Powering Journeys
Energizing Communities

Air Permit Public Information Session

March 10, 2022

LAND ACKNOWLEDGMENT

We would like to begin by respectfully acknowledging that the Parkland Burnaby Refinery resides on the unceded traditional territory of the Musqueam, Squamish and Tsleil-Waututh Nations.

AGENDA

- Welcome
- Parkland Overview
- Metro Vancouver Permit Application Process
- Air Permit Application Overview
- Human Health Risk Assessment Results
- Next Steps
- Questions & Answers

Overview of Parkland

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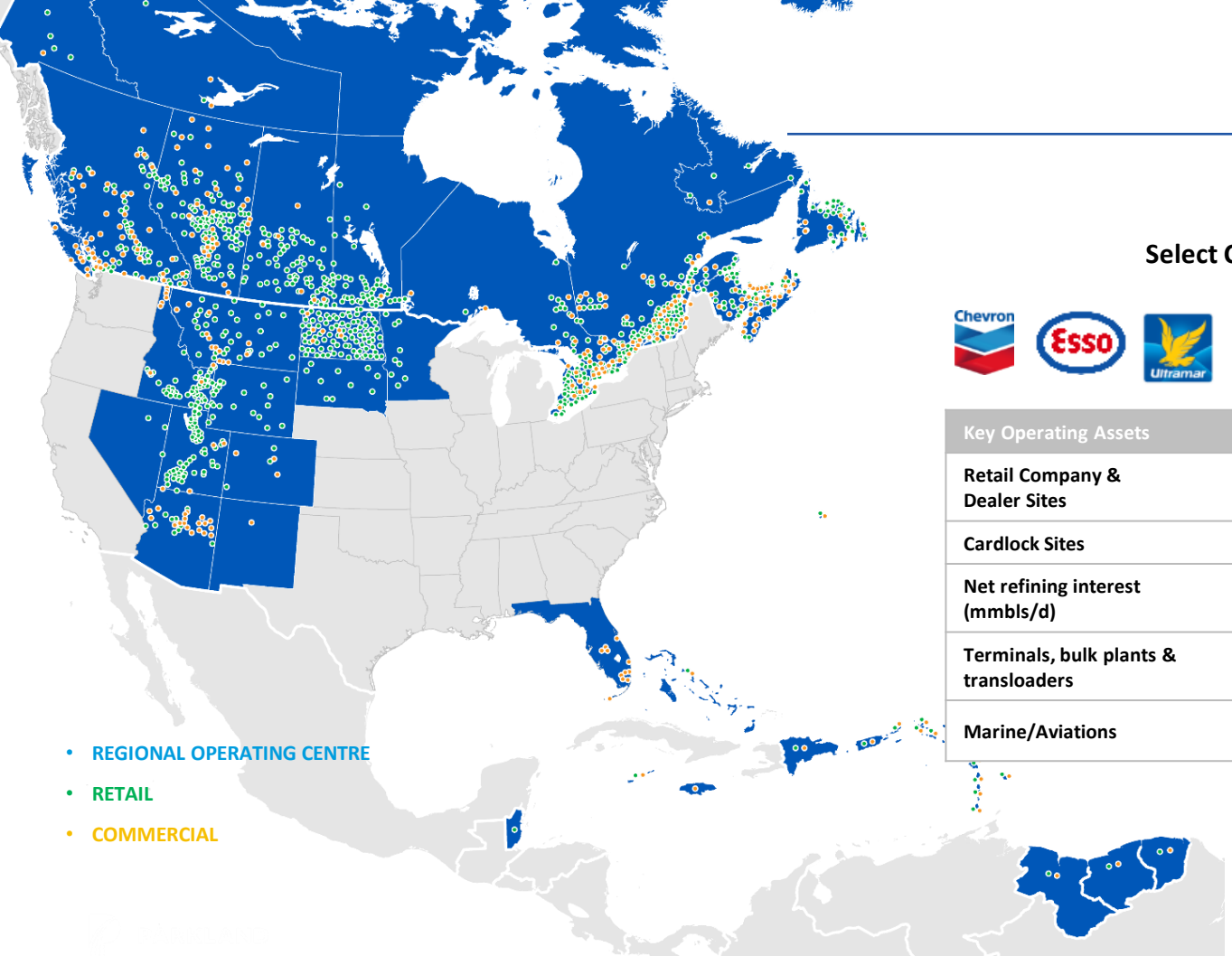

