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APPENDIX “B”

Public Meeting Presentations



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RISK MANAGEMENT PLANS FOR RESIDENTIAL AND PUBLIC AREAS IN BUCHANS, NL

Prepared for: Dept Environment & Conservation
Pollution Prevention Division

Prepared by: Brian Luffman, P.Eng.
April 2012





1.1 Brief History

- ❖ CRA previously completed environmental assessment work in and around Buchans 2009-2010
- ❖ Confirmed lead in soil concentrations above industry accepted residential levels
- ❖ Subsequent sampling in residential and public areas of Town confirmed 20 locations with lead above residential (protective of small children)
- ❖ CRA conducted some scientific research that developed Risk-Based Concentration levels for residential (622 mg/kg)
 - Applied to residential and public areas
- ❖ Province then looked to consultants to prepare Risk Management Plans for these areas





1.2 Objectives

- ❖ Assess & quantify areas/properties with high lead in soil levels
- ❖ Conduct additional sampling to define areas
- ❖ Develop, evaluate and estimate management options
- ❖ Provide a detailed assessment and management plan for each property within defined areas
- ❖ Recommend and prioritize areas for management with schedule and cost estimates





1.3 Focused Area of Investigation

- ❖ Previous investigations identified lead in soil above residential in northwest portion of Town
 - Williams Turnpike & Lakeview Ave
 - Walsh Memorial St
 - Laycock St
 - Water St (both sides)
 - Market St
 - Forebay Rd
- ❖ Divided into 8 zones
- ❖ Each zone may contain residential and public areas
- ❖ Roads generally form outside boundary of each area
- ❖ Additional 60 samples collected from all 8 zones



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2.0 Risk Management Alternatives

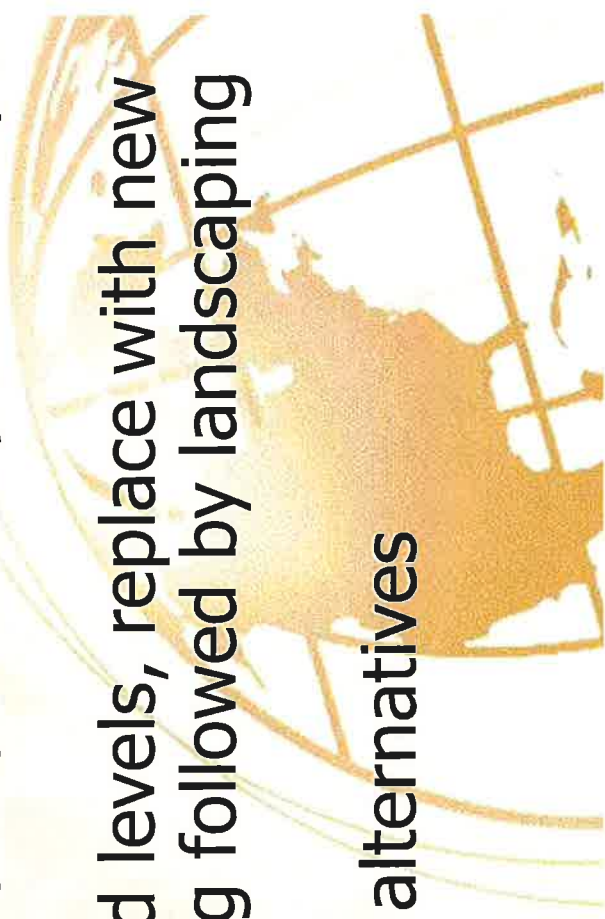
- ❖ Affected by property usage
 - Children – playing outside
 - Flower &/or vegetable gardens
- ❖ Affected by property structures
 - Concrete/asphalt driveways vs gravel
 - Concrete/asphalt/wood walkways vs gravel
 - Sheds
 - Patios/decks





2.1 Alternatives Considered

- ❖ Restrict property usage and wear protective clothing when working in or on the soil (gloves)
 - Not practical
- ❖ Place new and clean soil over existing followed by landscaping reinstatement
 - Limited by existing grades by steps, walkways, driveways, windows, etc.
- ❖ Remove soil with high lead levels, replace with new and clean soil over existing followed by landscaping reinstatement
- ❖ Any combination of these alternatives





