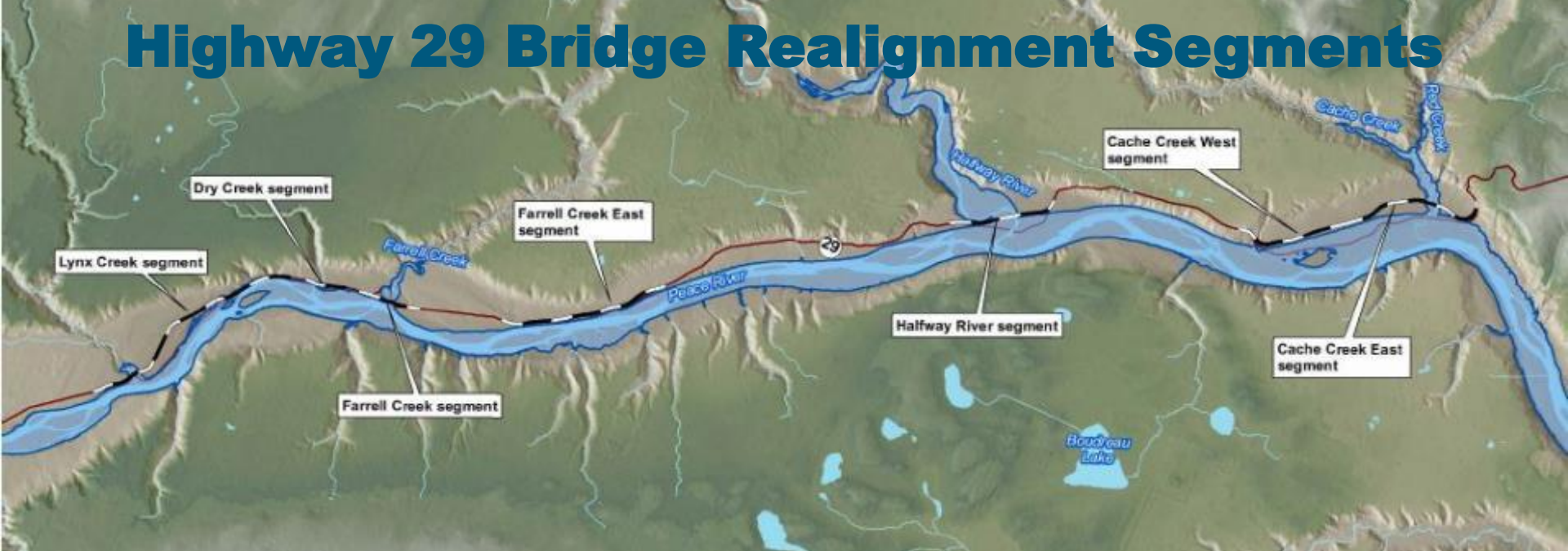
Flying Glass Insulators



SCADA of the Site C Transmission System Energized March 3



Highway 29 Bridge Realignment Segments



Construction Schedule Start to Finish

Lynx Creek – 8.1 km
Dry Creek - 1.4 km
Farrell Creek – 1.9 km
Farrell Creek East – 3.0 km

2019 to 2022
2020 to 2022
2020 to 2022
2021 to 2022

Halfway River – 3.7 km
Cache Creek West – 4.0 km
Cache Creek East – 8.6 km
Highway decommissioning:

2018 to 2022
2018 to 2020
2019 to 2022
2022 to 2023

Cache Creek East Realignment Bridge Steel Girder Placement Complete



Farrell Creek Realignment

Bridge steel girder installation in progress



Dry Creek Realignment



Lynx Creek Realignment





Hudson's Hope Shoreline Protection

Portage Mountain Quarry



Fall/Winter Clearing work: Halfway River to Farrell Creek – Phase 2 Farrell Creek to Peace Canyon



