



November 14th, 2019

Presentation to County of Inverness Council

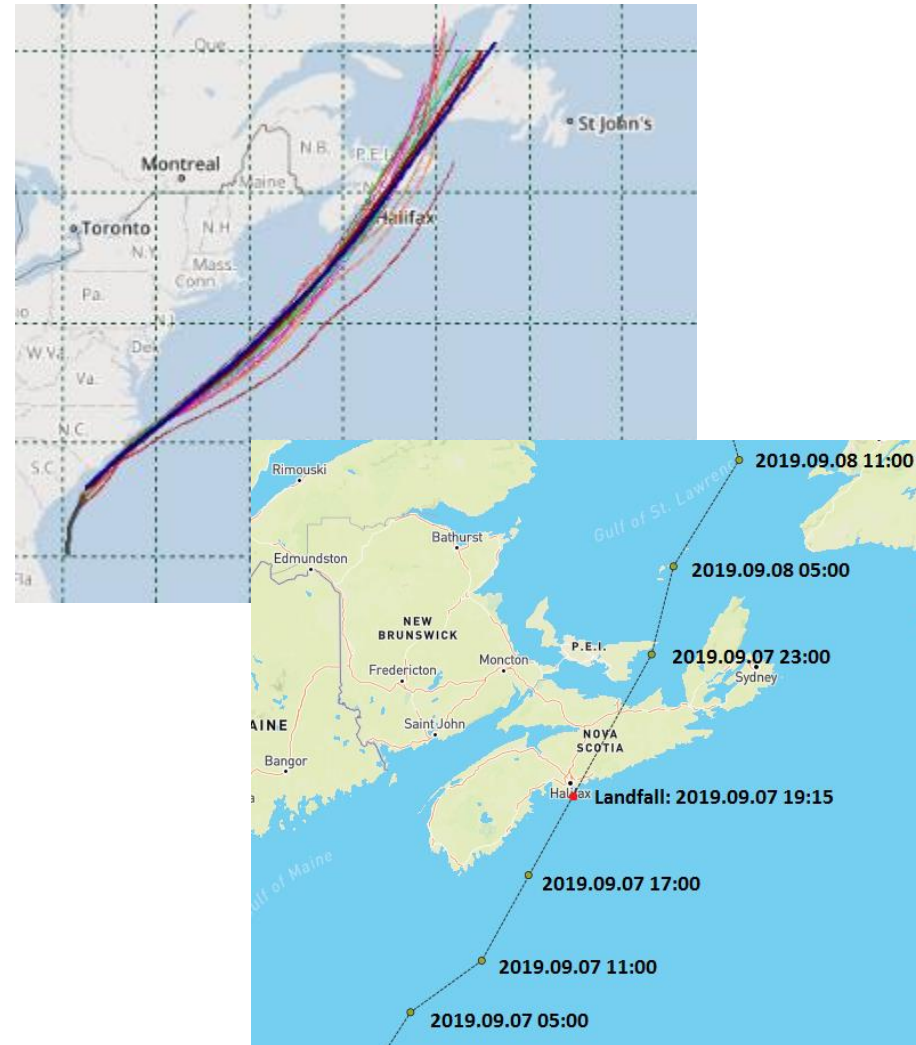
Safety During Storm

- Message delivered by our Executive Leadership Team and echoed by our Premier: **"Safety over Speed"**.
- Safety Stand Down the night of the storm. **All employees and contractors were stood down** on Saturday, September 7th at the onset of 90 km/hr winds, and the stand down ended across the province on Sunday, September 8th at 6 AM. A risk assessments process allowed for response to emergencies; this process was utilized approximately 20 times provincially.
- Both Transportation & Infrastructure Renewal and Department of Labour & Advanced Education helped NS Power provide safe traffic control for all crews during storm event.
- **880 Safety Orientations and over 300 vehicle inspections** administered throughout the event. All vehicles coming into the province were inspected to ensure our standards were met.

Incident Type	Contractors	NS Power
Medical Aid	1 (allergic reaction to wasp sting)	1 (injured leg while moving table)
Lost Time	1 (slip/trip/fall off line truck)	0

