



2024 Liquids Pipelines

Your first-choice energy delivery partner



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Forward-looking information

This booklet includes references to forward-looking information. Although Enbridge believes these forward-looking statements are reasonable, based on the information available on the date such statements are made, they are not guarantees of future performance or outcomes.

President's message

As we celebrate our 75th anniversary this year, I'm reflective of our incredible journey.

Our mission has always been to safely deliver crude oil and liquids products to major markets. I'm proud of the generations of pipeliners who have worked tirelessly to make this happen, and grateful for such a dedicated team. We've come a long way, learning, adapting, innovating and growing.

I'm equally proud of our strong relationships with you, our customers. Listening to your feedback has helped us strengthen our relationships as well as our reliability, customer service, market optionality, competitiveness and your netbacks. We appreciate your business, and hope you continue to think of us as your first-choice pipeliner.

Our unequivocal commitment to safety and reliability

It takes incredible focus and dedication to foster the safety culture we've created. We've steadily upped our game on safety, improving practices, and investing billions of dollars in our system's integrity programs and pipe replacements, like Line 3, to become a top decile operator. While it's a never-ending pursuit, we're proud of this year's safe delivery record – including an ex-Gretna delivery record of 3,266 kbpd in December 2023.

Doing our part to enhance customer value

After years of cyclical lows, industry has returned to growing production from all basins. We had a banner year, and our team hustled and innovated to keep the systems full for the majority of 2023. This meant safely delivering approximately six million bpd of your crude through our Mainline, Flanagan South, Gray Oak and Ingleside systems. And we did this while crafting a win-win Mainline tolling agreement.

In 2024, we will focus on optimizing the Mainline system while also looking to expand our capability and optionality in the Permian basin.

Serving your needs now and into the future

We know you have options. But we believe providing top-tier customer service will continue to set us apart. We're committed to transporting as much crude as possible for our North American customers, creatively and safely. We'll do so by continuing to connect customers to all the best markets, including export. We're also committed to helping decarbonize industry through carbon capture, transport and storage, hydrogen and renewable solutions.

Our deepest gratitude to everyone who has been a part of our journey these past 75 years. Your trust and support have been the driving force behind our success. We will continue to earn your trust.

Thank you for your business. We will deliver.



Colin Gruending
President, Liquids Pipelines



Enbridge employees conducting safety checks at Flanagan Terminal, near Pontiac, IL.

Operational safety and reliability

Leading the way in safe delivery

We invest over half a billion dollars and thousands of hours every year to maintain the fitness of our liquids pipeline systems in the U.S. and Canada. For the past 10 years, Liquids Pipelines has achieved an industry-leading safe delivery record of better than 99.999% – a record we’ve diligently maintained for the past decade. We continue to strive to achieve a perfect 10.

By the numbers: Ensuring safety across our Liquids Pipelines assets

U.S. \$500+ million

Annual investment on programs that help us maintain the fitness of our pipelines

3,500+

Annual inspections on our pipelines

1,700+

Annual preventative maintenance activities

150+

Annual inline tool run inspections

Our ultimate goal: Zero incidents and a perfect 10 in safe delivery

The way we see it, if it's not safe it's not sustainable. Safety isn't just a core value at Enbridge – it's the very foundation of our business. That's why, as part of our [sustainability commitments](#) announced in late 2020, we set a goal of zero incidents, injuries and occupational injuries. So far, we've achieved a 25% improvement over the previous three-year average in total recordable incident frequency (TRIF) rate for employees and contractors.



Keeping a watchful eye, 24/7, with trained staff and computerized monitoring

The Enbridge value proposition

Size, scope, flexibility and exceptional customer service

Enbridge is North America's premier energy delivery company – and we invest considerable time, dollars and resources to keep it that way. At 17,800 miles (28,600 kilometers) long, Enbridge's crude oil and liquids pipeline network is the longest and most complex in the world.

We move 30% of the crude oil produced in North America. We also account for 65% of all U.S.-bound Canadian exports, 40% of all the crude oil imported into the United States and ~25% of North America's crude exports.

Connecting key basins and leading markets

Enbridge's liquids pipeline network connects the continent's key supply basins with the leading refinery markets. In fact, we are connected to 75% of North America's refining capacity, including hubs in the Gulf Coast and the U.S. Midwest.