- REGIONAL OPERATING CENTRE
- RETAIL
- COMMERCIAL

Select Canadian Brands

Key Operating Assets	CDN	USA	Int'l	Total
Retail Company & Dealer Sites	2,000	525	661	3,186
Cardlock Sites	154	44	-	198
Net refining interest (mmbls/d)	55	-	5	60
Terminals, bulk plants & transloaders	✓	✓	✓	✓
Marine/Aviations	✓	✓	✓	✓

WHAT WE DO

Make/Buy

Manufacture and purchase refined products

Refined

Product

Move/Store

Source the most economic product

Truck · Ship

Rail · Store

Sell

Optimize internal and external customer base

Wholesale · Retail

Commercial

Parkland Burnaby Refinery Overview

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PARKLAND BURNABY REFINERY OVERVIEW – KEEPING BC RUNNING

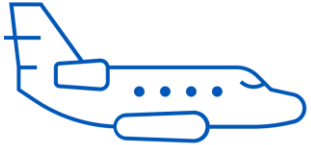
- 55,000 barrel per day nameplate capacity (light sweet refinery)

- The Refinery employs over 500 people, including 90 from Burnaby

- 85% of output stays in British Columbia

- 40% of output stays in the Lower Mainland

- 25% of BC's transportation fuel



- 30% of YVR's jet fuel

Parkland's Low-Carbon Leadership

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Our commitment
is to reduce our GHG
emissions intensity.

Co-processed fuels
can help make this happen.

WHAT IS CO-PROCESSING?

PARKLAND'S LOW-CARBON LEADERSHIP

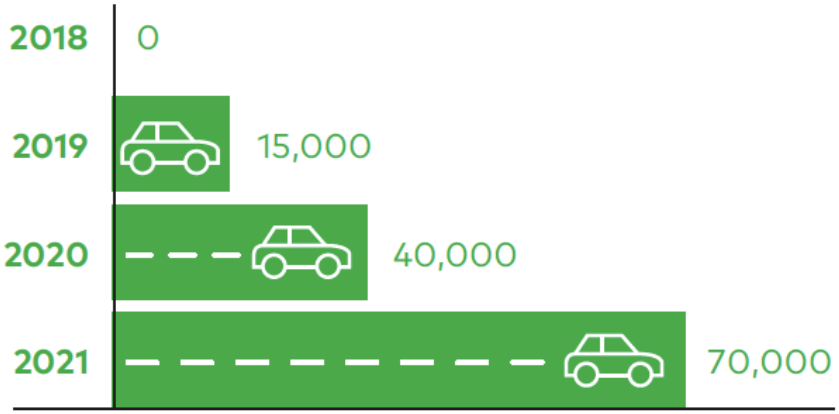
- Parkland recognizes that we cannot wait. We need to take action of reducing CO2s and our footprint. We see the potential of being part of solution.

- Our leadership in this space has enabled commercial-scale production of biofuels starting in 2020.

Parkland's co-processed fuels have approximately **1/8 of the carbon intensity** of conventional fuels.

PARKLAND'S LOW-CARBON LEADERSHIP

- In 2019, we processed 114,000 barrels of renewable feedstock - the equivalent of taking 15,000 cars off the road, and an additional 40,000 cars in 2020.



Parkland's co-processed fuels have approximately **1/8 of the carbon intensity** of conventional fuels.