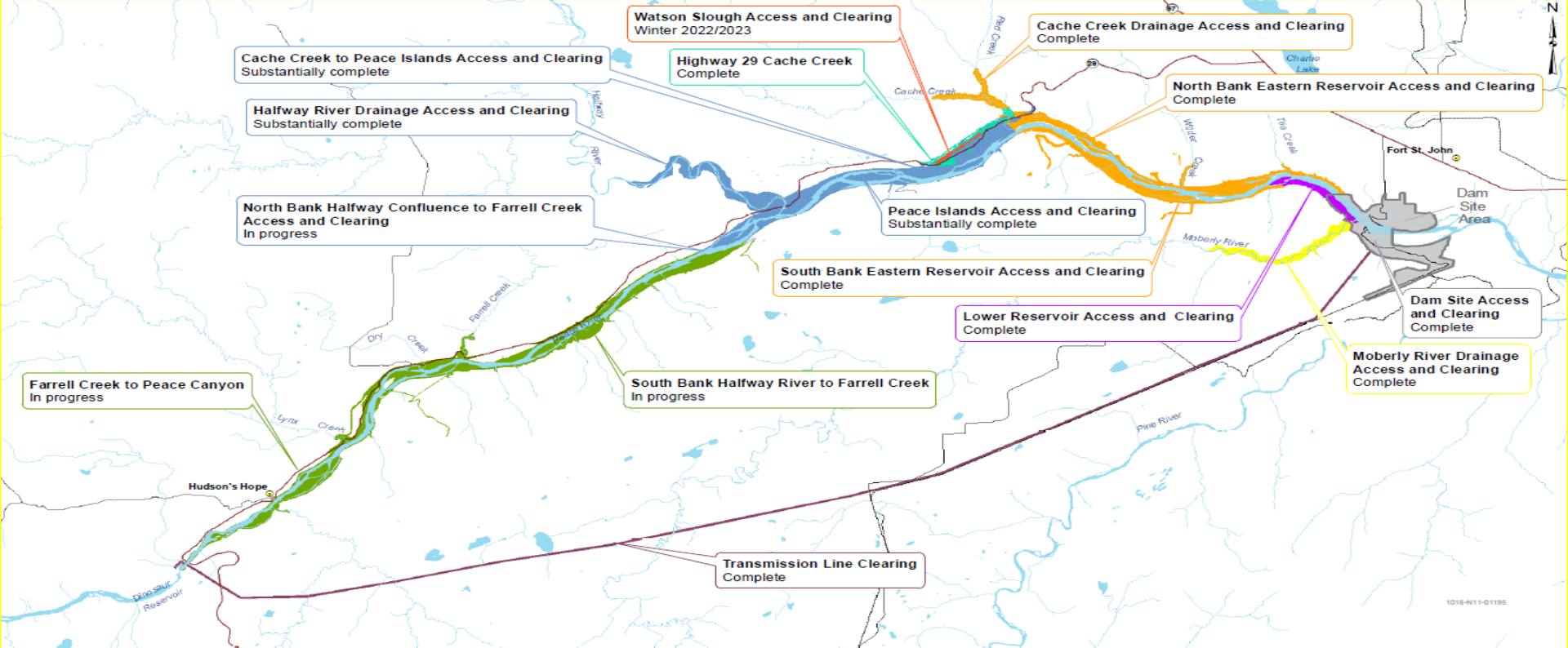
Reservoir Clearing

Facing east



West to Peace Canyon Dam





Farrell Creek to Peace Canyon
In progress

Cache Creek to Peace Islands Access and Clearing
Substantially complete

Halfway River Drainage Access and Clearing
Substantially complete

North Bank Halfway Confluence to Farrell Creek
Access and Clearing
In progress

Watson Slough Access and Clearing
Winter 2022/2023

Highway 29 Cache Creek
Complete

Peace Islands Access and Clearing
Substantially complete

South Bank Eastern Reservoir Access and Clearing
Complete

Lower Reservoir Access and Clearing
Complete

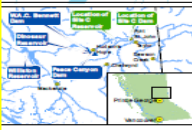
Moberly River Drainage
Access and Clearing
Complete

North Bank Eastern Reservoir Access and Clearing
Complete

Dam Site Access and Clearing
Complete

South Bank Halfway River to Farrell Creek
In progress

Transmission Line Clearing
Complete



Map Notes:
1. Datum: NAD83
2. Projection: UTM Zone 10N
3. Base Data: Province of B.C.

Legend

Lower Reservoir	Watson Slough
Eastern Reservoir	Moberly River Drainage
Hwy 29 Cache Creek	Transmission Line
Middle Reservoir	Dam Site
Western Reservoir	

Notes:
1. Reservoir clearing smelines include wood waste disposal.
2. The remaining Highway 29 realignment clearing areas to be added.
3. Timing is based on:
September 2020 - Start River Diversion
September 2023 - Start Reservoir Filling

1:215,000

BC Hydro

Site C Reservoir Clearing

DATE	Nov 24, 2021	1016-N11-01195	R 1
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Questions?