2.2 Alternatives Influenced By

- ❖ Existing landscape finishes
 - Asphalt vs gravel driveway
 - Asphalt/concrete/wood vs gravel walkway
 - Shrubs, trees, gardens
 - Patios/decks
 - Sheds
 - Fencing
- ❖ Exposure issues
 - Suspected or confirmed presence of children
 - Lead in soil concentrations





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3.0 Residential Areas

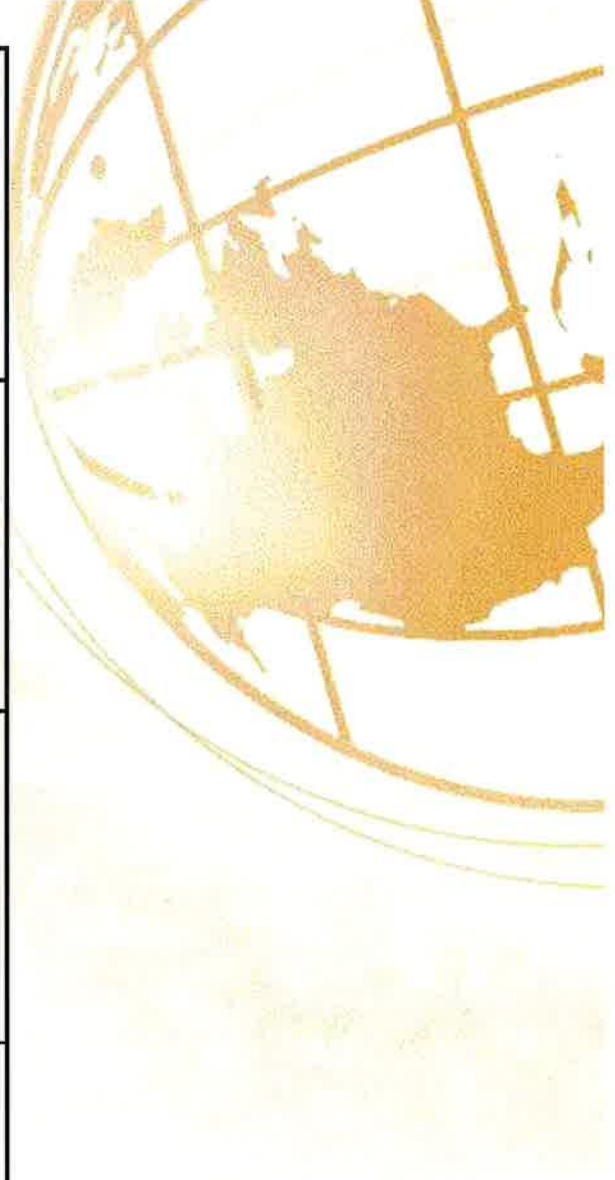
- ❖ Any properties used as a residence





3.1 Zone 1: Forebay–Main

Zone (Residential)		Number of Properties	Lead Levels	Priority
Number	Location		Soil (mg/kg)	
1-1	7 Gilchrist Rd	1	1,600	Moderate
1-2	14 Main St	1	1,200	Moderate





3.2 Zone 2: Williams Turnpike–North

Zone (Residential)		Number of Properties	Lead Levels	Priority
Number	Location		Soil (mg/kg)	
2-1	74 to 84 Jackson St, 63 to 77 Church St	12	670 – 1,600	High
2-2	68 to 82 Church	8	3,000	High
2-3	29 to 43 East St	8	1,100	Low
2-4	30 to 44 East St	8	-	Moderate
2-5	41 to 47 Williams Turnpike, including grassy area north of these properties	4	970 – 3,100	High



3.3 Zone 3: North—Main

<i>Zone (Residential)</i>		<i>Number of Properties</i>	<i>Lead Levels</i>	<i>Priority</i>
<i>Number</i>	<i>Location</i>		<i>Soil (mg/kg)</i>	
3-1	45 to 61 Church St	9	2,100	Low
3-2	38 to 58 Church St	12	1,100 – 3,300	High
3-3	1 to 15 East St	8	-	High
3-4	13 to 39 Williams Turnpike	10	820 – 1,800	High



