An aerial photograph of a winding watercourse, likely a river or stream, flowing through a landscape. In the background, a city skyline is visible under a clear sky. The water is a light blue-grey color, and the surrounding land is a mix of green and brown tones. The overall image has a slightly desaturated, blue-tinted appearance.

Fruitland -Winona Block 1 Block Servicing Strategy Watercourse 5 Natural Watercourse Enhancements

**Presentation to City of Hamilton Planning Committee of
Council, October 3rd, 2025**

Presented By: AC III Group Inc., Urbantech Consulting, GEO Morphix Ltd., and Colville Consulting Inc.

Five-Year Biodiversity Action Plan, 2024

The goal of the Action Plan is to protect and restore biodiversity across Hamilton through habitat restoration, enhancement, and species conservation with the support of the community members.

Climate Change Impact Adaptation Plan, 2024

- The goal of the Adaptation Plan is to reduce the impacts of climate change on residents, businesses, and infrastructure in Hamilton
- Key areas outlined in the Adaptation Plan include flood prevention, increasing green spaces, and improved stormwater retention

Existing Conditions – Watercourse 5

4



Channel conditions at north end of the study area. Debris present throughout the reach.



Channel conditions immediately south of culvert and access laneway at 248 Fruitland Rd.



Example of channel and bank conditions for Watercourse 5.



Channel conditions of Watercourse 5 before crossing 252 Fruitland Rd.



Channel conditions and debris present east of 230 Fruitland Rd.