BC Hydro
Power smart

Fish Habitat Enhancement

Greg Scarborough

Downstream Fish Habitat Offsets - Update

107R

- New channel excavation
- Offset for new temporary fill adjacent to dam
- Construction timing TBD

5th Site

- An additional offset area may be required
- Construction timing TBD

109L Lower

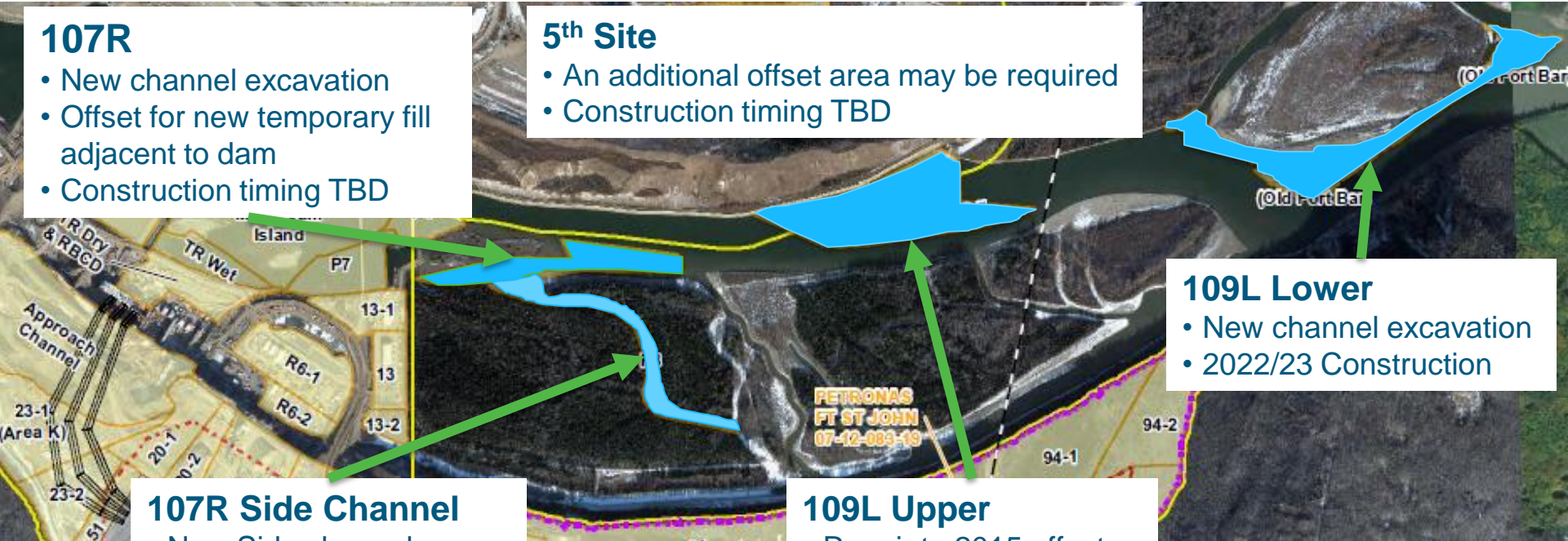
- New channel excavation
- 2022/23 Construction

107R Side Channel

- New Side channel
- Design underway
- Construction timing TBD

109L Upper

- Repair to 2015 offset
- Channel excavation
- 2022/23 Construction



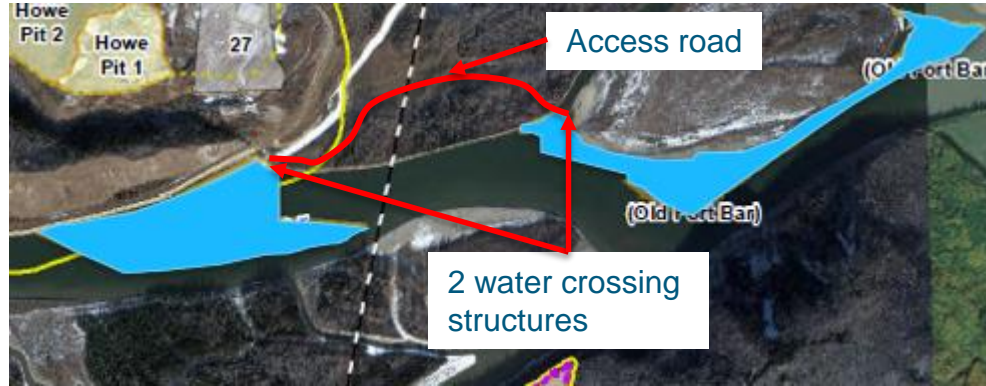
2022/23 Fish Habitat Offsets - Specifics