Our network is also unparalleled for its flexibility, with multiple receipt and delivery points across the United States and Canada. The Enbridge system is a complex web of energy infrastructure – with more than 20 major terminals, 200 tanks, 36 million barrels of operational tankage, 60 million barrels of contract storage capacity and 600 pump units.

Maximizing throughput via system optimization

We maintain a strong focus on customer service while achieving industry-leading safety records. Operating the integrated Enbridge network requires seamless coordination and collaboration across our many teams. Our segregated batching system allows us to simultaneously transport multiple grades and commodity types while maintaining strict standards for safety and efficiency. With more than 20 receipt points and 30 delivery points across the network, we're well suited to move heavy, medium, and light crude as well as NGLs and refined products. The systems high utilization rate reflects our commitment to maximizing throughput via system optimization. Enbridge's liquids pipelines is a first-choice delivery network and our teams are committed to continue meeting the evolving needs of our customers.

Potential near-term opportunities

We're looking at opportunities to optimize Enbridge's Regional Oil Sands (Athabasca) system in northern Alberta. As our shippers expand and increase production in the oil sands, we will expand our system to provide diluent and bitumen transportation services.

On our Mainline, we're exploring potential expansion projects and related timing and other projects that may be of interest to our customers. On the Market Access front, we've recently completed an open season on our Flanagan South Pipeline and successfully contracted the expansion capacity.



An Enbridge employee conducts safety checks on our Great Lakes Region infrastructure, which plays a critical role in meeting refinery demand in the U.S. Midwest and Eastern Canada.

North America—and beyond

Building a premier Gulf Coast, Permian and export franchise

Even as the global demand for energy continues to grow, ongoing supply chain challenges and geopolitical conflicts have created energy insecurity in many parts of the world.

For Enbridge and its liquids pipeline customers, these challenges present opportunities to export North American crude oil. And we're already delivering, through a U.S. Gulf Coast and export strategy that positions Enbridge to safely and cost-effectively store and export barrels to international markets.

Enbridge Ingleside Energy Center: Size and location matter

Our acquisition in 2021 of the U.S.'s largest crude oil storage and export terminal by volume gave our customers access to a highly efficient and cost-effective gateway to the world. Strategically located in Ingleside, Texas – with proximity to open water – the Enbridge Ingleside Energy Center (EIEC) provides direct connectivity to next-generation, long-haul pipelines bringing crude from the Permian and Eagle Ford basins to tidewater for export.

Potential future expansions

Enbridge recently announced an [expansion project at Ingleside](#), involving the addition of approximately two million barrels of storage capacity, with the first tank's anticipated in-service date in early 2024. A further expansion of the EIEC terminal, Phase VII, has been sanctioned and will add an additional two and a half million barrels of storage capacity.

The Enbridge Houston Oil Terminal (EHOT) has been sanctioned and construction is anticipated to start in second half of 2024. It is envisioned to be the premier Canadian heavy crude terminal in the USGC and will be fully integrated into the Seaway system – with access to both dock loading facilities and all existing delivery points. Initial capacity of EHOT is anticipated to be 2.5 million barrels of storage. It will also have potential future connectivity to Gray Oak and the Sea Port Oil Terminal (SPOT) project.

Increased capacity in key Permian pipelines

With Permian oil supply expected to grow by an estimated two million barrels per day through 2030, we believe integrating Gray Oak into EIEC will further boost oil exports off the Gulf Coast. Enbridge is expanding the Gray Oak pipeline by 120,000 barrels a day. The open season for the capacity is expected to close mid-2024, with the full expansion capacity anticipated to be in-service in mid-2025. The expansion is timed to meet our customers' needs for incremental takeaway capacity out of the basin starting in mid-2025 and combined with EIEC, Enbridge will provide a unique solution to our customers for pipeline and export capacity. A further modest capacity expansion of Gray Oak is achievable and can be brought to market when customer demand for incremental capacity out of the basin is needed.



Enbridge expanding crude oil storage capacity at Enbridge Ingleside Energy Center

EIEC by the numbers

15.3 M barrels + [4.5 M barrels]

Storage capacity of ~15.3 million barrels, with additional ~2.0 million barrels expected in Phase VI (ISD Q2 2024), and ~2.5 million barrels in Phase VII (ISD 2H 2025).