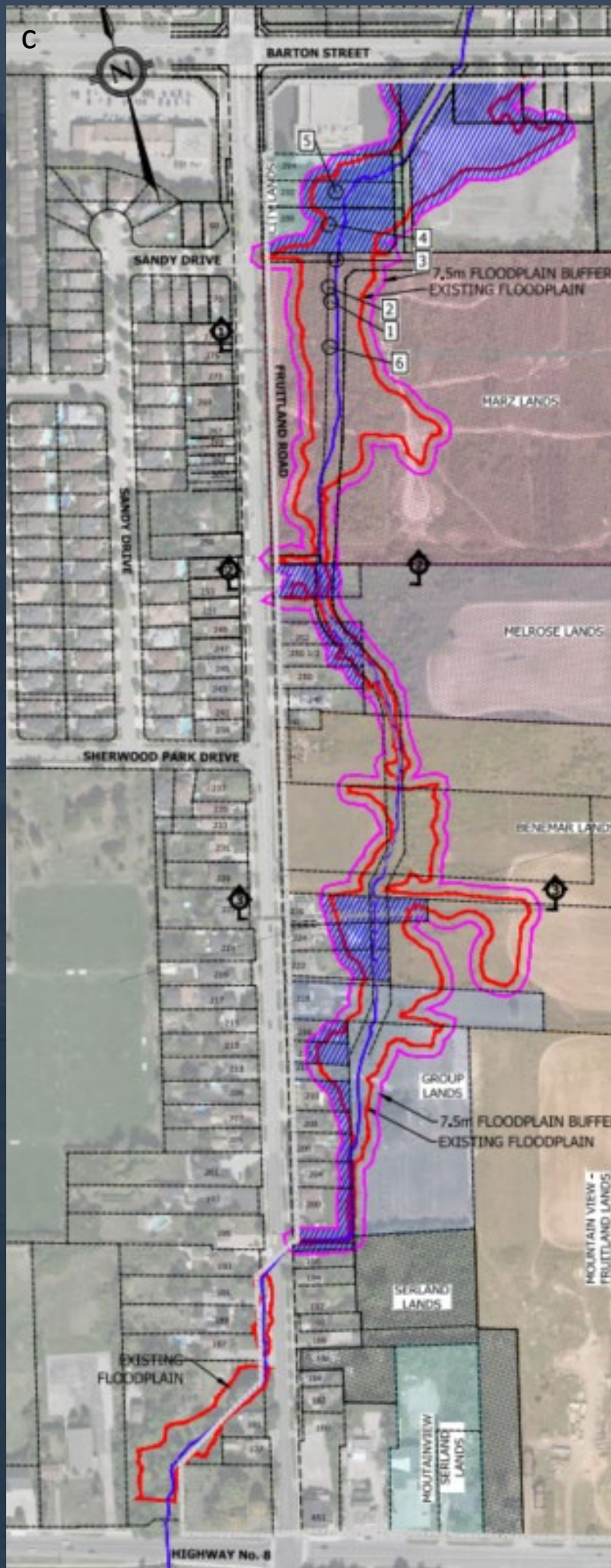


Channel conditions and debris north of culvert and access laneway at 212 Fruitland Rd.

Evaluation Criteria	Option 1	Option 2	Option 3
	Do Nothing (leave watercourse and floodplain in place)	Improve the watercourse in existing location	Watercourse Realignment
Meeting Biodiversity Targets	✓	✓✓✓✓	✓✓✓✓
Meeting Climate Change Targets/Goals	✓	✓✓	✓✓✓✓
Development Implications	✓ Reduces developable area by 3.6 ha	✓✓	✓✓✓✓
Addressing Watercourse Erosion Hazards	✓	✓✓✓✓	✓✓✓✓
Addressing Flood Hazards	✓	✓✓✓✓	✓✓✓✓
Reducing/Offsetting Development's Environmental Footprint	✓✓	✓✓✓	✓✓✓✓
Approvability	✓✓	✓✓✓✓	✓✓✓✓
Fruitland Winona Secondary Plan (FWSP) Compliance	-	✓✓	✓✓✓✓
Score and Rank	9/32	25/32	32/32

Option 1: Do Nothing

- Minimal intervention (**does not align** with objectives for biodiversity and climate action plan)
- No major stormwater management improvement
- Least efficient layout with low development compatibility and increased carbon emissions from fill import (reduces developable area by 3.6 ha)
- Limits or precludes re-development potential of **19 private properties (LOG & others)**
- No ecological or geomorphological enhancement
- Erosion and Flooding Risk to Fruitland Homeowners still exists**
- Meets** agency requirements for flood and erosion hazards
- Does not meet** requirements of FWSP