Scope of work from 2019 Update



This scope removed due to geotechnical concerns

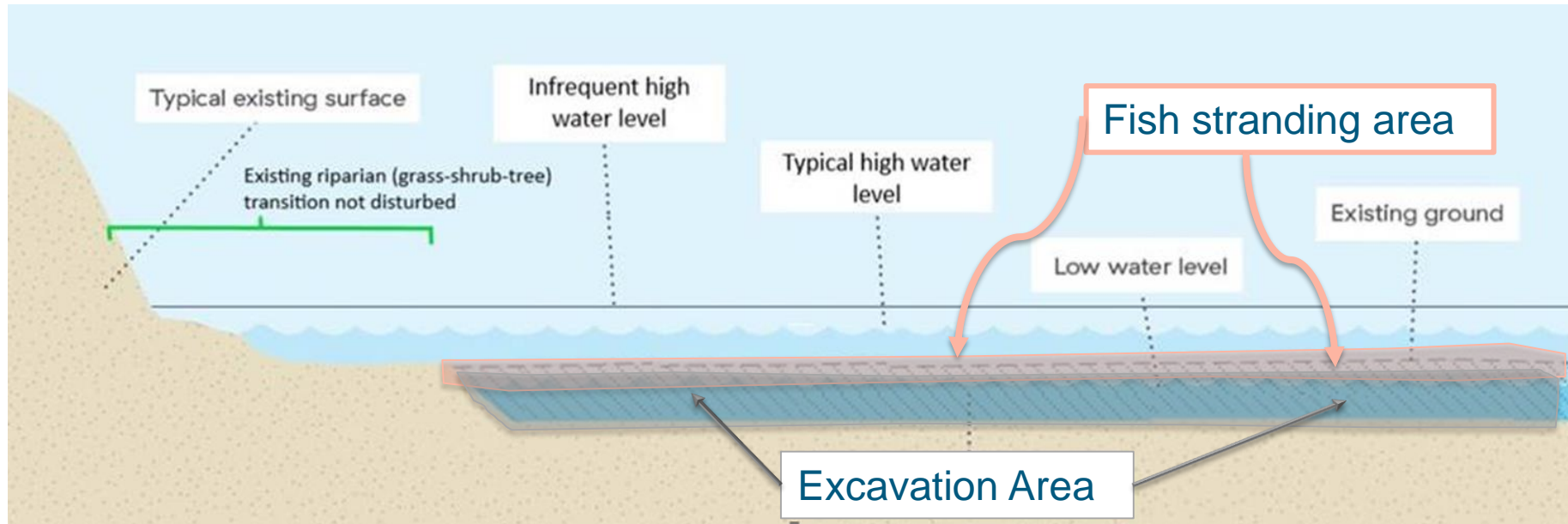
Revised Scope for 2022/23



Scope includes in-river excavation (fish stranding reduction, habitat improvement, clearing, access road and some aggregate stockpiling. Work deemed by Geotechnical Engineer to be safe with respect to instability

Benefits of Gravel Bar Excavation

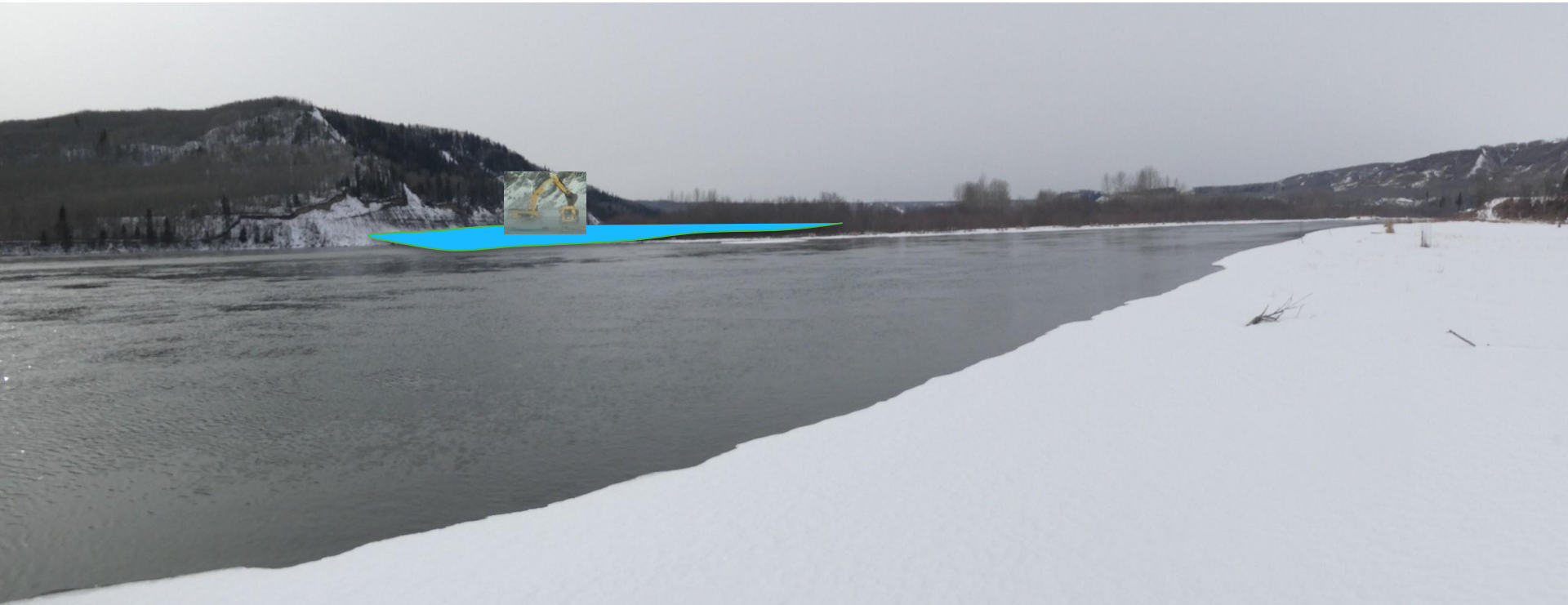
1. Reduces fish stranding/mortality risk
2. Deeper habitat types are beneficial for most species



