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Item No. 14.1
Halifax Regional Council
July 9, 2024
August 6, 2024

TO: Mayor Savage and Members of Halifax Regional Council

FROM: Cathie O'Toole, Chief Administrative Officer

DATE: May 21, 2024

SUBJECT: July 2023 Rain Event – Status of Repairs

INFORMATION REPORT

ORIGIN

March 19, 2024 – Regional Council (Item 15.5.1)

MOVED by Councillor Blackburn, seconded by Councillor Lovelace

THAT Halifax Regional Council direct the Chief Administrative Officer to work with Halifax Water, Government of Nova Scotia Department of Public Works, Halifax Regional Municipality Planning & Development and Public Works to prepare a report on the status of flood damage and repairs from the July 2023 floods.

MOTION PUT AND PASSED UNANIMOUSLY

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, R.S.N.S. 2008, c. 39:

Purposes of Municipality

7A The purposes of the Municipality are to

- (a) provide good government;
- (b) provide services, facilities, and other things that, in the opinion of the Council, are necessary or desirable for all or part of the Municipality; and
- (c) develop and maintain safe and viable communities.

Street related powers

322 (1) The Council may design, lay out, open, expand, construct, maintain, improve, alter, repair, light, water, clean, and clear streets in the Municipality.

BACKGROUND

On July 21, 2023, Halifax Regional Municipality received a record amount of rain (the July Rain Event) resulting in significant damage to private property and municipal infrastructure. Halifax Water and the Municipality worked in collaboration to ensure stormwater infrastructure was inspected and repaired on a priority basis taking into consideration public safety and established stormwater management roles and responsibilities.

Halifax Water is responsible for the efficient flow of stormwater through the stormwater system (ditches, culverts, catchbasins, retention ponds, and other public stormwater assets) within the Halifax Water Stormwater Boundary. The Municipality is responsible for roads, road shoulders, bridges, curbs, and gutters, which also make up the stormwater system, as well as street level blockages to catchbasins. The Municipality is also responsible for maintaining stormwater infrastructure on municipally owned streets that fall outside of the Halifax Water Stormwater Boundary.

DISCUSSION

The Municipality's Infrastructure Maintenance & Operations (IMO), Design & Construction, and Project Planning & Asset Management divisions were involved in the July Rain Event response.

IMO is responsible for responding to service requests generated when members of the public report an issue to 311 in relation to right of way infrastructure. IMO received a total of 348 service requests related to the July Rain Event. The majority of service requests were for active flooding and stormwater infrastructure repairs. See **Attachment A** for a list of service request descriptions, status (open or closed) and totals. At the time of this report, all but 2 service requests have been closed. Service requests were addressed by Right of Way Infrastructure Inspectors as well as Works Supervisors and Contract Supervisors, who would initiate work orders following site inspections should repairs be required. Work orders were also created from systematic patrols of municipally owned roads to inspect right of way infrastructure. In the immediate aftermath of the July Rain Event, Project Planning & Asset Management performed inspections of bridges. The division also performed an audit of walkways, which IMO used to create work orders. IMO has completed 1730 work orders for damage caused by the July Rain Event. Most of the repairs completed by IMO were for washed out road shoulders. IMO has a total of 103 outstanding work orders, 57 of which are currently assigned to in-house crews or contractors. See **Attachment B** for a list of work order descriptions, status (open or closed) and totals. Work packages for the outstanding work orders will continue to be assigned as in-house crew and contractor resources become available.

Design & Construction supported IMO with recovery efforts for the July Rain Event. Work orders that were deemed beyond the division's capabilities were sent to Design & Construction. Most often these were road shoulder washouts where the roadbed was compromised. Design & Construction has completed 63 work orders and has 7 outstanding. See **Attachment C** for a list of work order descriptions, status (open or closed), and totals. All 7 of the outstanding work orders have been tendered and awarded to contractors with work either anticipated to start soon or already ongoing.

Halifax Water received a total of 977 service requests related to the July Rain Event. Service requests are created by the public calling Halifax Water's Customer Care Centre. At the time of this report, 248 non-emergency stormwater investigations were outstanding. Based on experience, Halifax Water estimates that of the 248 outstanding service requests, 50% may lead to no work required and 50% may lead to minor maintenance. See **Attachment D** for a list of service request descriptions, status (open or closed), and totals. Halifax Water creates an investigation work order based on descriptions included in service requests, which triggers a site visit, and a repair work order will be created if deemed necessary by the site visit. At the time of this report, Halifax Water had completed a total of 1033 work orders and had 189 outstanding. See **Attachment E** for a list of work order descriptions, status (open or closed), and totals. All 189 outstanding work orders are considered non-urgent and will become part of Halifax Water's routine scheduling of work based on priority. Large cross culverts have been passed onto Halifax Water's engineering department which will be tendering 3 work orders soon with 3 more in the queue for this year

or next year. Most of these are on watercourses requiring more time to design and review with NS Environment and Climate Change and the Department of Fisheries and Oceans and potentially requiring permits, but all are currently in stable condition. Halifax Water has an annual \$1.2M capital program to replace driveway culverts and any high priority ones identified from the July Rain Event will be replaced, others will be prioritized accordingly. Halifax Water also has plans to repair a few stormwater easements over the summer.

