



April 1, 2019

Faith Huntington
Director of Electricity and Gas Utilities
Maine Public Utilities Commission
State House Station #18
Augusta, ME 04333-0018

RE: Emera Maine Transmission Line Rebuild or Relocation Projects, 35-A M.R.S.A. §3132(3) and
Minor Transmission Line Construction Projects, 35-A M.R.S.A. §3132 (3-A).

Dear Ms. Huntington:

Pursuant to 35-A M.R.S.A. § 3132(3); (3-A) and Chapters 330 § 8 and 308 § V of the Maine Public Utilities Commission Rules, enclosed is Emera Maine's (also, the Company) annual filing of its Transmission Line Rebuild or Relocation Projects (69 kV and above), and its Minor Transmission Line Construction Projects (69 kV and above) (Chapter 330 Report).

Attached to this letter is a summary list of the projects by category (Attachment A); a map of the service territory depicting the location of all projects (Attachment B); data sheets with detail for all projects (Attachment C); a copy of the Company's most recent depreciation study that includes the useful lives of the poles and conductors that constitute Emera Maine's existing transmission system (Attachment D); and the affidavit required by Chapter 308 § V(6) .

Bangor Hydro District

Emera Maine does not intend to carry out any major or minor Chapter 330 transmission line or transmission substation rebuild, relocation, or new construction projects in the Bangor Hydro District (BHD) in the next five years.

Maine Public District

Emera Maine intends to carry out eleven Chapter 330 transmission line rebuild or relocation projects in the Maine Public District (MPD) in the next five years. Emera Maine does not intend to carry out any transmission substation rebuild/relocation or new transmission line construction projects in the MPD in the next five years.

After working with and receiving feedback from regional stakeholders (such as the Aroostook Energy Association), many of these projects are smaller, phased projects. The Company has determined that targeted rebuilds of specific line sections conducted over longer time periods, rather than larger complete front-to-back line rebuilds, are the preferred line rebuilding method to implement best practice designs. Additionally, with the closing of ReEnergy's Ashland generation facility, the Company

will be studying the performance of the Northern Maine Transmission System to determine whether transmission projects are necessary to address instability concerns or criteria violations that may be uncovered through this analysis.

All rebuild projects listed in this Chapter 330 Report are required to address transmission line condition (i.e. end-of-life, deterioration, weather damage) only. There are no reasonable alternatives to these projects.

Transmission Line Rebuild or Relocation Projects (69 kV and above)

See Title 35-A M.R.S.A. § 3132(3)¹

In the MPD, Emera Maine currently has eleven projects it intends to carry out under this category in the next five years. A brief description of each project listed on chronological order of targeted in-service year follows:

1. Line 1176 Rebuild Phase I (Structure 98 to US/Canada Border)

Description: Line 1176 is 138kV and is MPD's only NERC transmission asset, elevating its importance within the MPD system. Many of the wood poles comprising Line 1176 H-frame structures were placed in-service in 1957 and are approaching end-of life. Emera Maine has shifted the rebuild planning for this line to year 2021 due to the completion of the Line 6901 upgrade and because the biomass generators are continuing to run; however, with the recent announcement of ReEnergy's Ashland generation facility closing and the results of extensive 2018 qualitative inspections, the Company determined that it needed to develop a phased approach to the rehabilitation of this critical Bulk Electric System transmission line. The first phase, to be completed in 2019, will rebuild a short 0.8 mile section of Line 1176 near the US/Canada border and widen the existing ROW from its present 100' wide ROW to 150'. It will also change the line's current configuration from horizontal (H-frame structures with wood pole crossarms) to vertical (single wood poles with horizontal line post insulators), replace the smaller 226.8 ACSR wire with higher ampacity 795 ACSR conductors and raise these wires higher above the ground. This new line segment will address conductor side blowout and NESC conductor to ground clearance concerns by locating Line 1176 conductors higher and further away from the edge of the utility maintained ROW, reducing the likelihood of contact by trees falling into the ROW: a situation that has happened each of the past three years resulting in outages. An overhead static wire will be placed on top of the new single wood poles to provide effective shielding from lightning and an in-line transmission switch will be installed. Going forward, this transmission switch allows Emera Maine System Operators to sectionalize the Company's 12 mile segment of Line 1176 for planned and unplanned maintenance purposes – this will be particularly important to execute the phased rebuild of Line 1176.