Metro Vancouver's Air Quality Permit Process

Maari Hirvi Mayne P.Eng.
Acting AQ Regulatory Program Manager, ER&E, Parks and Environment

March 10, 2022 – Parkland Refining AQ Permit Information Session
51350969

metrovancouver

AQ PERMIT PROCESS

Proponent submits preliminary application, MV staff reviews for completeness, proponent submits final application

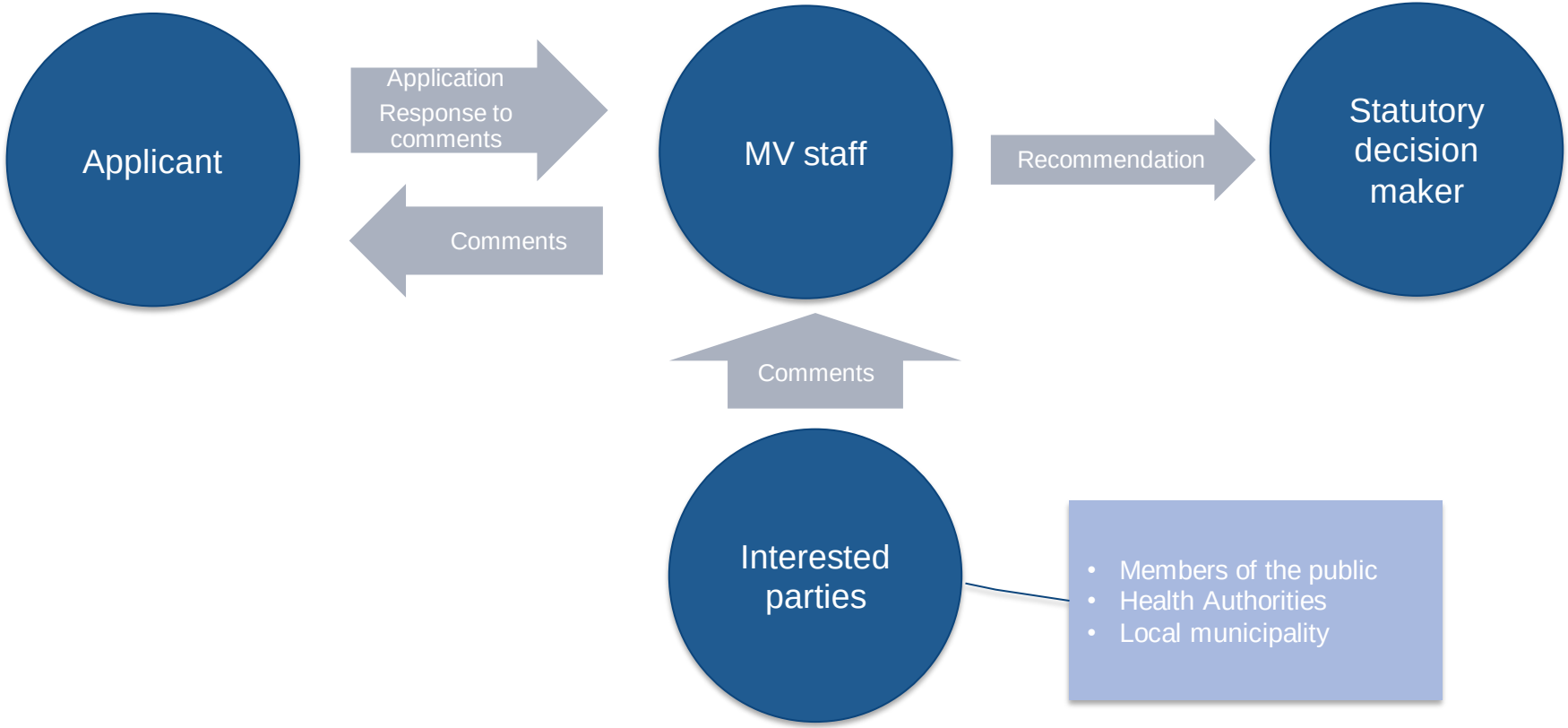
Public notification (newspapers, website), discretionary public meetings, and applicant's response to comments

Technical review of application, preparation of draft permit in consultation with applicant