160,000 barrels/hr

Loading rate of 160,000 barrels an hour, the fastest in the U.S. Gulf Coast.

3 deep water vessel berths

Three deep-water vessel berths. Two berths capable of loading up to a VLCC tanker and one berth capable of up to a Suezmax vessel.

24 hour advantage over other terminals

Proximity to open water enhances turnaround capability, resulting in a 24 hour average advantage over other terminals.

Advantaged draft

Currently the only facility with draft that matches the recently completed Corpus Christi Ship Channel Improvement Project depth. EIEC berth draft has increased to 52 feet, with depth testing anticipated to be completed in Q2 2024. The increased draft is anticipated to allow our customers to fully load a Suezmax and up to 1.5 million barrels onto a VLCC.

CCUS and low-carbon projects

There's a worldwide transition to low- or zero-carbon economies and Enbridge is proud to be part of it. We continue to advance this transition by focusing on low-carbon energy solutions for transport and export, while reducing and capturing emissions from our operations.

In recent years, Enbridge has started to invest in technology that allows us to capture and store carbon dioxide, a gas that accounts for approximately 80% of all GHG emissions from human activities.

Another exciting project is [Enbridge's Open Access Wabamun Carbon Hub](#) under development west and north of Edmonton, Alberta. The Wabamun Hub will be one of the world's largest fully integrated CCS complexes. Once built, local Indigenous groups will have the opportunity to co-own the CO₂ transportation and storage assets, generating stable revenue streams for these communities for many years.

Our announced partnership with Oxy Low Carbon Ventures to explore a CO₂ pipeline and sequestration hub in Corpus Christi, continues to advance commercial discussions with potential customers. Once complete, the project will be able to store up to 15 MTPA of CO₂.

Enbridge is also working alongside Yara, the world's largest ammonia distributor, to develop a low-carbon blue ammonia production and export facility, to meet growing global and domestic demand. The facility, to be located at Ingleside, is planning to capture 95% of the CO₂ produced and is anticipated to be one of the world's largest blue ammonia facilities once completed and in-service. The project is currently expected to be in-service in 2028.

In Canada, we're reviewing our right-of-way (ROW) capabilities on our Regional Oil Sands (Athabasca) system to provide service for a CO₂ pipeline serving oil sands producers. Enbridge is also exploring the development of blue hydrogen production as well as potential H₂ and CO₂ pipeline infrastructure both in Canada and in the U.S.



Yara and Enbridge to develop and construct a low-carbon blue ammonia project at Enbridge Ingleside Energy Center



Enbridge and Oxy Low Carbon Ventures to explore the development of a CO₂ pipeline transportation and sequestration hub near Corpus Christi

Indigenous inclusion and partnership

We understand that Indigenous communities want to be part of the energy transition through the full energy asset lifecycle.

That's why Enbridge has adopted an industry-leading engagement approach that respects Indigenous peoples' culture and intimate connection to the environment and offers opportunities for financial or equity partnerships. We know that together, we'll go farther.

In September 2022, we released our [Indigenous Reconciliation Action Plan](#) – a comprehensive roadmap of our journey toward truth and reconciliation that includes a mechanism for reporting on our progress.

September 2022 also marked a [groundbreaking agreement](#) that saw 23 First Nation and Métis communities acquire, through a newly created organization called Athabasca Indigenous Investments, an 11.57% interest worth C\$1.12 billion in seven Enbridge-operated pipelines in northern Alberta. To date, this partnership is the largest such transaction in North America and our first involving existing Enbridge assets.

In June 2023, we sold the Plaza/Wabek Pipeline in North Dakota to Thunder Butte Petroleum Services Inc., a wholly owned subsidiary of the Mandan, Hidatsa and Arikara Nation. The agreement began the process of connecting the Nation's operations with the Enbridge network – and opened the door for MHA Nation to become the first Tribal shipper.

We are eager to pursue additional opportunities. We are looking to develop partnerships across Turtle Island that have mutual benefits for Enbridge and our Indigenous neighbors.



Routine inspection by Enbridge employees of the Athabasca Terminal near Fort McMurray, AB.



Enbridge-MHA Nation agreement: 'It's an awesome day'



Enbridge's donation of 120 valves provides training, prosperity for Alexander First Nation in Alberta

Toward a sustainable tomorrow

Enbridge's ESG targets

Our environmental, social and governance (ESG) goals are ambitious. Our unwavering commitment makes them attainable.