¹ Title 35-A M.R.S.A. § 3132(3) requires each transmission and distribution utility to file an annual report of the "transmission line rebuilding or relocation projects that it intends to carry out during the next five years...that will become, or remain at, 69 kilovolts or more."

2. Line 1176 Rebuild Phase II (Structure 42 to 97)

Description: Line 1176 Phase II project will rebuild a 6.4 mile long segment of this transmission asset from structure 42 to structure 97. Similar to Phase I work, this project is needed to address poor condition assets approaching end-of-life and to address blowout/NESC clearance concerns and the potential for tree contact from nearby vegetation located along the side of the utility maintained ROW. This Phase II project will widen the line's existing ROW, change the its configuration from horizontal (H-frame structures with wood pole crossarms) to vertical (single wood poles with horizontal line post insulators), replace the smaller 226.8 ACSR wire with higher ampacity 795 ACSR conductors and improve conductor to ground clearance needed to mitigate NESC clearance concerns. An overhead static wire will be placed on top of the new single wood poles for the purpose of providing effective shielding from lightning. This project is planned for 2020.

3. Line 1176 Rebuild Phase III (Structure 3 to 41)

Description: Line 1176 Phase III project will complete the rehabilitation of this critical transmission line by rebuilding the 4.8 mile segment from structure 3 to structure 41. Similar to the Phase I and Phase II efforts, this work is needed to address poor condition assets approaching end-of-life and to address blowout concerns and the potential for tree contact from nearby vegetation. This rebuild project will widen the line's existing ROW, change its current configuration from horizontal (H-frame structures with wood pole crossarms) to vertical (single wood poles with horizontal line post insulators), replace the smaller 226.8 ACSR wire with higher ampacity 795 ACSR conductors and mitigate blowout/NESC clearance concerns. An overhead static wire will be placed on top of the new single wood poles for the purpose of providing effective shielding from lightning. This project is planned for 2021.

4. Line 6901 Construction Fort Fairfield Tap

Description: The transmission tap from Line 6901 to the MPD Fort Fairfield distribution substation is 1.2 miles long and comprised of wood poles placed in-service in early 1960s. According to the most recent comprehensive ground line wood pole strength and condition assessment half of all original wood poles have internal decay and one was rejected due to insufficient shell strength. This project is currently under construction and when completed will have removed from service rejected wood poles and others in deteriorated condition while also addressing five wood poles currently located in an expansive beaver swamp by replacing them with a composite pole alternative resistant to rot/decay. The exiting 3/0 ACSR conductor will be retained and transferred to this new transmission line.

5. Line 6903 Rebuild (Pole 57 to 126)

Description: Line 6903 is a 69kV transmission line that connects MPD's Limestone Switching Station to Caribou Substation. This line is part of a key transmission loop for reliability within the MPD system transmission core. Because more power is exported during periods of light load and maximum generation, it can be more heavily loaded than Line 6904. Line 6903 was

originally constructed in 1961 and is now reaching an age at which inspections are finding more widespread pole decay and damage. In the summer and fall of 2018, the Company performed updated qualitative strength and visual condition assessments of wood poles comprising the Line 6903 segment between its Otter Creek Substation and Limestone Switching Station. A ground line internal condition assessment identified 29 wood poles with insufficient shell thickness/strength and another six with marginal strength that will likely transition to “reject” status in one to three years as internal decay continues. A recent visual examination of Line 6903 facilities identified numerous other wood poles with long deep vertical cracks, shell rot, mechanical damage, splintered bases, excessive or large woodpecker holes and wood pole tops damaged by lightning strikes.

This condition focused project will rebuild a 3.8 mile section of Line 6903 with the most rejected wood pole and lightning damage; (poles 57 through 126). Taller and heavier class wood poles with a larger 795 ACSR conductor will be installed across the road to facilitate local telephone and communication utilities joining onto a common pole line at some time in the future. An overhead static wire will be installed on the top of this new line section to provide more effective lightning protection where none exists today and all hollow brown glass post type insulators, which have a high incidence of failure, will be replaced with polymer clamp type insulators. This project is planned for 2019.