3.4 Zone 4: Market–Main–Center

<i>Zone (Residential)</i>		<i>Number of Properties</i>	<i>Lead Levels</i>	<i>Priority</i>
<i>Number</i>	<i>Location</i>		<i>Soil (mg/kg)</i>	
4-1	5 Court Rd, including grassy area south of the property	1	1,000 – 1,400	Low
4-2	2 to 4 Court Rd, 1 to	4	2,700	Low



3.5 Zone 5: Center—Main—Church—South

<i>Zone (Residential)</i>		<i>Number of Properties</i>	<i>Lead Levels</i>	<i>Priority</i>
<i>Number</i>	<i>Location</i>		<i>Soil (mg/kg)</i>	
5-1	2 to 10 Center St, 51 to 57 Jackson St	9	910 – 2,400	Moderate
5-2	52 Jackson St	1	1,400	Low
5-3	21 to 25 Church St, 42 Jackson St	4	1,200 – 1,400	Low



3.6 Zone 6: Church—Main—Williams Turnpike —Lake—South

Zone (Residential)		Number of Properties	Lead Levels	Priority
Number	Location		Soil (mg/kg)	
6-1	22 to 28 Church St, 4 South St	4	1,600	Moderate
6-2	1 to 9 MacLean St	9	1,200	Low
6-3	2 to 10 MacLean St, 5 to 11 Williams Turnpike	3	790 – 1,900	Moderate



3.7 Zone 7: Laycock–South–Lundberg– Walsh Memorial

Zone (Residential)		Number of Properties	Lead Levels	Priority
Number	Location		Soil (mg/kg)	
7-1	10 to 48 Laycock St	20	1,000 – 1,600	Moderate
7-2	9 to 39 Jackson St	16	850 – 1,100	Moderate



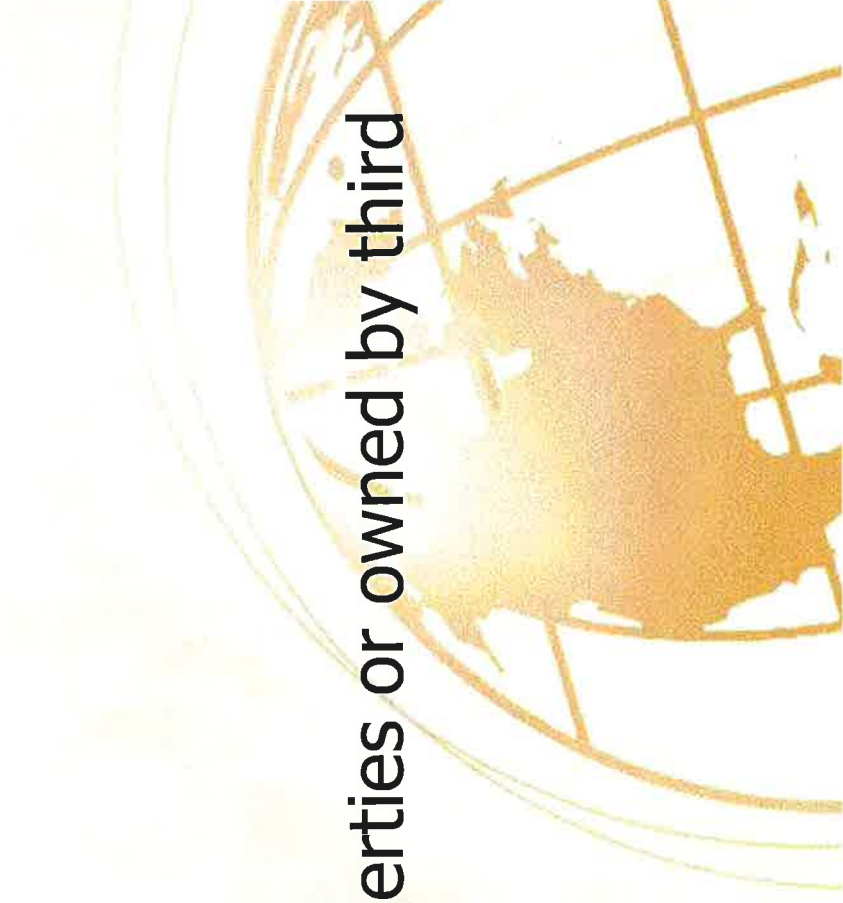
3.8 Zone 8: Lundberg–South–Lakeview– Walsh Memorial