Recommendation and final decision, could include additional requirements

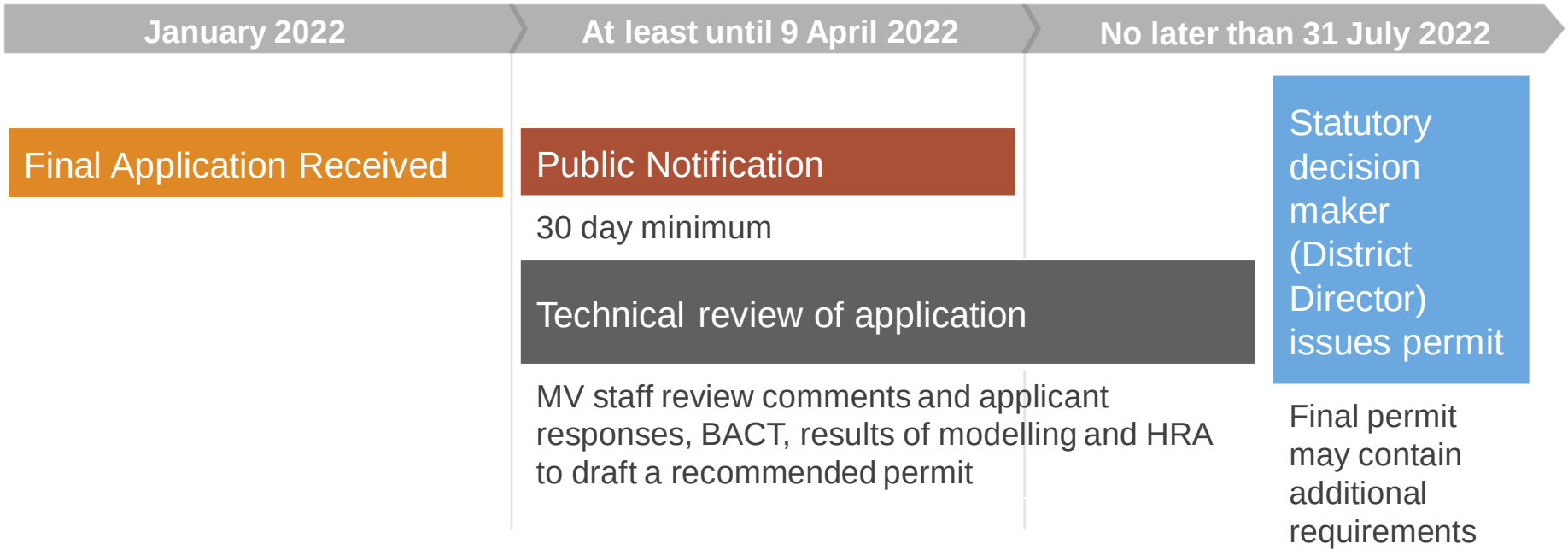
"Persons aggrieved" may appeal the decision or any part of the decision

WHO IS INVOLVED?