6. Line 6903 Rebuild Loring Tap

Description: This project would rebuild the 1.6 mile long Line 6903 tap to the Company’s Loring Substation and the Loring Commerce Center (a potential industrial expansion site). This project is needed to remove from service aging transmission assets (poles and crossarms) in poor condition and approaching end-of-life. This rebuild project would place in-service taller and heavier class poles and horizontal polymer clamp-type line post insulators. The existing conductor would be retained for now but because of the taller and heavier class poles a larger gauge wire could be quickly and easily installed should load growth or generation materialize at this industrial site in the future. This project is planned for 2023, a year after the next scheduled full scale strength and condition assessment of Line 6903 tap line wood poles.

7. Line 6905 Rebuild (Structure 50 to 80)

Description: This project would rebuild a four mile long segment of the southern ROW section of Line 6905. According to the most recent comprehensive ground line wood pole strength and condition assessment performed in 2013, slightly more than 60% of all original wood poles comprising the line’s southern ROW segment had some level of internal decay, 57% had diminished shell thickness and 31% had reduced strength due to advanced decay. Follow-up treatment of southern section ROW wood poles with internal decay discovered that seven had progressed to the “reject” stage and require replacement. This level and severity of decay is expected to increase as these aging wood poles placed in service in 1964 continue to age. This project is planned for 2023 and begins the rebuild of this 41 mile long transmission line by addressing a 4 mile segment in the deteriorating condition.

8. Line 6913 Construction (Presque Isle Switching Station to Pole 160)

Description: This project will rebuild the relatively short 1.2 mile ROW segment of this line from the Company's Presque Isle Switching Station to pole 144 because of deteriorated wood poles. It will also replace 1.8 miles of smaller capacity 3/0 ACSR conductor with 795 ACSR wire from Presque Isle Switching Station to roadside pole 160 for the purpose of lowering overall line impedance and helping to improve voltage regulation in the Ashland Region. This project is currently under construction, which was originally planned for completion in 2018 but was delayed due to lack of available resources.

9. Line 6915 Construction (Flo's Inn to North Presque Isle Substation)

Description: This project would rebuild the segment of Line 6915 from Flo's Inn to the Company's North Presque Isle Substation, a distance of 3.0 miles, removing from service wood poles and wood pole crossarms in deteriorated condition and substituting 795 ACSR wire for the 336.4 ACSR in use on today. Because the design temperature of the 336.4 ACSR wire is 120 degrees F this transmission line is severely sag limited during the summer months. This project would address this short coming while also improving the overall reliability of the line by removing from service deteriorated plant that could fail and result in an outage for customers. This project is planned for construction in 2022.

10. Line 6930 Rebuild (Dow Siding Road to Maysville Siding Road)

Description: Line 6930 is a 69kV transmission line that connects the MPD Caribou Stations to its Ashland Substation. This transmission line segment rebuild project is planned for 2020 and will address the three mile segment from Dow Siding Road to Maysville Siding Road through the removal from service of 1950s era wood poles with high rates of internal decay and wood pole crossarms in deteriorated condition. Because the Company is planning to replace the existing 336 ACSR wire in this targeted line segment with a higher ampacity alternative the overall impedance of Line 6930 will decrease, which will benefit voltage regulation in the Ashland Region.

11. Line 6950 Rebuild (Westfield to Mars Hill Switching Station)

Description: This project would rebuild the Line 6950 segment from the Company's Westfield Substation to its Mars Hill Switching Station. This line segment is 3.4 miles long and comprised of 30 H-frame wood pole structures with wood pole crossarms and 336.4 ACSR wire. This line segment was originally constructed in 1964. Slightly less than 60% of the wood poles comprising this line segment have internal decay and 26% of these have reduced shell thickness/strength because of rot discovered in 2011. The level and severity of internal and external decay is expected to increase as these wood poles age and will be reassessed on 2021, a year prior to its proposed rebuild. Line 6950 runs alongside and operates in parallel with Line 6940. Together, these lines provide a strong and reliable 69kV backbone transmission power flow source for more than 5,000 MPD customers and the thousands more served indirectly by Eastern Maine

Electric Cooperative (EMEC) and Houlton Water Company (HWC). This project is planned for 2022.