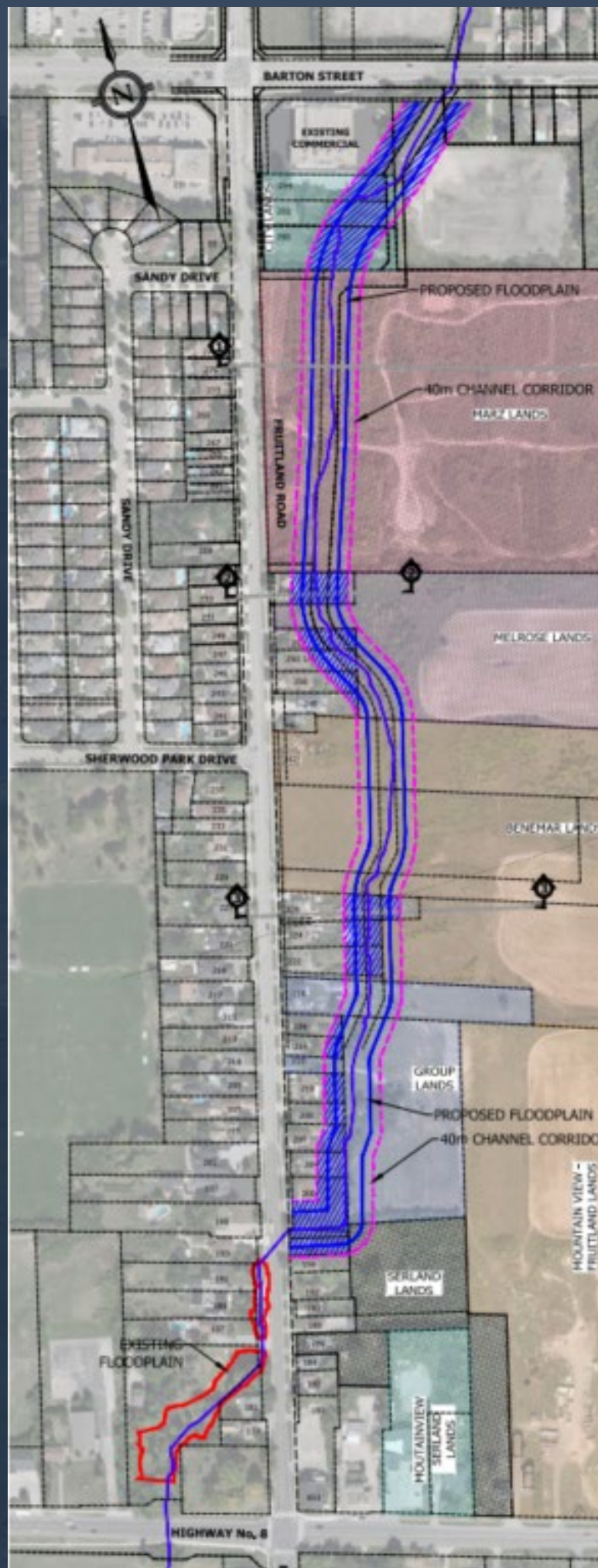


Evaluation Criteria	Option 1 Do Nothing (leave watercourse and floodplain in place)	Option 2 Improve the watercourse in existing location	Option 3 Watercourse Realignment
Meeting Biodiversity Targets	✓	✓✓✓✓	✓✓✓✓
Meeting Climate Change Targets/Goals	✓	✓✓	✓✓✓✓
Development Implications	✓	✓✓	✓✓✓✓
Addressing Watercourse Erosion Hazards	✓	✓✓✓✓	✓✓✓✓
Addressing Flood Hazards	✓	✓✓✓✓	✓✓✓✓
Reducing/Offsetting Development's Environmental Footprint	✓✓	✓✓✓	✓✓✓✓
Approvability	✓✓	✓✓✓✓	✓✓✓✓
Fruitland Winona Secondary Plan (FWSP) Compliance	-	✓✓	✓✓✓✓
Score and Rank	9/32	25/32	32/32



Option 2: Improve in Existing Location

- Enhances natural habitats (aligns with biodiversity and climate action plans)
- Improves stormwater management
- Moderately efficient development layout
- Increased carbon emissions from fill importation
- Limits or precludes re-development potential of 12 private properties (LOG & others)
- Reduces flood and erosion risk to existing property, allows natural meandering
- Enhancements to ecological and geomorphological features
- Not implementable due to impacts to largely NON-BSS1 – Landowner Group landowners
- Meets agency requirements for flood and erosion hazards
- Meets requirements of FWSP