Zone (Residential)		Number of Properties	Lead Levels	Priority
Number	Location		Soil (mg/kg)	
8-1	2 to 40 Lundberg Ave	20	1,400 – 1,600	High
8-2	1 to 39 Pine St	20	690 – 3,200	High
8-3	7 to 37 Lakeview Ave	16	660 – 2,700	Low



4.0 Public Areas

- ❖ Any properties not used as a residence, but owned or managed by Town
 - Ball field
 - Veteran's Memorial
 - Tennis Courts
 - Arena
 - Swimming Pool
 - Playground
- ❖ Excludes commercial properties or owned by third parties





4.1 Zone 1: Zone 1: Forebay--Main

<i>Zone (Public)</i>		<i>Lead Levels</i>	<i>Priority</i>
<i>Number</i>	<i>Location</i>	<i>Soil (mg/kg)</i>	
1	Veteran's Memorial	1,000 – 1,600	Low
1	Ball field (Addressed in 2011)	850 – 1,100	High



4.2 Zone 4: Market—Center

<i>Zone (Public)</i>		<i>Lead Levels</i>	<i>Priority</i>
<i>Number</i>	<i>Location</i>	<i>Soil (mg/kg)</i>	
4	Tennis Court area, west side	1,500	High
4	Tennis Court area, south side	3,600 – 4,500	High
4	Health care facility courtyard, south side	1,200	Low



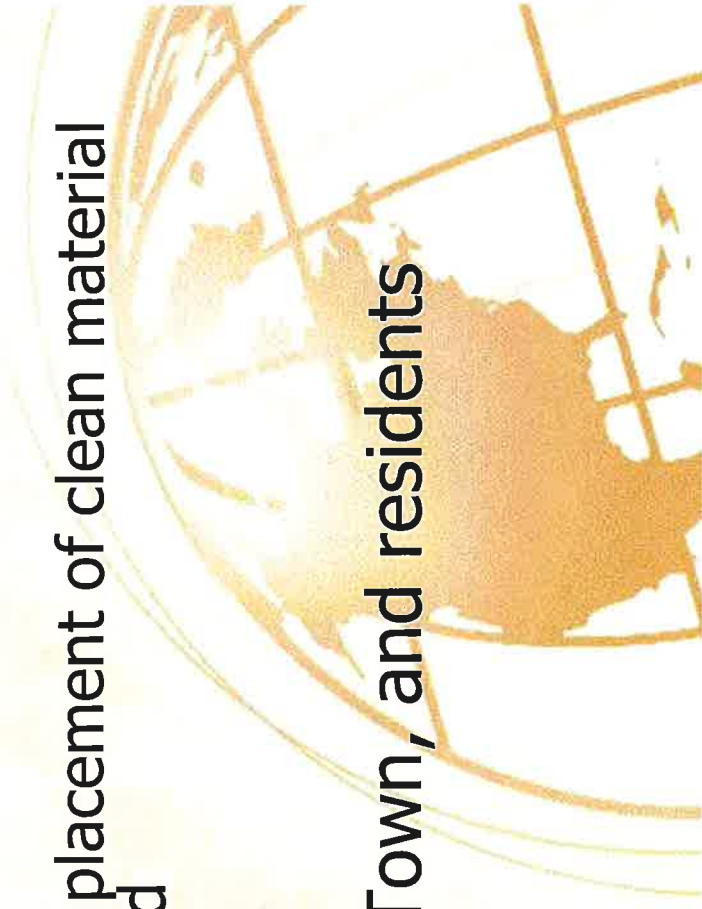
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5.0 Recommendations

- ❖ Address Areas in order of Priority
 - High
 - Moderate
 - Low
- ❖ Remediate areas as follows:
 - Placement of clean material followed by landscaping, as required OR
 - Removal of soil followed by placement of clean material and landscaping, as required
- ❖ Use a multi-year approach
 - Too much work for 1 year
- ❖ Involvement of Province, Town, and residents necessary





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6.0 Questions





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BUCHANANS SOIL REMEDIATION PROJECT

DEPARTMENT OF ENVIRONMENT AND CONSERVATION

HATCH MOTT MACDONALD



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COMPANY OVERVIEW

- Hatch Mott Macdonald (HMM) is an experienced engineering firm with local offices in Corner Brook, Clarenville, and St. John's, Newfoundland. HMM provides a full range of services from engineering design to project management and construction engineering services.