Examples of Past Gravel Bar excavation



Example View of 109L Lower From Old Fort



Permits/Approvals

Permit Name	Legislation	Permit Ref No.	Expiry Date
Fisheries Act Authorization for Dam Construction, Reservoir Preparation and Filling	Fisheries Act	15-HPAC-01160	N/A
Licence of Occupation	Land Act	L8015911	29-June, 2027
S11 Approval for Downstream Crossing Fish Habitat Enhancement	Water Sustainability Act	9000246	31-March-2023
Construction Water Licence (Adding Point of diversion on left bank inside dam site area)	Water Sustainability Act	503364	31-March 2024
Occupant Licence to Cut No. 13	Forest Act	L50587	13-July-2022
Downstream Contouring (equipment in water)	Canadian Navigable Waters Act Approval		



NPRR

NORTH PEACE RURAL ROADS

FEBRUARY 16, 2022

BC HYDRO REGIONAL COMMUNITY LIAISON COMMITTEE

Presented by: Karen Goodings/Dave Heiberg/Rob Fraser - The Coalition

Purpose of the Agenda Request

- ▶ Understand what BC Hydro's commitment is to the residents and industry of the North Peace relative to extraction of all available gravel prior to inundation
- ▶ How much aggregate is in the pondage area?
- ▶ How much is being extracted?
- ▶ What are the specifics of the MOU with MoTI?

