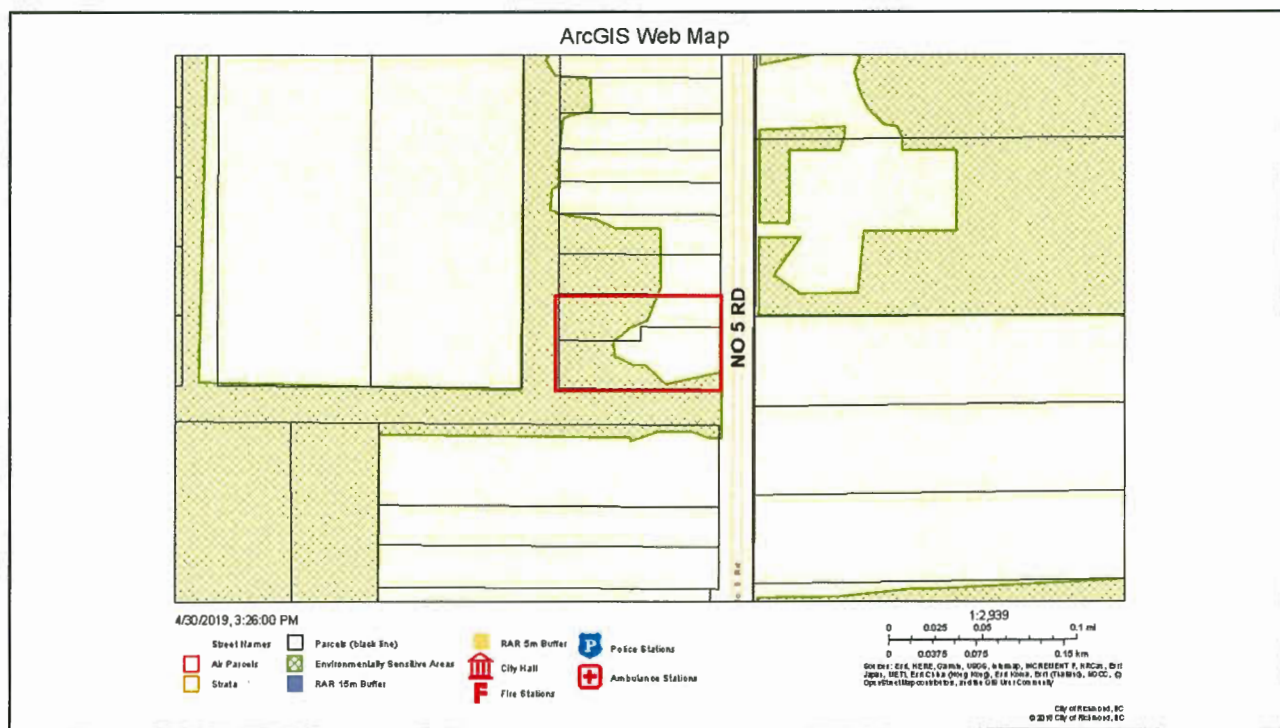


Environmentally Sensitive Area (ESA)

- 2596 m² (54%) of the study area (7341 & 7351 no 5 Rd) is mapped as ESA
- Designated as Freshwater Wetland
- Site characteristics do align with the Freshwater Wetland designation in part (forested area in historic bog habitat).
- McTavish notes the site vegetation is characteristic of typical conditions described for the Upland Forest designation
 - Description of Upland Forest includes "Birch, red alder, and black cottonwood with lesser amounts of western hemlock and western red cedar"





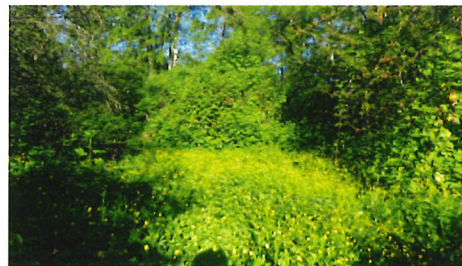
Vegetation

- **Tree layer:** Birch (decaying) and shore pine
- **Shrub layer:** salal, agricultural blueberry, hardhack
- **Herbaceous layer:** Few herbaceous species.



Invasive Species

- Blackberry dominates forest/yard interface (~850 m² of blackberry on property)
- Some creeping buttercup, lamium and reed canarygrass



Wildlife

- No large mammals detected
- Provides habitat for birds

Soils & Hydrology

- Historic bog
- Deep organic soils
- Mapped as Triggs soil series
- Dry within ~80 cm of surface during sampling in March and November of 2016
- Hydrology altered over time due to agricultural and municipal drainage in area
- Cyclical wetting and drying
- No mapped watercourses on or adjacent site
- Agricultural drainage swale to south of property line

ESA Impact

- ESA will be impacted within 1000 m² home plates
- Impact to ESA ~247 m² (9.5% of ESA on site)
- ESA will remain contiguous with surrounding ESA
- ESA will continue to support wildlife

Item	Area (m ²)		
	7341 No 5 Rd	7351 No 5 Rd	Combined
Parcel address			
Parcel size	2,023.00	2,748.00	4,771.00
Current ESA	1,231.95	1,364.50	2,596.45
ESA encroachment	11.00	263.30	247.30
ESA compensation	170.40	255.90	426.30
Final ESA	1,391.35	1,384.10	2,775.45
ESA enhancement (blackberry removal)			850

ESA Compensation

- ESA encroachment will be compensated for
- Total compensation ~426 m²
- **Net gain in ESA (+179 m²)**
- Invasive species will be removed with a focus on Himalayan blackberry (creeping buttercup and Reedcanary grass also on site)
- Any felled or failed trees to be bucked into manageable lengths and remain within the forested ESA area as coarse woody debris (CWD). In travelled or high use areas, CWD will be slashed to the ground to minimize the potential for injury from suspended logs.