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- Some of our recent major earthworks projects include:
 - Duck Pond Mine - Mill and Tailings Management Area
 - North Atlantic Refinery - Site grading and raising of existing earth fill dykes to meet environmental regulations
 - Trans Labrador Highway - Upgrading and widening of 230km of highway between Labrador City and Churchill Falls
 - Town of Clarenville - Engineering Consultant for the Town and responsible for ongoing work which includes landscaping, road upgrading and water and sewer installation.
- St. John's International Airport and Gander International Airport Runway rehabilitation



HMM's ROLE IN THIS PROJECT

- Hatch Mott Macdonald (HMM) is the prime consultant for the Buchan's Soil Remediation project and will be working with our sub consultant CRA for this project.
- The engineering design and construction management of the project will be managed by our Clarenville office.



PROJECT OVERVIEW

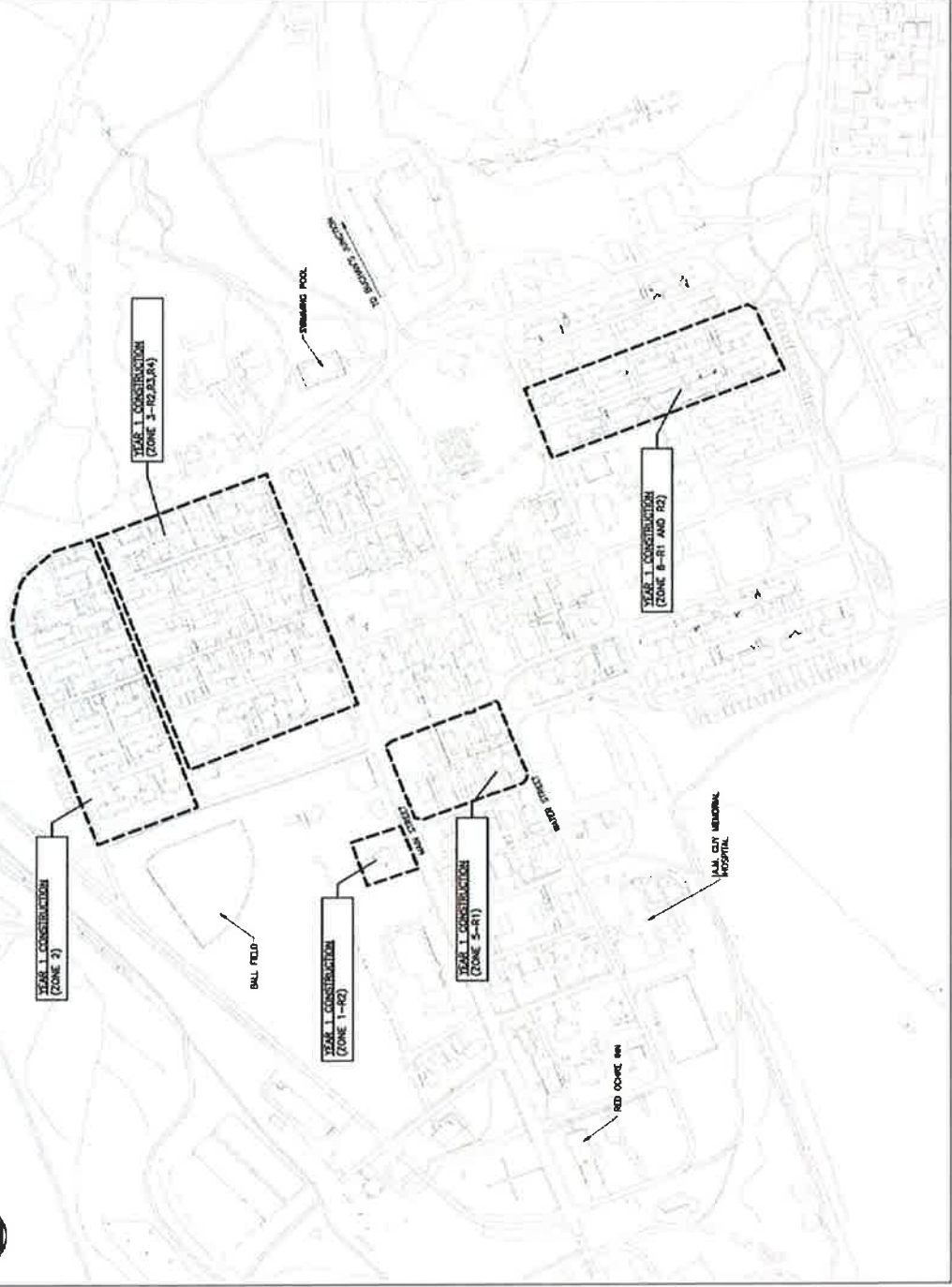
- This project involves the removal and disposal of the top 300mm (1') of lead impacted soil throughout various areas of Town and replacement with new imported material.
- Construction will be carried out over a 2 year period, with higher priority areas being completed during the first year.