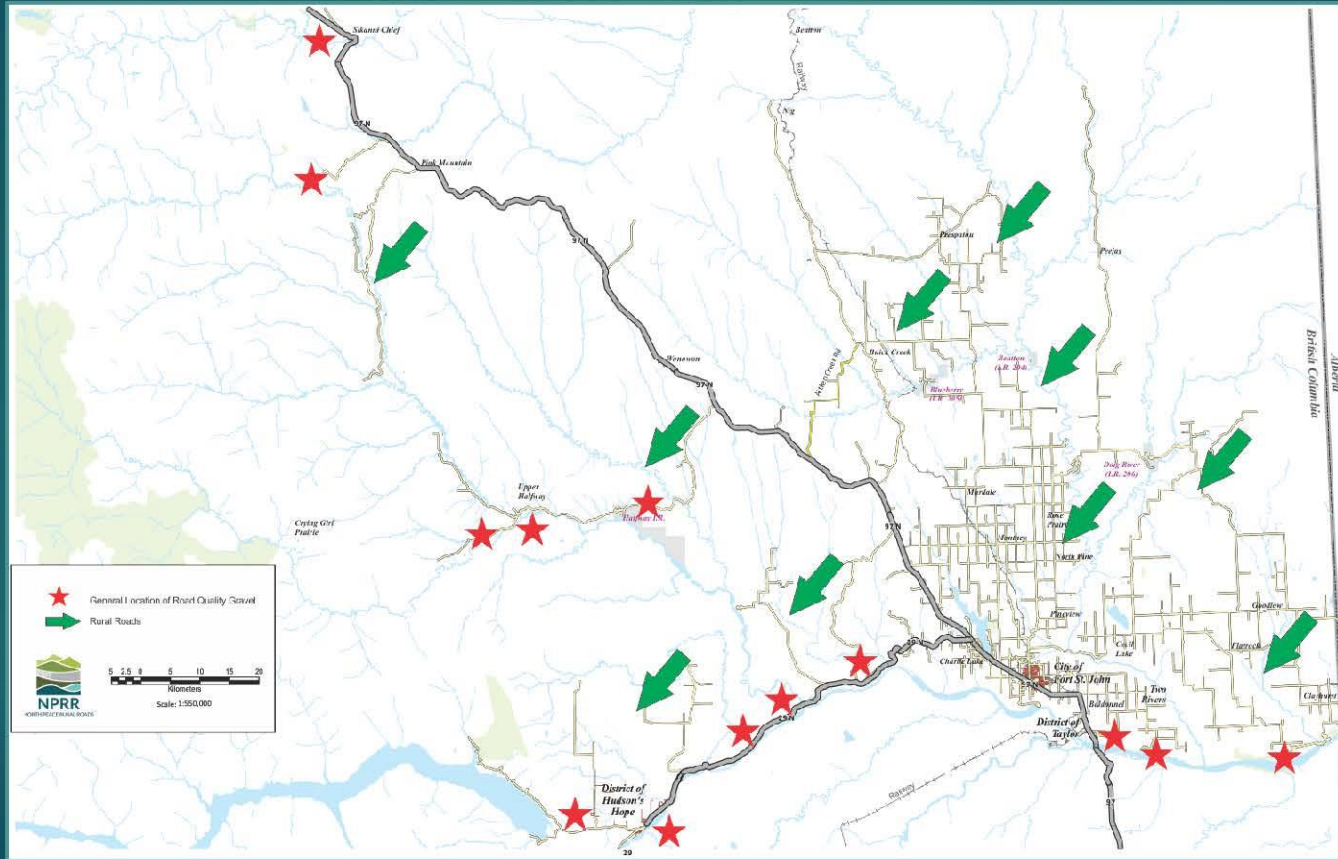
North Peace Rural Roads Initiative

- ▶ PRRD Area 'B', Taylor and Hudson's Hope
- ▶ Active since 1998
- ▶ Demonstrate the economic importance of a safe and reliable rural road network
- ▶ The North Peace rural road network has more than 1,600 km of unpaved roads on clay bases that only remain navigable with adequate gravel supplies
- ▶ The majority of roads are located north and east of Fort St. John

Gravel Depletion in the North Peace

- ▶ High Quality , cost effective gravel is only currently developed in 4 primary North Peace corridors:
 - ▶ Peace River
 - ▶ Upper Halfway
 - ▶ Sikanni
 - ▶ Pink Mountain, Chowade, Minaker and other foothill/mountain regions
- ▶ As Peace River sources are depleted, other sources are a long way from the rural roads that need regular gravel

Gravel vs. Rural Gravel Roads



MoTI & Maintenance Contractor Gravel Use

- ▶ Combined, MoTI and the Maintenance Contractor use around 230,000 m³ annually
- ▶ Traditional pits like Peaceview at Bear Flats have been consumed/will be flooded
- ▶ Maintenance contracts are negotiated where the successful bidder is responsible for sourcing the required gravel to meet the 10 year contract
- ▶ Higher gravel demand drives up the cost of gravel, impacting either profitability (or even viability) of the contractor, or reduces the amount of gravel put on rural roads. Neither of these are acceptable

Haul Distance

- ▶ When the current tenured portion of the Bentley Pit is exhausted by the current Maintenance Contractor (within this contract cycle) gravel may have to come from other potential sites such as Hudson's Hope or Pink Mountain if gravel owners continue to face resistance removing gravel sources from the ALR.

One-Way Haul Distance Increase	Baldonnel Km / %	Montney Km / %	Rose Prairie Km / %	Prespatou Km / %	Goodlow Km / %	Siphon Creek Km / %
Peace View/Bentley Pit	42 km	46 Km	69 km	108 km	87 km	80 km
Hudson's Hope*	97 km 131%	101 km 120%	114 km 65%	164 km 52%	141 km 62%	135 km 69%
Upper Halfway	141 km 236%	119 km 159%	132 km 91%	155 km 44%	186 km 114%	180 km 125%
Pink Mountain*	188 km 348%	166 km 261%	179 km 159%	203 km 88%	233 km 168%	239 km 199%
Sikanni	194 km 362%	172 km 274%	185 km 168%	208 km 93%	238 km 174%	232 km 190%

* currently gravel pits for sale

Environmental Impact Statement (EIS)