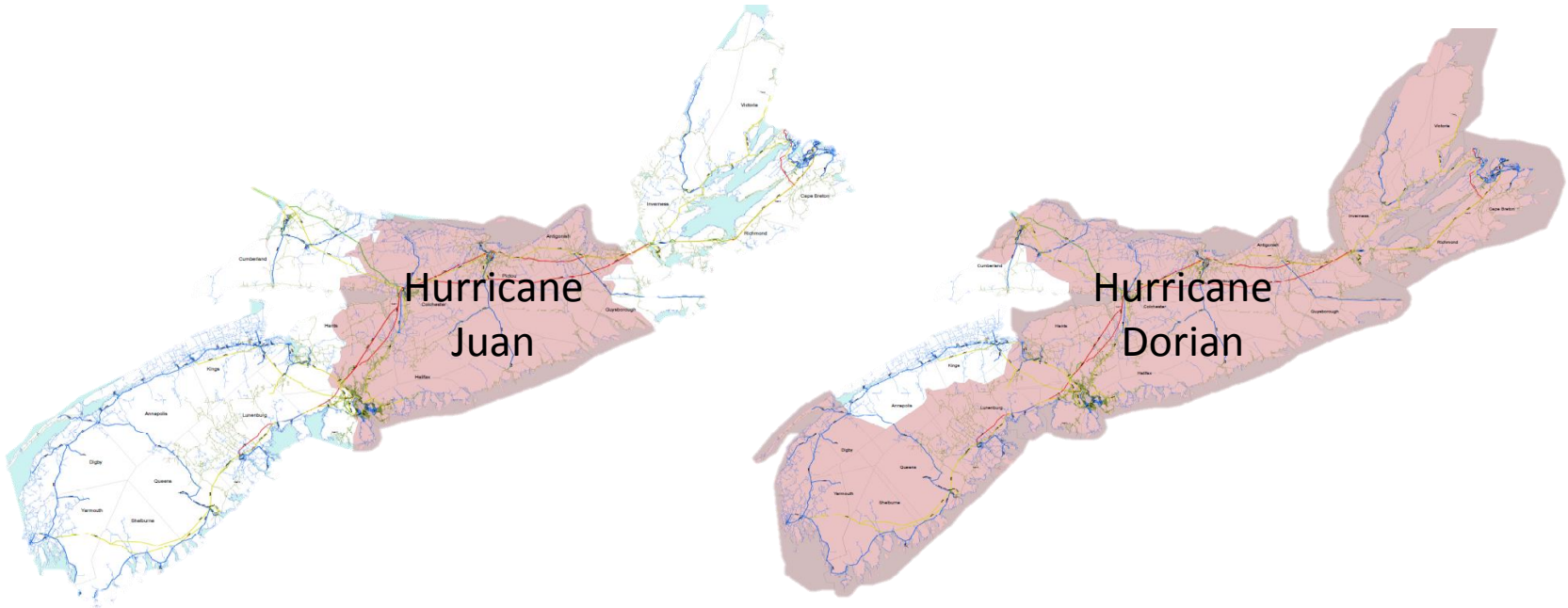
Storm Track

- Dorian's forecast track **consistently identified a Nova Scotia landfall** in the days prior to the storm's arrival. With this forecast, NS Power was able to scale up resources to an unprecedented level prior to a storm making landfall.
- In Environment Canada's update on September 6th, they indicated that **"a landfall anywhere from Yarmouth to Cape Breton is still possible"**.
- As the track of the storm shifted, the corresponding forecasted damage and number of customer impacted was adjusted based on the power system infrastructure at risk:
 - 04/09/2019 Forecast –86k-207k customers
 - 05/09/2019 Forecast –126k-240k customers
 - 06/09/2019 Forecast –125k-237k customers
 - 07/09/2019 Forecast –163k-355k customers
- September 7th Hurricane Dorian makes landfall in Nova Scotia at Sambro Creek near Halifax, the peak gusts at landfall of 136 km/hr. Due to the size of the storm and the landfall location, the entire province was impacted by Dorian.