Minor Transmission Line Construction Projects (69 kV and above)

See Title 35-A M.R.S.A. § 3132(3-A)²

Emera Maine does not intend to carry out any new transmission line construction projects in the next five years.

Notable 2019 Chapter Report Inclusions & Removals

Notable inclusions in this year's Chapter 330 Report and removals from the Company's 2018 Report include: (1) new inspection data obtained by Asset Managers supported a shift in Line 1176's rebuild plan from a complete rebuild in 2021 to a three-year phased rebuild beginning in 2019; (2) the reduction in scope of the Line 6903 project from a complete line segment rebuild from Otter Creek Substation to Limestone Switching Station to a targeted line segment rebuild (pole 57 to 126) to address wood poles at end-of-life condition due to internal decay and lightning strikes; (3) removal of conceptual projects Line 6930 Rebuild (Maysville Siding Road to Washburn Substation) and Line 6930 Rebuild (Washburn to Ashland Substations) until such time that additional condition assessment data warrants larger rebuild efforts in lieu of targeted maintenance activity.

We look forward to meeting with you in April to review the projects in greater detail. In the meantime, please contact Dave Norman at (207) 973-2708, Steve Sloan at (207) 973-2568 or me at (207) 973-2819 if you have any questions about this filing.

Sincerely,

/s/Arielle Silver Karsh

Arielle Silver Karsh

Senior Regulatory Counsel

² Title 35-A M.R.S.A. § 3132(3-A), requires transmission and distribution utilities to separately report minor transmission line construction projects. A minor transmission line construction project is defined as "...a transmission line construction project, the cost of which does not exceed 25% of the utility's current annual transmission property depreciation charge." For 2018, 25% of Emera Maine's annual transmission property depreciation charge is \$3,667,443.

Attachment A

Project Progress Update from 2018 Filing

Line 6913 Construction – Main Street Mapleton to Mapleton Substation (Completed)

Transmission Line Rebuild or Relocation Projects (69 kV and above)

Line 1176 Rebuild Phase I (Structure 98 to US/Canada Border)

Line 1176 Rebuild Phase II (Structure 42 to 97)

Line 1176 Rebuild Phase II (Structure 3 to 41)

Line 6901 Construction – Fort Fairfield Tap (***)Under Construction)

Line 6903 Rebuild (Pole 57 to 126)

Line 6903 Loring Tap Rebuild

Line 6905 Rebuild (Structure 50 to 80)