In November 2020, Enbridge became the largest company in North America's oil industry to commit to net-zero GHG emissions from our operations. We set a date of 2050 for this goal, along with a commitment to reduce our GHG emissions intensity by 35% by 2030.

At the same time, Enbridge launched a new Inclusion, Diversity, Equity and Accessibility Strategy (IDEAS) and pledged to increase representation of diverse groups – within our workforce by 2025, which includes goals for the representation of women, underrepresented ethnic and racial groups, people with disabilities and U.S. veterans.

We're also committed to strong and sustainable governance founded on accountability, independence, diversity and transparency.



Progress to date on our ESG goals



Enbridge-funded, reef-based carbon sequestration study in the Gulf of Mexico delivering 'encouraging results'



Keechi Wind Project, a 110-megawatt wind farm located in Jack County, TX.

Transforming energy to shape a better tomorrow.

We've been fueling people's quality of life for 75 years. While a lot has changed since then, our commitment still stands. Today, we continue investing in modernizing our systems and advancing new technologies and lower-carbon solutions like carbon capture and storage. It's how we're bridging to a sustainable energy future while continuing to enrich quality of life.



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The Enbridge Ingleside Energy Center,
near Corpus Christi, TX, is the largest crude oil
storage and export terminal by volume in the United States.

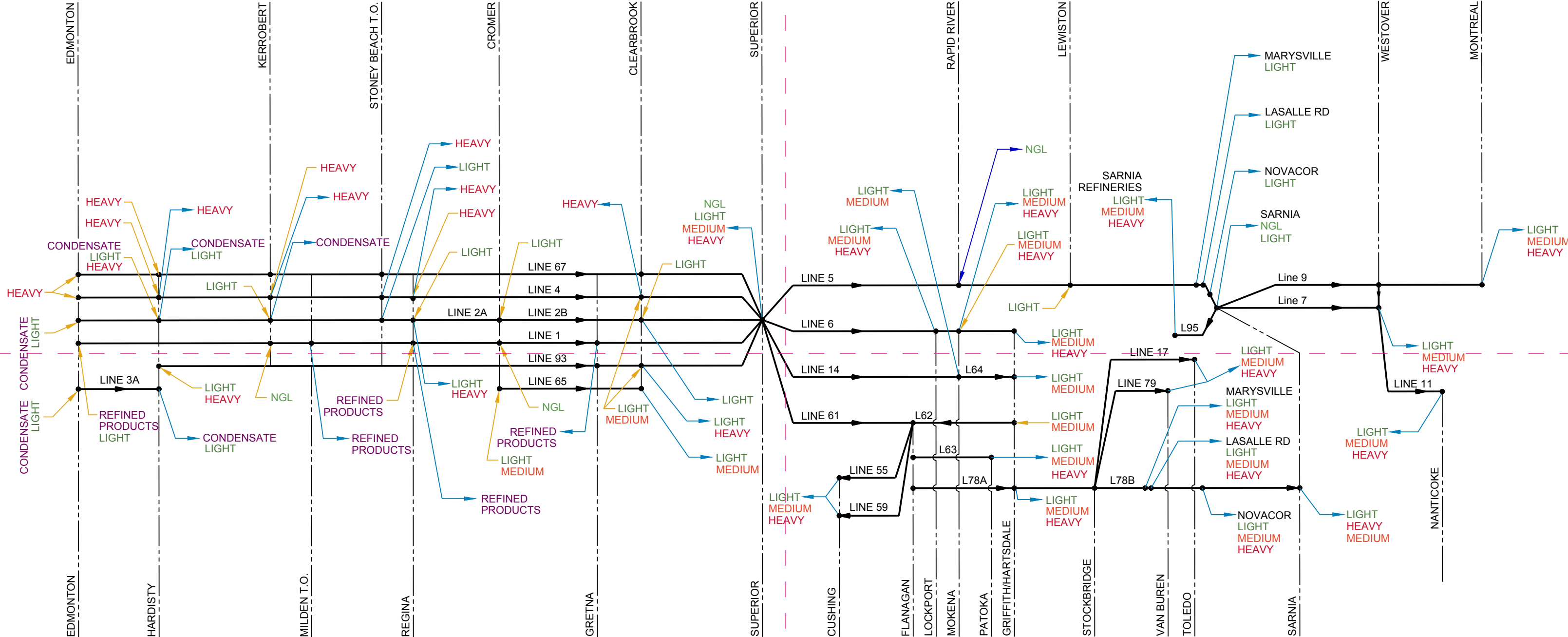


Major Canadian and U.S. Crude Oil Pipelines and Refineries



Pipeline Commodity Classification Movement Map

Quarter 1, 2024



Commodity movement legend

- ← INJECTION
- DELIVERY
- ←→ DELIVERY/INJECTION

REFERENCE DRAWINGS				
3	AS-BUILT IDR 2526 REDLINE MARKUP DATE: 2023-02-01 AEE	2023-02-02	ENB	ENB
2	AS BUILT AFE 20005598 IDR 1898 REDLINE MARKUP DATE: 2022-01-20 MS	2022-01-20	ENB	ENB
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REV NO	REVISION DESCRIPTION	DATE	CHK	APPR

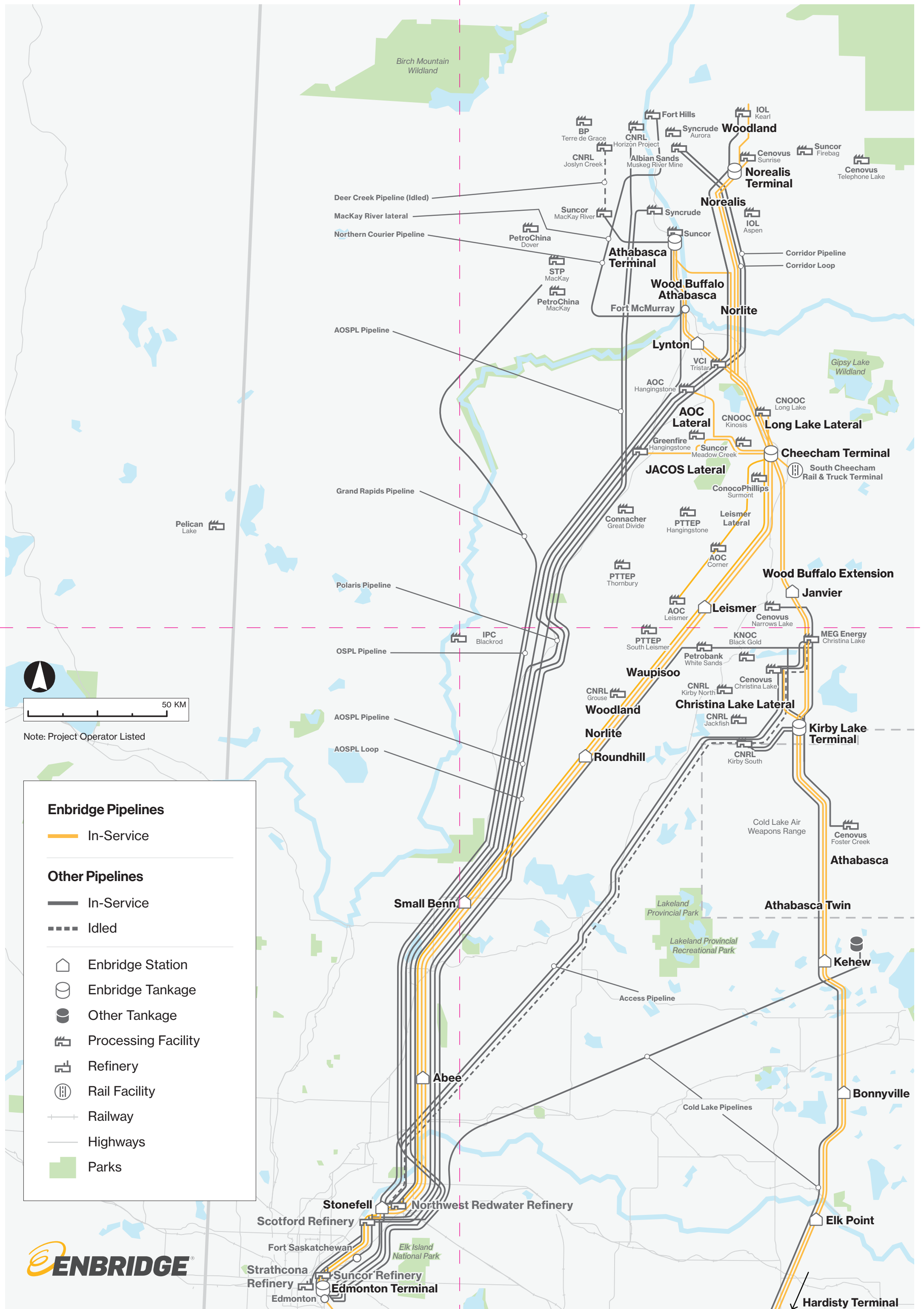
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**SYSTEM WIDE CA (AB) OVERALL
COMMODITY CLASSIFICATION MOVEMENT MAP**