Fact Sheet (February 2013)

- ▶ **Metal, industrial mineral and aggregate potential**
 - ▶ Record of exploration and development
 - ▶ Historic production records
 - ▶ Remaining mine, quarry or pit life
 - ▶ Existing mineral or aggregate tenures
 - ▶ **Local and regional aggregate pricing and current and forecast consumption profile**
 - ▶ The volume of aggregate material expected to be purchased by the project relative to local market conditions
 - ▶ Any new or improved access to aggregate sources created by the project assessment area

SUMMARY OF POTENTIAL EFFECTS AND MITIGATION MEASURES

POTENTIAL EFFECTS	KEY MITIGATION MEASURES
Change to land use, resource use, access, and activities related to industrial mineral and aggregate utilization during construction	<ul style="list-style-type: none"> • Negotiate a Memorandum of Understanding (MOU) with the BC Ministry of Transportation and Infrastructure to compensate for material used by the Project and to maintain material availability for ministry operational needs. MOU to include: <ul style="list-style-type: none"> ○ Aggregate source strategy to compensate for inundated Ministry aggregate sources ○ BC Hydro commitment to stockpile surplus rock material at the West Pine, Wuthrich, and Portage quarries and make them available for other aggregate users

KEY FINDINGS

No residual adverse effects on minerals and aggregates are anticipated following application of the proposed mitigation measures and conclusion of agreements where appropriate with effected third party mineral and aggregate tenure holders.

EIS Section 23 was incomplete in its aggregate assessment

- ▶ The regional assessment area did not include the Peace River Regional District Area 'B' – by far the largest regional consumer of aggregate
- ▶ Did not anticipate and respond to the dramatically increasing demand of the Natural Gas Industry

The Natural Gas Industry is not the same as when EIS was submitted (Jan 2013)

▶ Conventional Natural Gas Development (1950-2010)

- ▶ Single well drilling pad – 120m x 120 m
- ▶ A few loads of gravel to stabilize the pad and for a narrow, temporary road
- ▶ Shorter lifespan development– gravel only as required for maintenance requirements

▶ Non-Conventional Oil and Gas (2010-current)

- ▶ Multi well drilling pad – 340 m x 280 m
- ▶ Estimates from 20,000 m³ - 60,000 m³ for new plant sites (roughly 1,100 – 3,300 loads)
- ▶ 1,000 m³/km. for 8-10 m wide roads
- ▶ Road re-gravelling every 2-5 years

Impact on Teko Pit

12

- ▶ **EIS - Consumption of Local Aggregate Deposits** (Volume 3, Section 23.4.4)
 - ▶ Dam Site: Construction Material: 28.5M m³
 - ▶ Highway and Shoreline: Construction Material: 12.9M m³
- ▶ **Environmental Impact Assessment** (Volume 3, Section 23, Table 23.5)
 - ▶ Teko Pit – BC Hydro estimated proven reserves 6.0M m³
 - ▶ “very important” to MoTI
- ▶ **Land Act Licence of Occupation** (October 2021)
 - ▶ BC Hydro requires 12.6M m³ “zone 3” or shell material for dam/access roads

Impact on Teko Pit

- ▶ How much of the 12.6M m³ of Shell and Granular will be taken from Teko Pit?
- ▶ If the full 6M m³ identified in the EIS is removed from Teko Pit, that equates to 26 years of future road maintenance that will be reduced
- ▶ How is BC Hydro replacing that quantity to MoTI?
- ▶ What does BC Hydro mean when assuring Director Goodings in the November 3, 2021 email (K O'Neil) that “as much gravel as possible will be reclaimed”.

Summary

- ▶ Collectively we are requesting that BC Hydro, MoTI or private industry remove all recoverable gravel from the banks, islands and tributaries of the Peace River prior to inundation
- ▶ Flooding the recoverable non-renewal gravel will be devastating to the sustainability of our road network and the future generations of rural residents and our agriculture, forestry and natural gas industries
- ▶ As the elected representatives of the residents of the North Peace, we hope we have shown how important this gravel is and respectfully request the specific details, plans and commitments related to the gravel recovery

Community and Social Mitigation Update

Ben Rauscher

Portage Program – 2022 Season

- BC Hydro provides a transport service to non-motorized watercraft between Halfway River boat launch and Peace Island Park
- Operated seasonally from May 15th to September 15th, between 7am to 7pm
- Reservations are required one week prior to desired portage date
- A total of one trip was supported in 2021 (two canoes, four passengers)