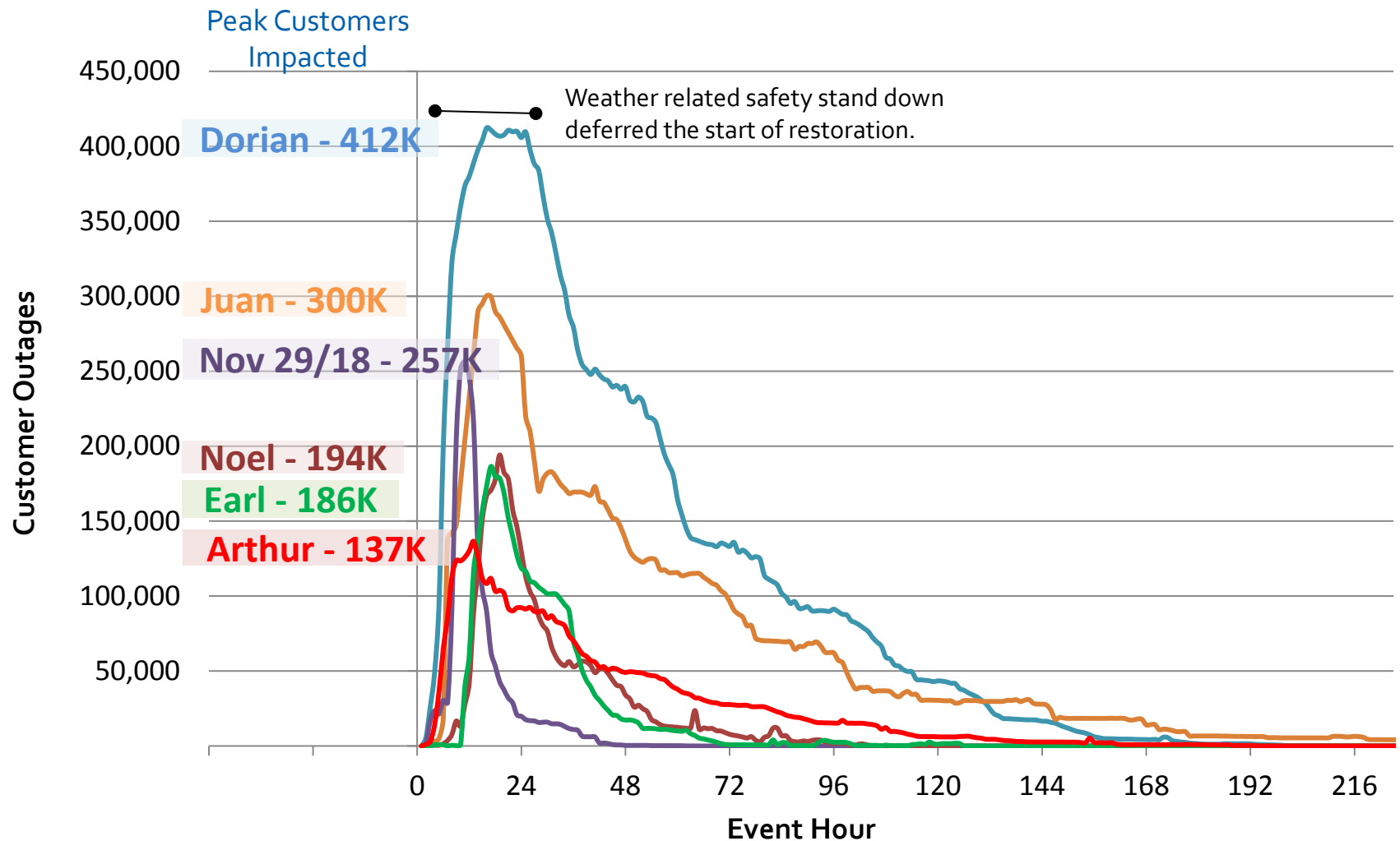


Juan compared to Dorian

- The maps below highlight the work depots in the province that experienced **wind gusts over 100km/hr** in Juan and Dorian.
- Although the peak wind speeds in Dorian were less than Juan, the size of the storm and **impact to the power system was substantially more significant in Dorian**. This led to more damage and hence the need for additional resources to complete restoration.
- There were several conditions that led to Dorian having a provincial wide impact on the power system: track of the storm through the middle of the province, **size of the storms' wind field, speed and duration of sustained winds & wind gusts, leaves were on trees and the ground was not frozen.**



Extreme Weather Event Restoration

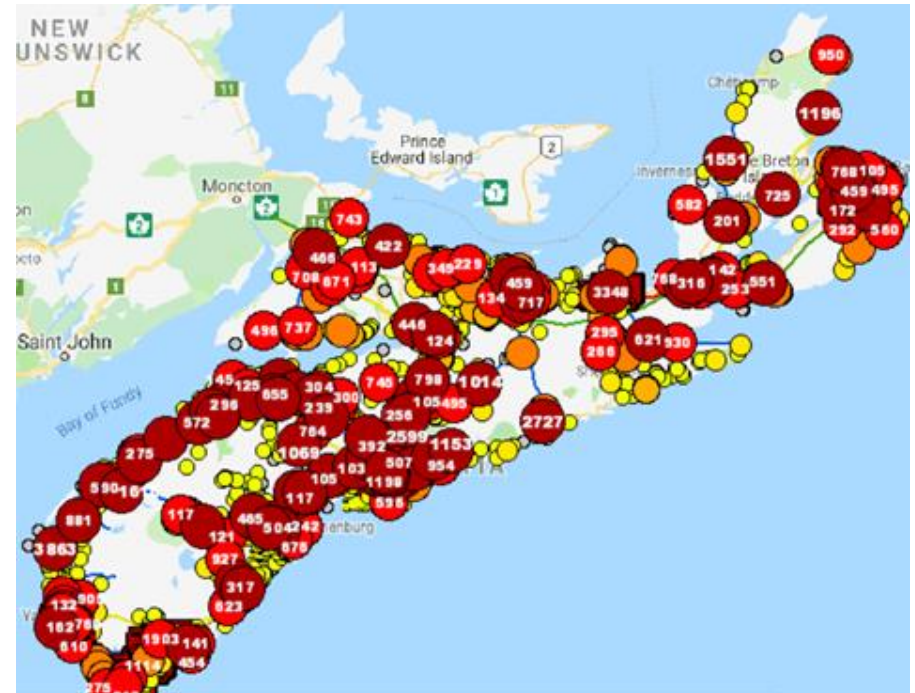


Restoration Response



Customer Impact

- At the peak of the storm approximately **412K customers** were impacted. This was the most impactful storm in our company's history, impacting 100k more customers than Hurricane Juan at peak.
- The outage event count at peak was approximately 3,200. Ultimately, **over 9,000 outage events** were restored.
 - Further damage from high winds throughout the system continued to occur following initial outages prior to restoration.
 - The large number of full feeder outages and transmission line outages masked the full count of events.