AQ PERMIT PROCESSING

Parkland Refining Timeline



HOW TO SUBMIT COMMENTS

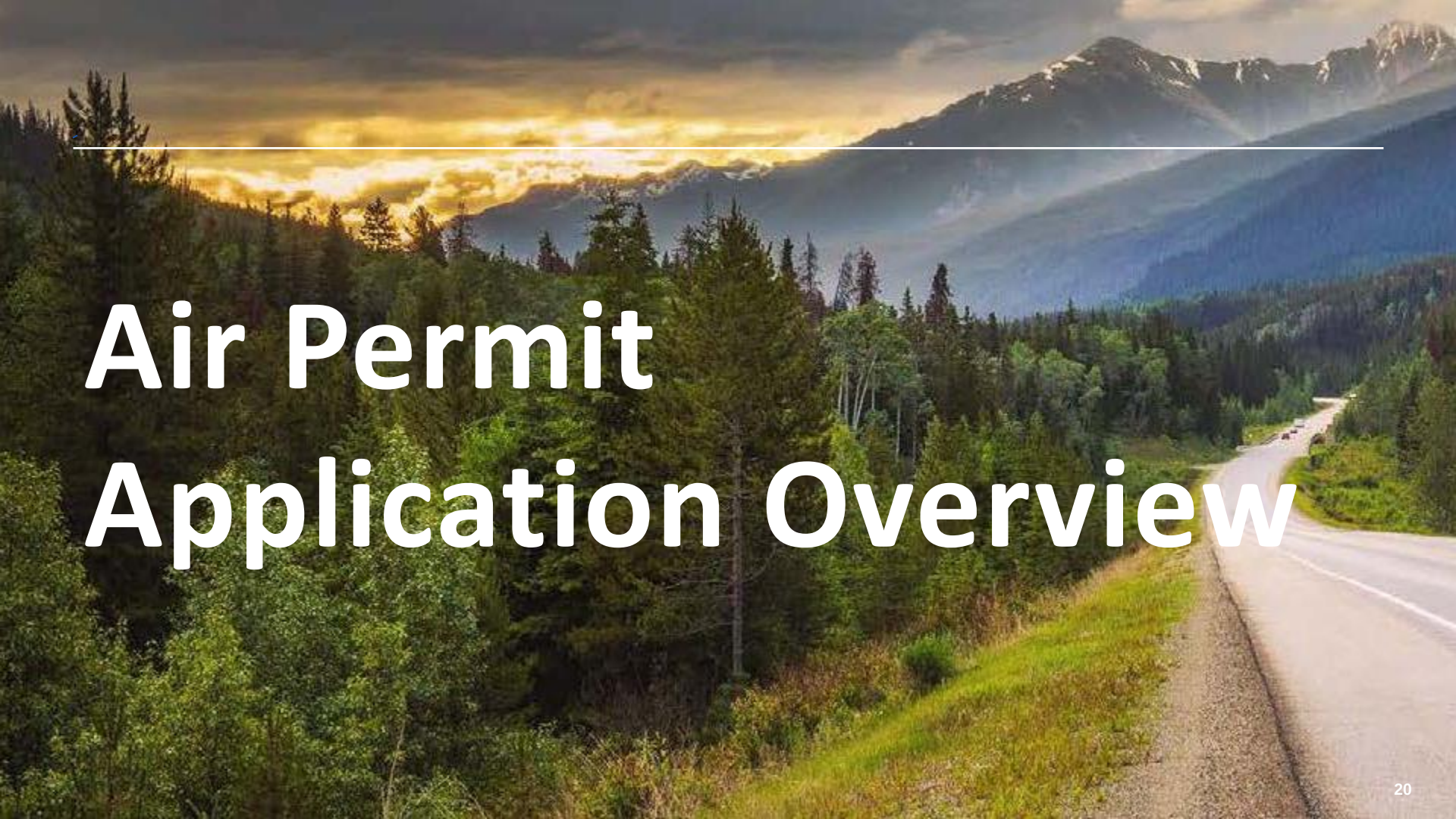
Comments must be in writing to be considered

Form available at www.metrovancouver.org
Search “air quality notification”

Email
ParklandComments@metrovancouver.org

Write to
Air Quality District Director
4515 Central Boulevard
Burnaby, BC, V5H 0C6