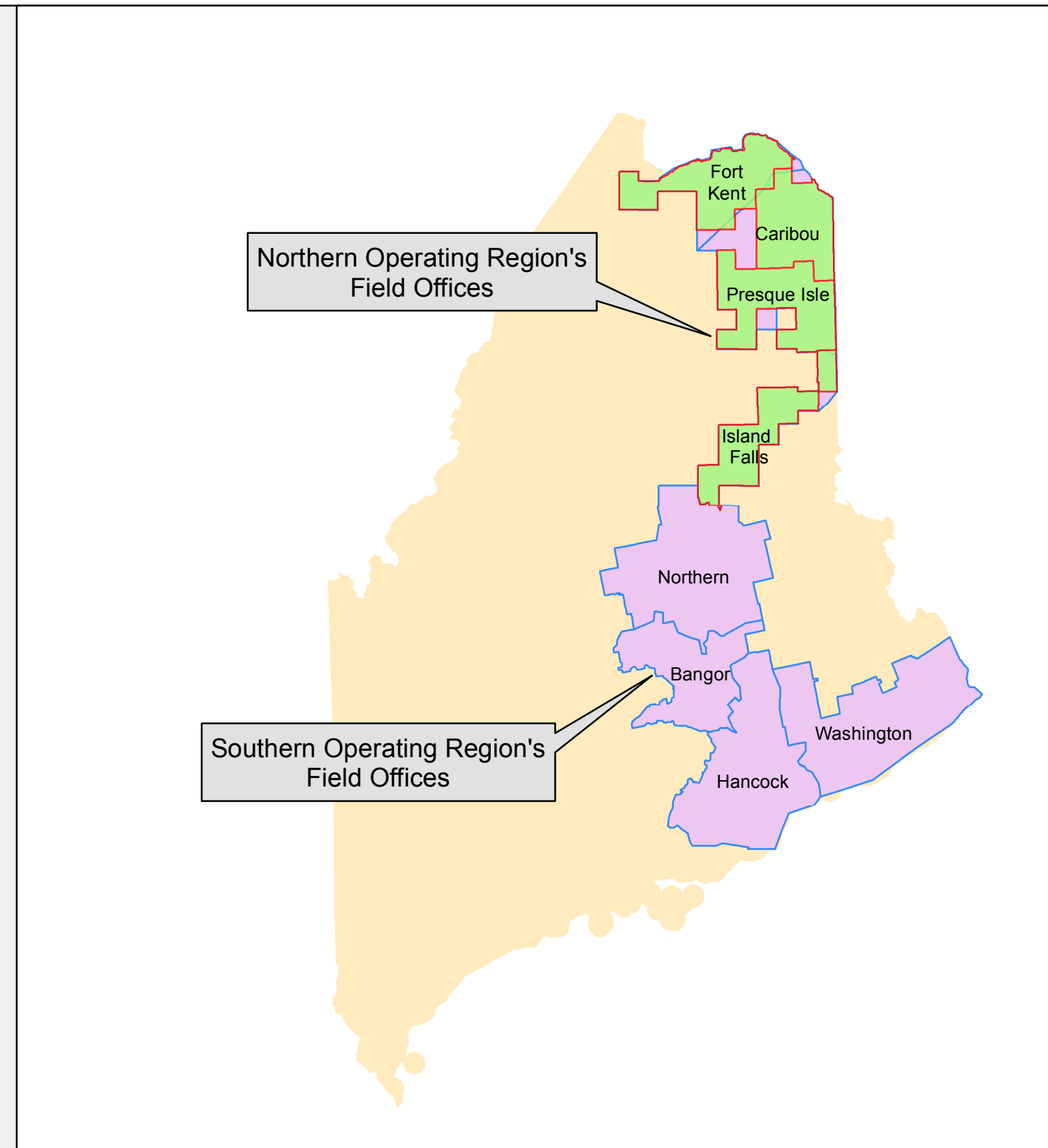
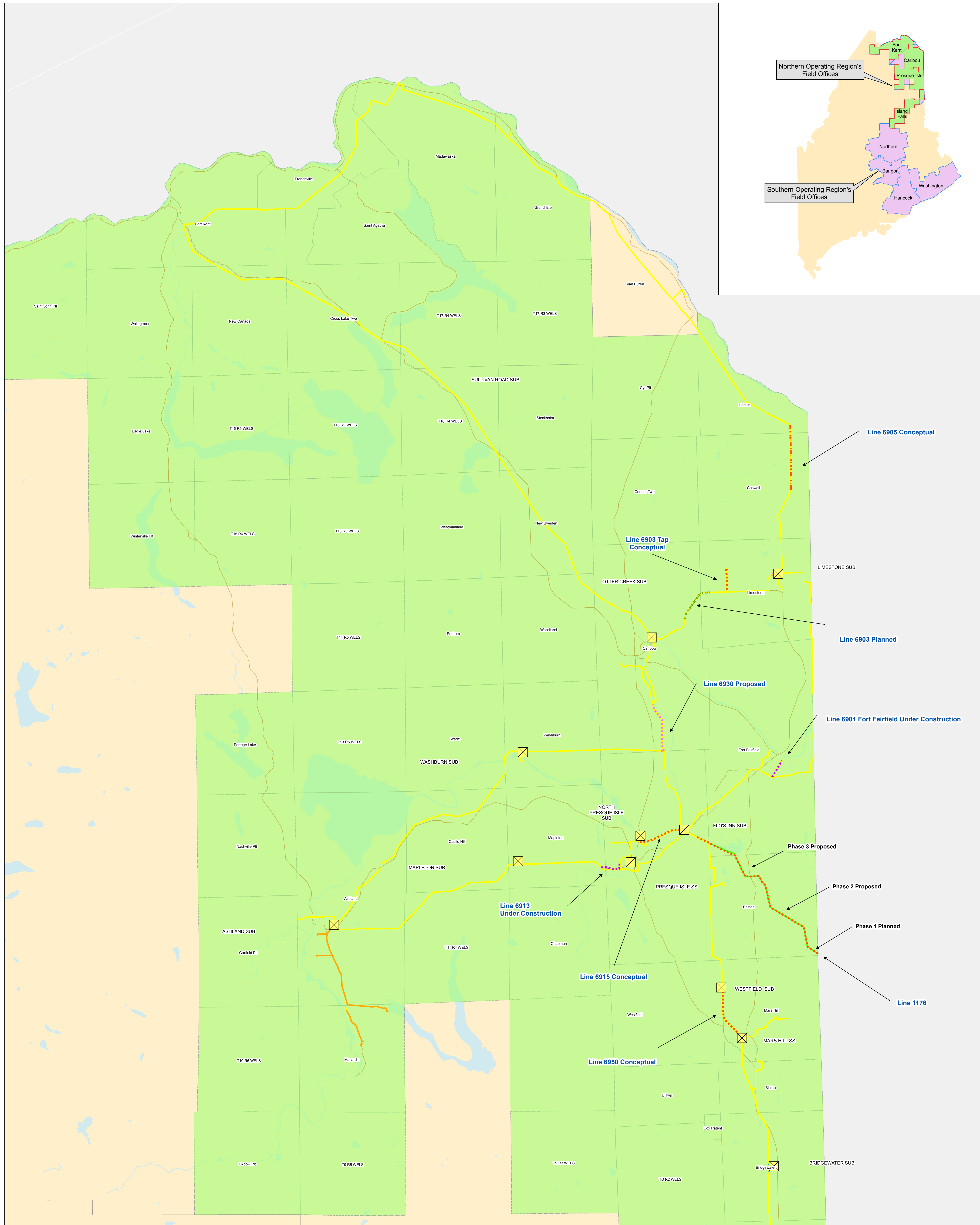
Line 6913 Construction – Presque Isle Switching Station to Pole 160 (***)Under Construction)