Inverness Area Crew Number

- In its normal operations, NSP has 72 power line technician (PLT) crews located around the province. During Hurricane Dorian, NSP contracted an additional 220 PLT crews and 140 vegetation or tree clearing crews to begin the event. These resources were pre-staged around the province in anticipation of the weather event.
- There were 19 crews assigned to the area from Mabou to River Bourgeois. Each day, we increased crews in areas requiring more assistance due to the amount and severity of the damage in that area. The number of crews in the lower Cape Breton area grew to a peak of 50 crews. A “crew” is a team of powerline technicians or forestry team.

Date	Crews
Sat. Sept 7, 2019	19 Crews
Sun. Sept 8, 2019	30 Crews
Mon. Sept 9, 2019	30 Crews
Tues. Sept 10, 2019	30 Crews
Wed. Sept 11, 2019	30 Crews
Thurs. Sept 12, 2019	35 Crews
Fri. Sept 13, 2019	35 Crews
Sat. Sept 14, 2019	50 Crews

Customer Care Response

- **Over 150 Customer Service Associates** worked 24 x 7 on 12 hour shifts.
- 75,000 customers reported their outage or checked their ETR status through the online tool.
- 13,500 personal outbound calls were made to customers to check in and confirm ETRs. Estimated restoration times were available for customers through the Outage Map, Outage Reporting & Status, High Volume Call Answer and through a Customer Service Associate for the duration of the event.
- 92% of customers had two changes or less to their default system generated ETR. Approximately **80% of ETRs provided to customer were achieved.**
- 72% of customers were satisfied with NS Powers' response during Hurricane Dorian, compared to 52% in Post Tropical Storm Arthur.

Storm Metrics	Hurricane Dorian
Total Outage calls delivered to NSP outage line	448,000
Number of customers who opted to self serve via outage line	361,000
Customer Service Associate answered calls (live)	57,000
Customers using online reporting	75,000
Average speed of Answer	2 mins 26 secs
Service Level (% answered in 45 seconds or less)	94%
Views of Outage Map	3.6 M

Restoration Process

- Nova Scotia Power restores power in phases to ensure critical services like hospitals can stay open before beginning work in other areas. Larger outages on transmission lines and in substations are restored ahead of smaller outages to safely restore electricity to the greatest number of customers as quickly as possible. The phases are as follows:
 - Phase 1 - Restoration of public safety issues and emergency situations
 - Phase 2 - Restoration of NS Power critical infrastructure such as transmission lines and substations
 - Phase 3 - Restoration of Emergency Management Office (EMO) critical infrastructure
 - Phase 4 - Restoration of main electrical feeders servicing communities and neighbourhoods
 - Phase 5 - Restoration of branch power lines servicing individual streets
 - Phase 6 - Restoration of individual homes and businesses

Emergency Management Office (EMO) Response

- The Emergency Management Office coordinates opening with NS Power, during Dorian NS Power had a team stationed at Provincial and Halifax Regional Municipality EMO for the duration of the event.
- A NS Power task force was activated to manage EMO priorities, escalations, and cell tower outages to ensure timely restoration. **18 crews were dedicated to EMO priorities.** Over 380 escalations were managed for outages affecting critical infrastructure such as **Medical , Water & Sewage, Fire and Telecom facilities.**
- NS Power assigned a lead to coordinate with Mi'kmaw leaders during this event. Power restoration was prioritized for key infrastructure identified by Mi'kmaw leaders.
- Military provided logistical support including: Accommodations (Camp Aldershot and CFB Shearwater), Wellness checks on rural customers and Road clearing.



Inverness Area Vegetation and Engineering Investments

- Total Investments in Inverness Area for Vegetation Management 2016-2020:

\$4.6 Million

- Total Engineering Investments in Inverness Area for 2016-2019:

(Investments in equipment to stabilize and/or improve Reliability)

2016: \$814,000

2017: \$70,000

2018: \$300,000

2019: \$1,060,000

Total: \$2.24 Million

- 85S-401 Project Update

- Open House hosted jointly between NSP and Parks Canada
- Project approved and work underway
- Last week energized new line on Broad Cove