metrovancouver



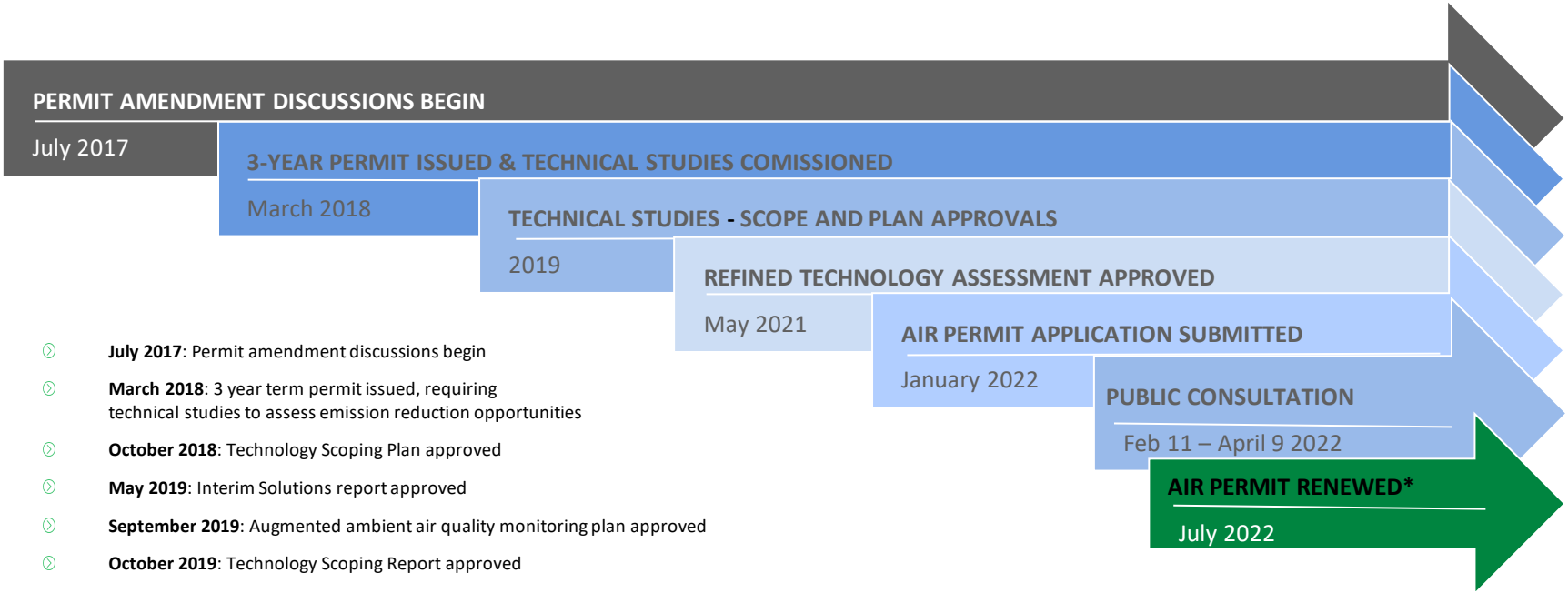
Air Permit Application Overview

AIR PERMIT APPLICATION BACKGROUND

- Parkland's Metro Vancouver air quality management permit expires July 31 2022, and we have applied for renewal and amendment.

- Consultation is currently underway with the public, Indigenous, regulators, municipalities and health authorities

AIR PERMIT APPLICATION TIMELINE



- **July 2017**: Permit amendment discussions begin
- **March 2018**: 3 year term permit issued, requiring technical studies to assess emission reduction opportunities
- **October 2018**: Technology Scoping Plan approved
- **May 2019**: Interim Solutions report approved
- **September 2019**: Augmented ambient air quality monitoring plan approved
- **October 2019**: Technology Scoping Report approved
- **January 2021**: Human Health Risk Assessment Study commissioned
- **May 2021**: Refined Technology Assessment Capital Solutions report approved
- **January 2022**: Air permit application submitted, HHRA completed
- **February 2022**: Refined Technology Assessment Non-Capital Solutions report approved, consultations begin

EMISSIONS REDUCTION TECHNOLOGIES

- Operational changes to the refinery's Fluid Catalytic Cracker that reduce both sulphur dioxide (SO_2) and nitrogen dioxide (NO_2) emissions
- Installation of a Tail Gas Treatment Unit on the Sulphur Recovery Unit that will reduce SO_2 emissions
- Installation of a Flue Gas Recirculation system on an existing boiler that will reduce NO_2 emissions.
- Past addition of a Third Stage Separator to the Fluid Catalytic Cracker which has already reduced particulate matter (PM) emissions.