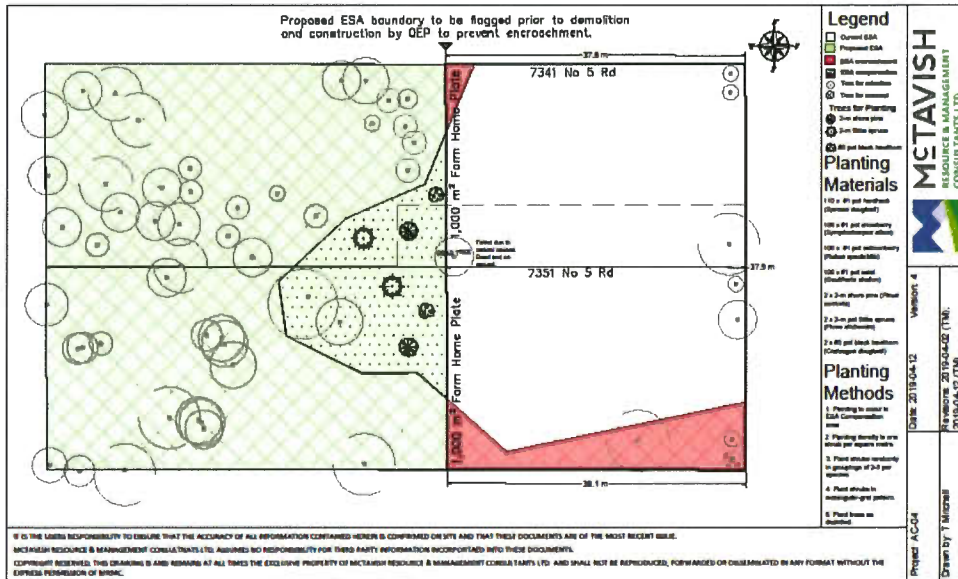
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ESA enhancement (blackberry removal)			850

ESA Compensation

- Total species to plant within ESA compensation area:
 - 6 trees (Sitka spruce/lodge pole pine/black hawthorn)
 - 410 shrubs (snowberry, salmonberry, hardhack, salal)
- ESA to be flagged and inspected prior to demolition and construction



Site Plan



ESA Maintenance and Monitoring

- Maintenance:
 - Occasional weeding and hand watering until establishment
- Monitoring
 - Inspection after substantial completion and following three years
 - Review installation
 - Ensure 80% survival
 - Ensure removal of Himalayan blackberry

QEP Services

- Delineation of south drainage channel and inspection of ESC Measures
- Flagging of ESA Boundary
- Bird nest survey(s) as required
- Wildlife survey if any species at risk detected

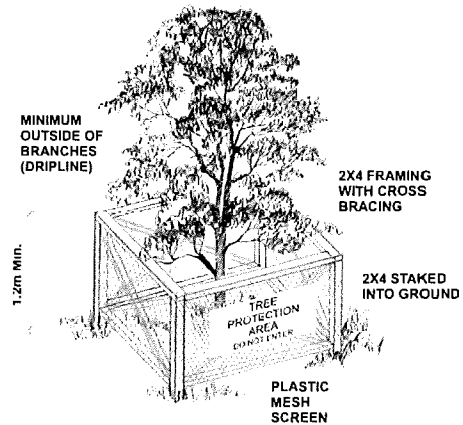
Trees on site

- 47 trees inventoried on site
- Composed of birch, shore pine, Douglas fir, black cottonwood, cherry
- All trees retained and protected (Including tree has died due to natural causes and has fallen over)

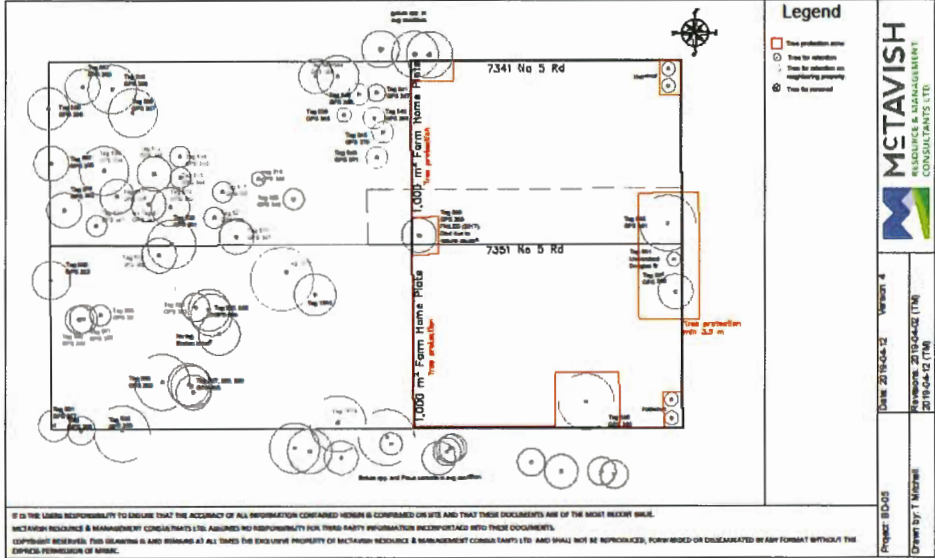


Tree Protection

- Tree Protection Zone (TPZ) to be established before demolition and construction works and to remain in place until works complete
- TPZ fencing to be installed with signage



Tree Protection



Arborist Monitoring

- Regular monitoring during construction
- TPZ monitoring
- Note any deficiencies
- Health and condition of trees
- Any damage
- Recommendations and confirmation of recommended mitigation measures
- Factors that may affect tree health