Boat Launch Update

- Lynx Creek Boat Launch
 - Detailed design complete and contractor procured
 - ALC approval in place
 - Construction scheduled to be completed by Fall 2022
- Eastern Reservoir Boat Launch (Halfway River East)
 - EAC amendment pending
 - ALC approval in place
 - Detailed design complete
 - Pending EAC amendment, construction anticipated to begin in 2022

Jobs and Business Opportunities



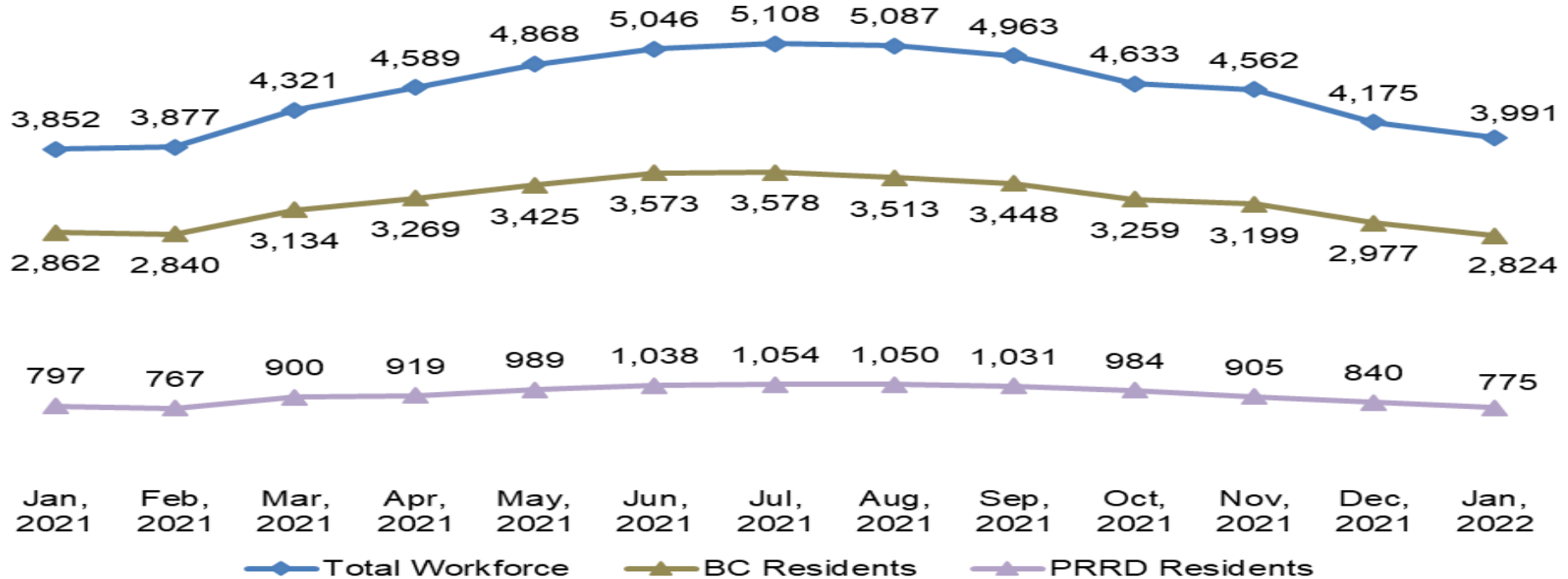
Employment Statistics

Note: The January workforce numbers reflect the Provincial Health Officer order for large scale industrial camps to gradually resume construction activities.

- BC Hydro requires all major contractors to report employment information.
- Total of **3,991** workers in January 2021: **2,824** from BC (71%), **775** from PRRD (24%)

Site C Employment Statistics – January 2021			
	# of total workers	# of B.C. primary residents	% of B.C. workers
Construction and non-construction contractors	3,255	2,140	66%
Engineers and project team	736	684	93%
Total workforce	3,991	2,824	71%

Site C Jobs Annual Trends (January 2021)



2021 Q4 Regional Business Participation

Companies engaged by BC Hydro and Site C contractors to provide goods and services in relation to Site C construction between October – December 2021

Community	# of businesses	Community	# of businesses
Baldonnel	1	Montney	2
Cecil Lake	1	Pink Mountain	2
Charlie Lake	21	Pouce Coupe	2
Chetwynd	45	Prince George	13
Dawson Creek	24	Rolla	2
Fort Nelson	1	Rose Prairie	2
Fort St. John	413	Taylor	4
Hudson's Hope	18	Tumbler Ridge	2
Moberly Lake	9	Wonowon	2
Total		564	

*Happy Retirement
Dave!!*





BC Hydro

Power smart