EMISSION REDUCTION AMOUNTS

45% reduction in permitted SO_2 emissions

18% reduction in permitted NO_2 emissions

23% reduction in permitted PM emissions

NEW LIMITATIONS AND AUGMENTED AIR QUALITY MONITORING

- Throughput limits for volatile organic compound (VOC) sources such as storage tanks and truck / ship loading facilities
- Removal of permit allowances for sources that have not yet been built

- Addition of an air quality monitoring station on the North Shore
- Funding of additional air quality monitoring at existing Metro Vancouver stations:
  - Sulphur Dioxide on Burnaby Mountain
  - Nitrogen Dioxide and fine Particulate Matter at Capitol Hill and McGill Park

AIR PERMIT APPLICATION TERM LIMIT

- Parkland has requested a 10-year term limit for the air permit to allow for:
  - regulatory certainty and time to implement emission reductions, including significant capital projects.
  - comprehensive assessment of future permit amendments, a multi–year process involving a broad range of stakeholders.
- The following additional requirements have been implemented outside of the air permit process:
  - Federal regulations Reduction in the Release of Volatile Organic Compounds Regulations (Petroleum Sector).[1]
  - Renewable & Low Carbon Fuel Requirements Regulation

Parkland
must and will meet
newly developed requirements in
air quality regulations
at the federal,
provincial and
municipal level
irrespective of the
air permit term limit.

[1] https://laws-lois.justice.gc.ca/eng/regulations/SOR-2020-231/page-1.html

HUMAN HEALTH RISK ASSESSMENT (HHRA)

- In support of the air permit application, as recommended by Fraser Health Authority, an independent third party (WSP) conducted a HHRA.
- Consultation comments on the work plan from regulators, health authorities, Indigenous and the public were incorporated into the study.
- The study built off the UBC HHRA study and Metro Vancouver/Fraser Health update, executed in 2002 and 2013 respectively.
- Background materials and final report available here: https://www.burnabyrefinery.ca/en/community/refinery-projects/human-health-risk-assessment

WSP GOLDER

Parkland Burnaby Refinery HHRA Study Results


Photo Credit: Andrew Maples

Francis J. Ries, B.Sc. P.Eng.

Theresa Repaso-Subang, HBSc., DABT, ERT, QPRA

March 10, 2022

Next Steps

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What to expect?

FORMAL CONSULTATION ENDS

April 9

REVIEW OF COMMENTS AND QUESTIONS

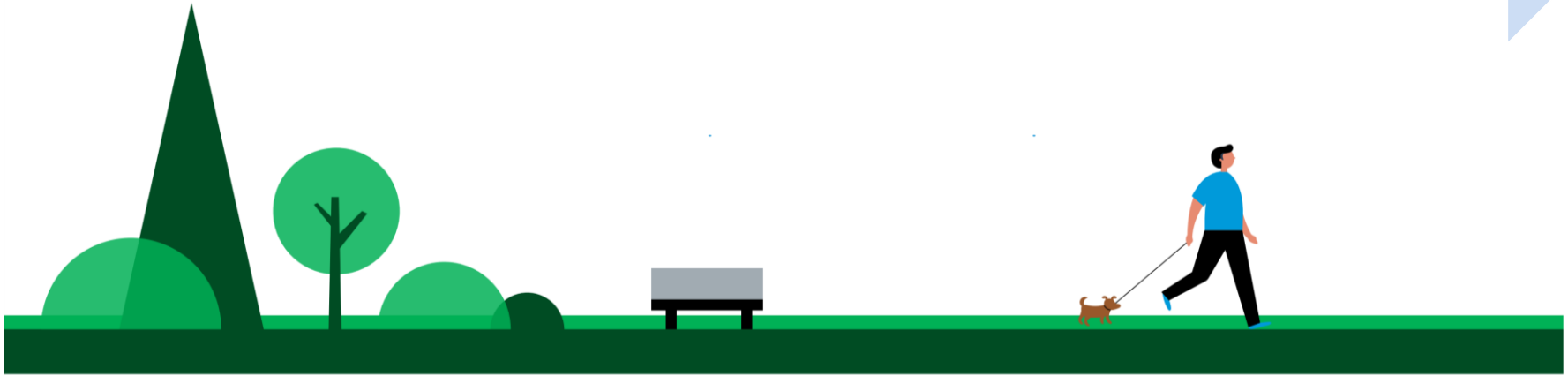
April/May 2022

REPORT TO COMMUNITY AND STAKEHOLDERS

May 2022

ISSUANCE OF FINAL AIR PERMIT

July 2022*



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