BY: MS	CHK: ENB	ENG: ENB	ENB APPR: ENB
DATE: 2021-11-30	SCALE: NTS	STATUS: AS BUILDING	
DWG NO: D-0-0.0-100358-0	REV NO: 3.A		

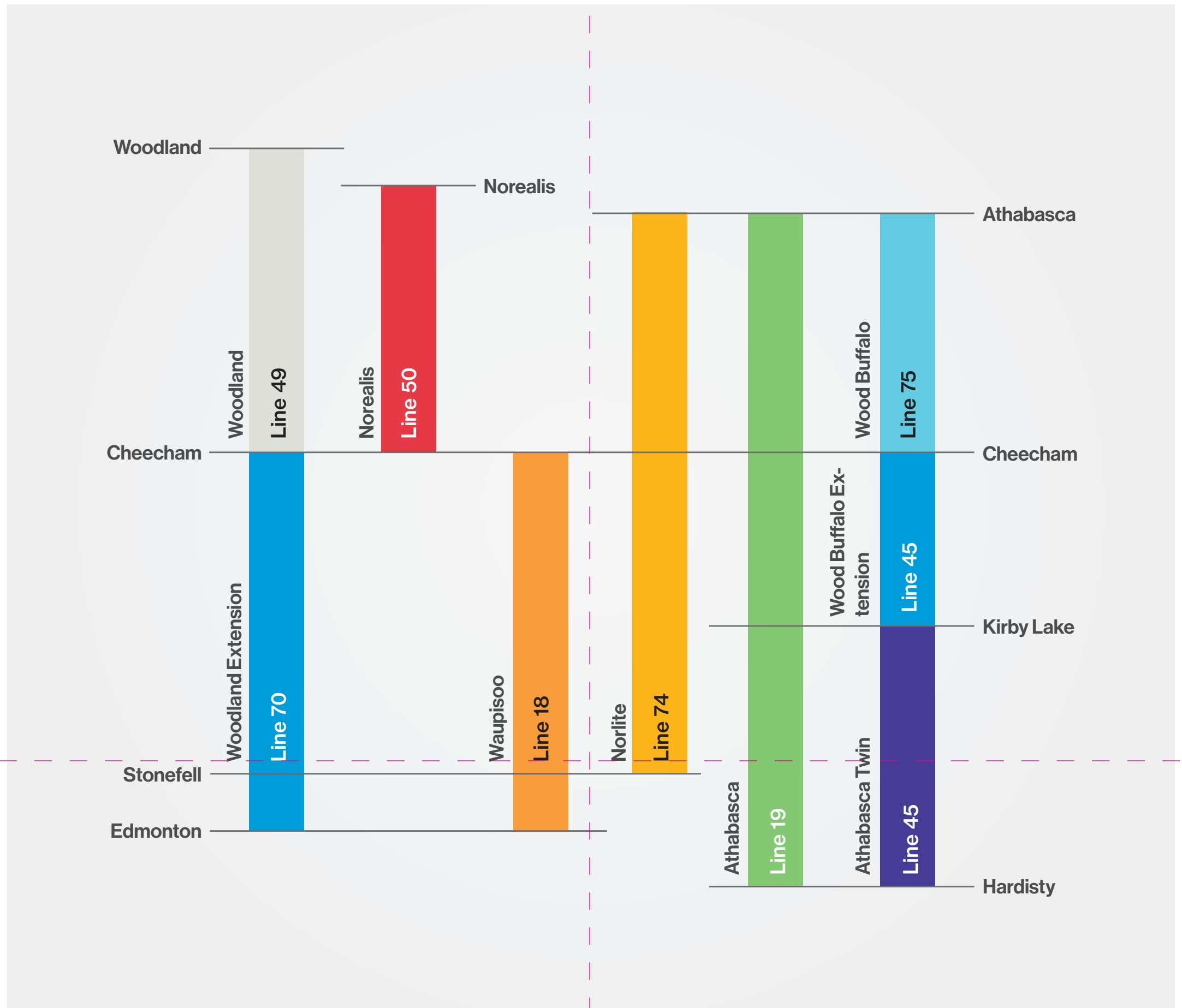


Athabasca Region Major Pipelines



Oil Sands Regional System Configuration

Quarter 1, 2024



Line 18
Waupisoo Pipeline
 550 kbpd
 30" – 380 km
 (236 mi.)

Line 75
Wood Buffalo Pipeline
 550 kbpd
 30" – 100 km
 (62 mi.)

Line 19