Line 6915 Construction – Flo's Inn to North Presque Isle Substation

Line 6950 Rebuild (Westfield to Mars Hill Switching Station)

Line 6930 Construction – Dow Siding Road to Maysville Siding Road

Minor Transmission Line Construction Projects (69kV and above)



Chapter 330 Project Area Status

- In Service
- Under Construction
- Planned
- Proposed
- Conceptual

Substations

- Substations
- Existing Transmission Lines
- 19.9 KV
- 34.5 KV
- 44/46 KV

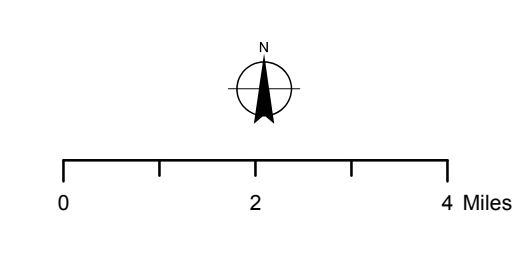
Transmission Lines

- 69 KV
- 115/138 KV
- 345 KV

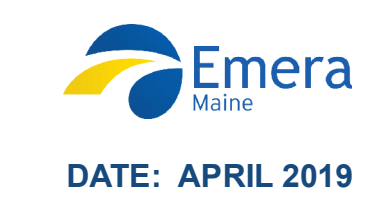
Operating Regions

- Northern Operating Region
- Southern Operating Region

DATA SOURCES: MAINE OFFICE OF GIS, ESRI, AND EMERA MAINE
 PROJECTION: NAD 1983 UTM ZONE 19N



EMERA MAINE
 NORTHERN OPERATING REGION
 AND TRANSMISSION SYSTEMS
 PROJECTS IN CHAPTER 330 FILING



DATE: APRIL 2019