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SOIL REMEDIATION PROJECT, BUCHAN'S NL.



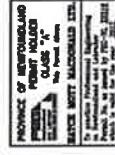
LOCATION PLAN



LIST OF DRAWINGS

CIVIL

- C1 of 8 SITE PLANS YEAR 1 CONSTRUCTION ZONE 1, R2
- C2 of 8 SITE PLANS YEAR 1 CONSTRUCTION ZONE 2, R1, R2
- C3 of 8 SITE PLANS YEAR 1 CONSTRUCTION ZONE 2 R3, R4, R5
- C4 of 8 SITE PLANS YEAR 1 CONSTRUCTION ZONE 3 R1, R2, R3
- C5 of 8 SITE PLANS YEAR 1 CONSTRUCTION ZONE 3 R4
- C6 of 8 SITE PLANS YEAR 1 CONSTRUCTION ZONE 5 R1
- C7 of 8 SITE PLANS YEAR 1 CONSTRUCTION ZONE 8 R1, R2
- C8 of 8 TYPICAL SECTION PROJECT NOTES



PRIME CONSULTANT



**Hatch Mott
MacDonald**

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SUB CONSULTANT



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fax: (709) 364-5368

PROJECT

**DEPARTMENT OF ENVIRONMENT
AND CONSERVATION
SOIL REMEDIATION PROJECT, BUCHAN'S NL**

**DOCX PROJECT NUMBER
XX-XXXX-XX**

**EMMA Project Number
299289**

ISSUED FOR REVIEW

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- HMM will ensure that all properties are restored to a state that is equal to or better than pre construction.
- HMM will have measures in place to protect the safety of the public, for example flag persons and dust control.
- HMM will have an inspector onsite at all times during construction to monitor construction and serve as a liaison with property owners.



CONSTRUCTION OVERVIEW

- Prior to start of construction the site representative will consult with property owners and review the planned work.
- Gain access to property with construction equipment. Sections of fences will need removal to gain access to properties with heavy equipment. Fences will be re-installed after work on property is completed.
- There will be no travelling over private hard surfaces with heavy construction equipment, for example there will be no dump trucks or excavators allowed to travel over a home owners paved driveway.

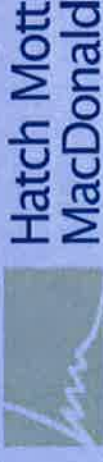
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- Soil will be excavated to a depth of 300mm (1') and replaced with 150mm (6") of new clean fill along with 150mm (6") of topsoil followed by sod in grassed areas or 150mm (6") of Class "A" material in any existing gravel areas such as driveways. Driveway areas will be compacted to specific requirements.
- Flower beds, fences and decks will remain intact and will be worked around. Small trees and shrubs will be removed and re-planted. All large trees will remain and extra care will be taken when digging around so as to not damage roots. There will be no heavy excavation inside tree drip line for large trees.

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- Sod will be placed on an individual property within two weeks of commencement of excavation.
- Excavated material will be moved to a site approved by the Town of Buchan's and the Department of Environment and Conservation.
- It is anticipated that work begin in early June and continue as long as weather permits.

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- Sod laying will end the last week of September to allow sufficient time to establish root prior to winter.
- Watering and care of newly planted Sod, trees and shrubs will be the responsibility of the property owner.
- Any questions or concerns during construction should be brought to the attention of HMM's site representative to deal with and resolve.

QUESTIONS?