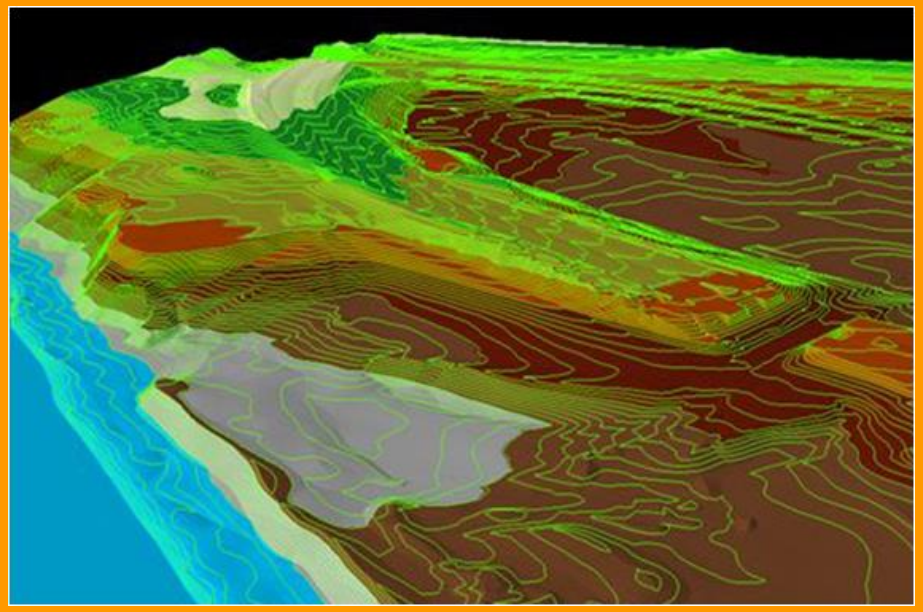
Steps Required in Managing Gravel Pits

- Exploration
  - Terrain / Aggregate Mapping
  - Test Pit / Bore Hole Logging
  - Material Testing
- Pit Plans and Aggregate Modeling
- Pit Approvals and Permits
- Stockpile Survey and Quantities for year-end audits
- Pit Reclamation - Inspection and Contract Administration

Pit Approvals & Permits

Public Land

- Surface Material Exploration (SME)
  - Approval process required for exploration
- Surface Material Lease (SML)
  - Requires pit plans
  - Reclamation plans
  - Legal survey & land registration
- Conservation and Reclamation Plan (CRBP)



Pit Approvals & Permits

Private Land

- Class I Pits ≥ 5 hectares
  - Must be registered and follow Code of Practice for Pits
- Class II Pits < 5 hectares
  - Does not require registration but must follow Environmental Protection Guidelines for Pits

Reclamation

Reclamation

- Pits can be reclaimed in phases or all at once
- Reclaimed cross sections and grading plans in the pit plans provide the details for Municipal Crews or Contractors to reclaim the site. Tenders also outline steps required of the Contractor
- Reclamation certificates require that specific procedures be followed during reclamation

Legislative Requirements

- **The following Acts may require assessments, applications and approvals:**
  - **Water Act**
  - **Public Lands Act**
  - **Environmental Protection and Enhancement Act (EPEA)**
  - **Historical Resources Act**
  - **Wildlife Act**
  - **Species at Risk Act**
  - **Migratory Birds Convention Act**
  - **Fisheries Act**
  - **Soil Conservation Act**
  - **Weed Control Act**
  - **Municipal Government Act**
  - **Public Highways Development Act**

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Legislative Requirements

- There are also Codes of Practice under the *Water Act and EPEA* for various activities:
  - Watercourse Crossings
  - Outfall Structures on Water Bodies
  - Temporary Diversions
  - Sand and Gravel Pits

Approval Requirements and Timing of Field Assessments

- Commencement of field work is subject to the following conditions:
  - Access permission from private landowners
  - Public and/or private utility locates
  - Wetland assessments may only occur between April and October once snow cover has dissipated, vegetation is easily observable, and growing above ground
  - Rare Plant Surveys; different species = different flowering windows:
    - Early season – May/June
    - Late season – July/August
  - Detailed historical assessments may only occur under snow-free, frost-free conditions
  - Fish surveys under non-frozen conditions provide less limitations than frozen conditions
  - Soils assessments may occur year round; however, winter work = additional cost due to increased time and hiring of equipment

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Approval Schedule

- Approval processes within a regulatory agency can significantly impact construction commencement. Timelines for approvals vary depending on the complexity of a project and/or level of disturbance. Various timelines for approvals are:

  - Public Lands Act Disposition Approval – 9 to 12 months
  - Conservation and Reclamation Plan Approval – 2 to 4 months
  - Water Act Approval – 4 to 8 months
  - Fisheries Act Authorization – up to 4 months
  - Historical Resources Act Approval – 6 weeks to 4 months
  - Water Act Code of Practice Notification – 14 days

Timing of Construction and Species of Management Concern

- Construction may fall within a Restricted Activity Period (RAP)
- RAPs are designated times of the year where construction should be avoided to prevent impacts to species of management concern during sensitive life stages such as migration, spawning, breeding, egg incubation, etc.
- Requires additional assessment and/or monitoring = increased cost

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Legislation, what are the implications?

- AEP inspection
- Stop work order
- Fines
- Repairs to works, additional measures
- Impacts to schedule and increased costs
- Increased scrutiny of future projects

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Project Planning

- Early identification of constraints (e.g. project, funding), client goals, regulatory agency needs, and stakeholder issues
- Factor approval requirements, timing of field assessments, and approval timelines into RFP release

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