Halifax Water is performing a data exercise to identify locations where ditching is required due to shoulder washouts. The findings of this exercise will be shared with IMO.

Aside from redirecting service requests that were received for provincially owned roads to Nova Scotia Department of Public Works (NSDPW), there was no significant interaction with the province by either Halifax Water or the Municipality concerning the July Rain Event repair efforts. NSDPW reported nearly 1000 sections of provincially owned paved and gravel roads were damaged by the July Rain Event and have since been repaired. NSDPW's response to the July Rain Event included road and shoulder washout repairs, culvert replacements and bridge remediation. 31 of NSDPW's bridges sustained damage requiring minor repairs, extensive work, or replacement. NSDPW reported 13 bridges were lost. Of the lost bridges, 1 has been replaced, 7 are scheduled for replacement in 2024-25 and 5 are scheduled for replacement in 2025-26.

The sheer volume of damage caused by the July Rain Event was a significant challenge to Halifax Water and IMO's response efforts. Contractor availability also posed a major hurdle in addressing repairs, as many contractors were already engaged in capital projects and other municipal tenders. Debrief meetings were held between Halifax Water and the Municipality's IMO and Design & Construction divisions. Key takeaways to assist with future events include IMO to work with Enterprise Asset Management to improve work order tracking and cost analysis through Cityworks; and a potential Cityworks data sharing initiative between Halifax Water and IMO.

Both agencies acknowledge there may be issues that were not flagged or addressed this past year and if residents observe something, please advise them to contact the call centres.

FINANCIAL IMPLICATIONS

No financial implications were discussed between IMO, Design & Construction and Halifax Water in the preparation of this report. IMO is currently undertaking a workflow project with one of the goals being to improve emergency response cost tracking.

COMMUNITY ENGAGEMENT

There was no community engagement as part of this report.

ATTACHMENTS

- Attachment A – Infrastructure Maintenance & Operations' July 2023 Rain Event Service Requests
- Attachment B – Infrastructure Maintenance & Operations' July 2023 Rain Event Work Orders
- Attachment C – Design & Construction's July 2023 Rain Event Work Orders
- Attachment D – Halifax Water's July 2023 Rain Event Service Requests
- Attachment E – Halifax Water's July 2023 Rain Event Work Orders



Attachment A – Infrastructure Maintenance & Operation’s July 2023 Rain Event Service Requests

Service Request Description	Closed	Open	Grand Total
Barricades	8		8
Drainage Infrastructure Maintenance or Repair	43	2	45
Drainage Infrastructure Request	14		14
Flooding Requests	196		196
Obstructions	12		12
Pothole or Sinkhole Report	54		54
Road Shoulder	2		2
ROW Litter	2		2
Street Surface Maintenance	1		1
Street Sweeping	13		13
Trees	1		1
Grand Total	346	2	348

Attachment B – Infrastructure Maintenance & Operation's July 2023 Rain Event Work Orders

Work Order Description	Closed	Open	Grand Total
Asphalt Curb - Repair	1	2	3
Asphalt Repairs - Miscellaneous	20	4	24
Asphalt Road - Washout Base Repairs	12	0	12
Barrier Installation	2	0	2
Brick Sidewalk - Brick Repair	1	0	1
Bridge Repair - Miscellaneous	3	0	3
Bridge Repair - Rail	1	0	1
Catch Basin/Drain - Clearing	4	0	4
Concrete Curb Asphalt Patching	1	1	2
Concrete Curb Repair	2	3	5
Concrete Gutter Asphalt Repair	2	0	2
Concrete Sidewalk - Asphalt Repair	1	0	1
Concrete Sidewalk - Grinding	1	0	1
Concrete Sidewalk - Slab Replacement	1	3	4
Ditch Maintenance	7	1	8
Gravel Road - Grading	3	0	3
Gravel Road - Maintenance	10	1	11
Gravel Road - Washout Base Repairs	11	0	11
Guiderail Repair and Maintenance	1	0	1
Litter Pickup (Manual)	1	0	1
Multi-Use Pathway - Repairs	1	0	1
Other Street Maintenance	1	0	1
Retaining Wall - Repair and Maintenance	0	1	1
Road Shoulder - Grading	3	1	4
Road Shoulder - Maintenance	37	3	40
Road Shoulder - Washout Repairs	1189	56	1245
ROW Landscaping	15	1	16
Secondary Travelway Maintenance	1	1	2
Street - Asphalt Planer Patch Repair	0	1	1
Street - Asphalt/Swale Water Diversion	3	10	13
Street - Cut and Patch	1	5	6
Street - Drainage and Water Flow Work	2	0	2
Street - Driveway Lip Maintenance	1	0	1
Street - Miscellaneous Services	6	0	6
Street - Pothole Repairs	15	0	15
Street - Settled Trench Repair	0	1	1
Street - Sinkhole Repair	22	0	22
Street - Skin Patch	1	1	2
Street - Washout With Undermined or Compromised Road Bed	71	2	73
Street Sweeping - Hand	48	0	48
Street Sweeping - Mechanical	116	0	116
Street Sweeping - Washout Debris Cleanup	87	2	89
StS Walkway Repair - Asphalt	8	0	8
StS Walkway Repair - Gravel	7	2	9
StS Walkway Repair - Other	7	1	8
Tree - Chipping and Brush Removal	1	0	1
Tree - Pruning and Trimming	1	0	1
Tree - Removal	1	0	1
Grand Total	1730	103	1833