Athabasca Pipeline
 570 kbpd
 30" – 546 km
 (339 mi.)

Line 45
Athabasca Pipeline Twin
 800 kbpd
 36" – 347 km
 (215 mi.)

Line 45
Wood Buffalo Extension
 800 kbpd
 36" – 107 km
 (66 mi.)

Line 74
Norlite Diluent Pipeline
 218 kbpd (expandable to 465 kbpd)
 24" – 447 km
 (278 mi.)

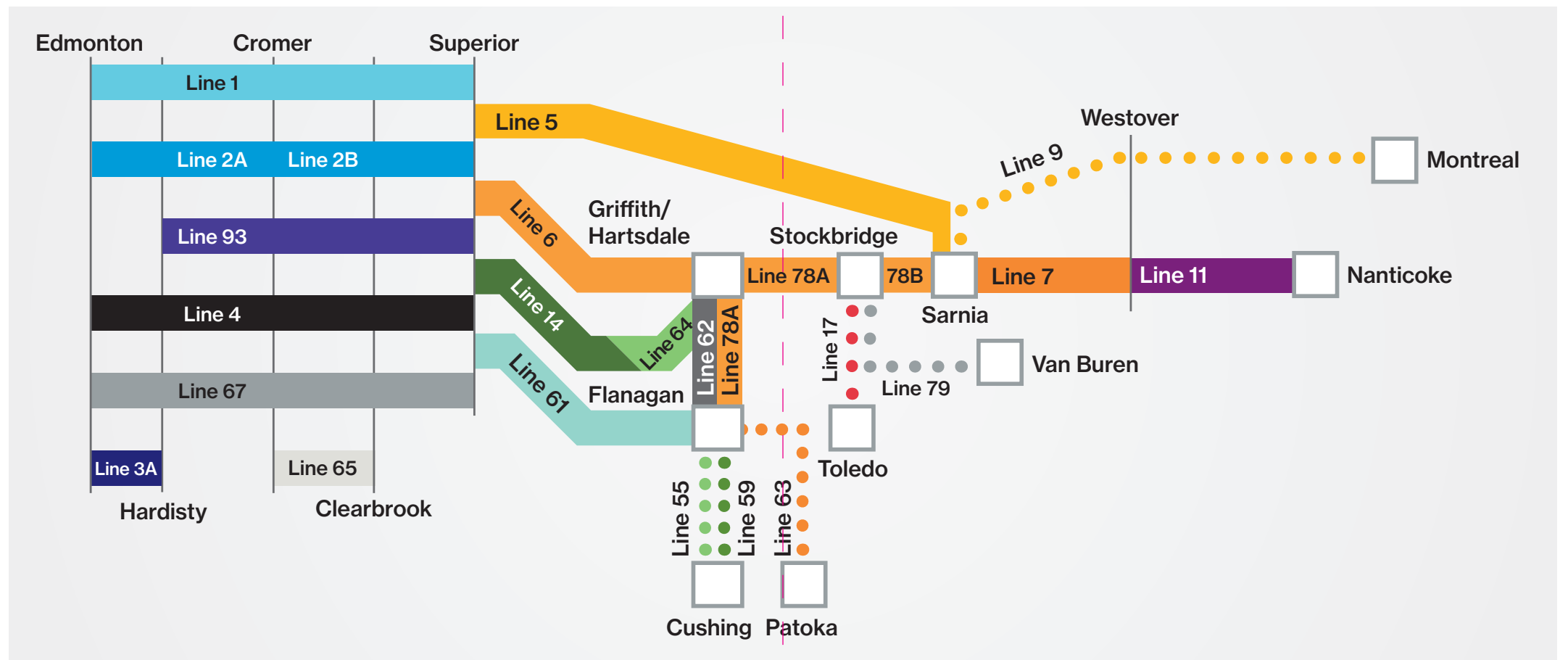
Line 49
Woodland Pipeline
 540 kbpd (expandable to 800 kbpd)
 36" – 142 km
 (88 mi.)