Attachment C – Design & Construction’s July 2023 Rain Event Work Orders

Work Order Description	Closed	Open	Total
Street - Washout With Undermined or Compromised Road Bed	28	4	32
Road Shoulder - Washout Repairs	13	0	13
Asphalt Road - Washout Base Repairs	8	2	10
StS Walkway Repair - Asphalt	4	0	4
Road Shoulder - Maintenance	2	0	2
Gravel Road - Washout Base Repairs	2	0	2
Asphalt Sidewalk - Asphalt Repair	1	0	1
Ditch Maintenance	1	0	1
Bridge Repair - Miscellaneous	1	0	1
Bridge - Washing and Flushing	1	0	1
StS Walkway Repair - Gravel	1	0	1
Bridge Patching - Asphalt	1	0	1
Street - Drainage and Water Flow Work	0	1	1
Grand Total	63	7	70

Attachment D – Halifax Water’s July 2023 Rain Event Service Requests

Service Request Description	Closed	Open	Grand Total
Flooding	93	0	93
Pumping Station - Red Light & Alarm	3	0	3
Regular Infrastructure Maintenance	13	0	13
Repeat Caller Escalation	34	0	34
Restoration left to do after work completed	2	0	2
Sewer Backup/Odours	9	0	9
Stormwater Investigation	461	248	709
Unresolved repeat WWSW issues directed to Reg Sup	14	0	14
Urgent Infrastructure Maintenance	99	0	99
WWSW Investigation	1	0	1
Grand Total	729	248	977

Attachment E – Halifax Water’s July 2023 Rain Event Work Orders

Work Order Description	Closed	Open	Total
CENTRAL 3 - PS Repair	1	0	1
P2 - Illegal Discharge Investigation	1	0	1
SW Catchbasin Cleaning	4	3	7
SW Catchbasin Flood Control	9	0	9
SW Catchbasin Inspection	8	0	8
SW Catchbasin Investigation	78	2	80
SW Catchbasin Repair	5	0	5
SW Culvert Cleaning	24	9	33
SW Culvert Investigation	100	1	101
SW Culvert Investigation - Cross Culvert	54	11	65
SW Culvert Investigation - Driveway	218	12	230
SW Culvert Maintenance	35	10	45
SW Culvert Maintenance - Cross Culvert	22	4	26
SW Culvert Maintenance - Driveway	75	13	88
SW Culvert Reinstatement	2	2	4
SW Culvert Reinstatement - Cross Culvert	2	2	4
SW Culvert Reinstatement - Driveway	13	4	17
SW Culvert Replacement - Driveway	28	19	47
SW Ditch Investigation	178	9	187
SW Ditch Reinstatement	12	19	31
SW Ditch Vegetation Control	2	1	3
SW Ditching & Hand Cleaning	60	62	122
SW Lateral /Easement Cleaning	0	1	1
SW Lateral Backup	1	0	1
SW Main Backup	1	0	1
SW Main Investigation	27	0	27
SW Manhole Cleaning	1	0	1
SW Manhole Inspection	5	0	5
SW Manhole Investigation	18	0	18
SW Retention Pond Maintenance	4	0	4
Water Services Investigation	1	0	1
Water Valve - Upper Sleeve Replacement	1	0	1
WW Lateral Inspection	1	0	1
WW Main Investigation	23	0	23
WW Manhole Investigation	13	0	13
CENTRAL 1 - PS Repair	1	0	1
SW Culvert Replacement - Cross Culvert	0	5	5
SW Manhole Repair	1	0	1
SW Easement Cleaning	1	0	1
SW Main Line Video Inspection	1	0	1
SW Catchbasin Pre Flood Control	1	0	1
CENTRAL 1 - PS Wet Weather Event	1	0	1
Grand Total	1033	189	1222