Line 70
Woodland Extension
 540 kbpd (expandable to 800 kbpd)
 36" – 387 km
 (240 mi.)

Line 50
Norealis Pipeline
 90 kbpd (expandable to 270 kbpd)
 24" – 117 km
 (73 mi.)

Mainline System Configuration

Quarter 1, 2024



Line 1

37,600 m³/d
(237 kbpd)
18"/20" – 1,767 km
(1,098 mi.)
- NGL
- Refined products
- Light

Line 93

120,830 m³/d
(760 kbpd)
36" – 1,719 km
(1,068 mi.)
- Light
- Heavy
- Medium
(Ex-Clearbrook)

Line 7

28,600 m³/d
(180 kbpd)
20" – 193 km
(120 mi.)
- Light
- Medium
- Heavy

Line 11

18,600 m³/d
(117 kbpd)
16"/20" – 76 km
(47 mi.)
- Light
- Medium
- Heavy

Line 14/64

54,600 m³/d
(343 kbpd)
24" – 784 km
(487 mi.)
- Light
- Medium

Line 67

127,200 m³/d
(800 kbpd)
36" – 1,790 km
(1,112 mi.)
- Heavy

Line 2A

70,300 m³/d
(442 kbpd)
24" – 966 km
(600 mi.)
- Condensates
- Light
- Heavy

Line 4

126,500 m³/d
(796 kbpd)
36"/48" – 1,777 km
(1,104 mi.)
- Heavy
- Medium
(Ex-Clearbrook)
- Light
(Ex-Clearbrook)

Line 78A

90,600 m³/d
(570 kbpd)
36" – 425 km
(264 mi.)
- Light
- Medium
- Heavy

Line 62

26,400 m³/d
(166 kbpd)
22" – 121 km
(75 mi.)
- Light
- Medium

Line 61

190,800 m³/d
(1,200 kbpd)
42" – 744 km
(462 mi.)
- Light
- Medium
- Heavy

Line 2B

70,300 m³/d
(442 kbpd)
24"/26" – 808 km
(502 mi.)
- Light

Line 5

85,900 m³/d
(540 kbpd)
30" – 1,038 km
(645 mi.)
- NGL
- Light

Line 78B

79,500 m³/d
(500 kbpd)
30"/36" – 175 km
(109 mi.)
- Light
- Medium
- Heavy

Not part of the Enbridge Mainline system

Line 9

47,700 m³/d
(300 kbpd)
30" – 832 km
(517 mi.)
- Light
- Medium
- Heavy

Line 55

30,700 m³/d
(193 kbpd)
22"/24" – 938 km
(583 mi.)
- Light
- Medium
- Heavy

Line 79

12,700 m³/d
(80 kbpd)
20"/16" – 98 km
(61 mi.)
- Light
- Medium
- Heavy

Line 3A

62,000 m³/d
(390 kbpd)
34" – 176 km
(109 mi.)
- Light
- Condensate

Line 6

106,000 m³/d
(667 kbpd)
34" – 748 km
(465 mi.)
- Light
- Medium
- Heavy

Line 65

29,500 m³/d
(186 kbpd)
20" – 504 km
(313 mi.)
- Light
- Medium

Line 17

16,000 m³/d
(100 kbpd)
16" – 142 km
(88 mi.)
- Light
- Medium
- Heavy

Line 59

111,300 m³/d
(700 kbpd)
36" – 954 km
(593 mi.)
- Light
- Medium
- Heavy

Line 63

47,700 m³/d
(300 kbpd)
24" – 270 km
(168 mi.)
- Light
- Medium
- Heavy