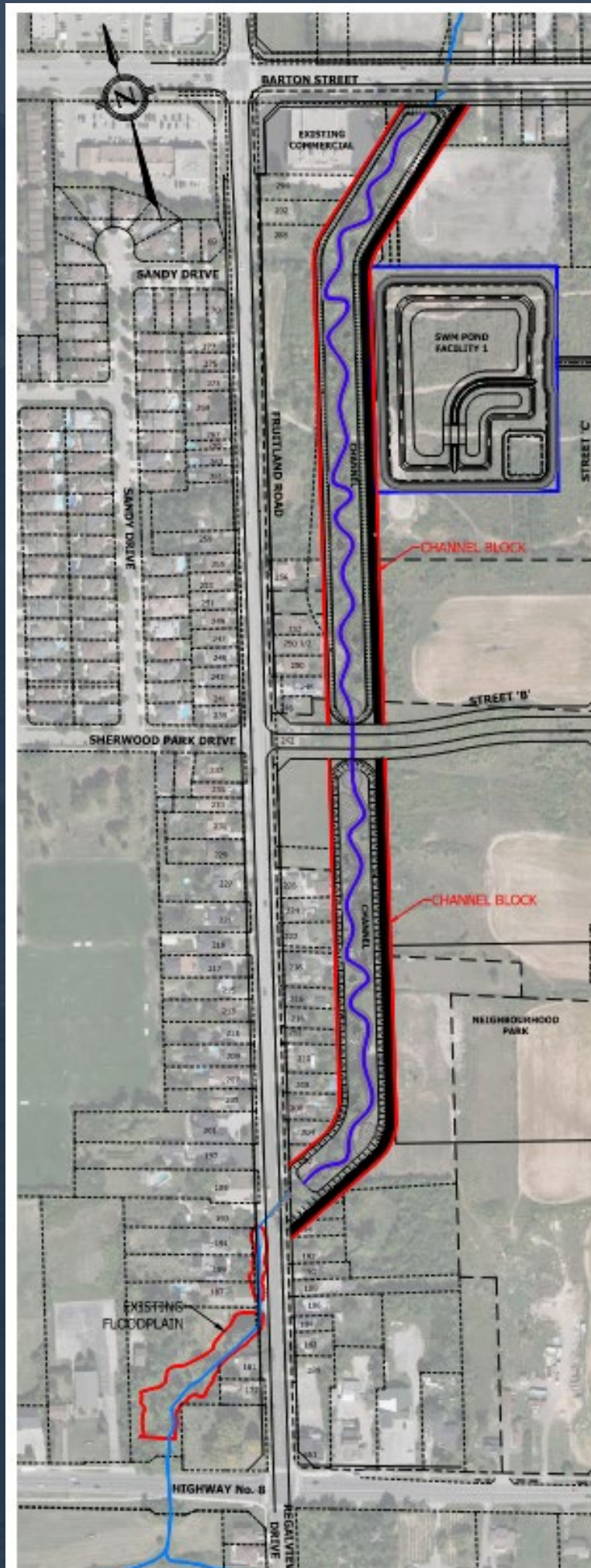


Evaluation Criteria	Option 1	Option 2	Option 3
	Do Nothing (leave watercourse and floodplain in place)	Improve the watercourse in existing location	Watercourse Realignment
Meeting Biodiversity Targets	✓	✓✓✓✓	✓✓✓✓
Meeting Climate Change Targets/Goals	✓	✓✓	✓✓✓✓
Development Implications	✓	✓✓	✓✓✓✓
Addressing Watercourse Erosion Hazards	✓	✓✓✓✓	✓✓✓✓
Addressing Flood Hazards	✓	✓✓✓✓	✓✓✓✓
Reducing/Offsetting Development's Environmental Footprint	✓✓	✓✓✓	✓✓✓✓
Approvability	✓✓	✓✓✓✓	✓✓✓✓
Fruitland Winona Secondary Plan (FWSP) Compliance	-	✓✓	✓✓✓✓
Score and Rank	9/32	25/32	32/32



Option 3: Watercourse Realignment

- Enhances natural habitats (aligns with biodiversity and climate action plans)
- Improves stormwater management
- Most efficient development layout, reduced carbon emissions by limiting fill import
- Limits or precludes re-development potential for 4 private properties (others at Fruitland watercourse crossing)
- Reduces flood and erosion risk to existing property, allows natural meandering
- Enhancements to ecological and geomorphological features
- Meets agency requirements for flood and erosion hazards
- Meets requirements of FWSP



Evaluation Criteria	Option 1	Option 2	Option 3
	Do Nothing (leave watercourse and floodplain in place)	Improve the watercourse in existing location	Watercourse Realignment
Meeting Biodiversity Targets	✓	✓✓✓✓	✓✓✓✓
Meeting Climate Change Targets/Goals	✓	✓✓	✓✓✓✓
Development Implications	✓	✓✓	✓✓✓✓
Addressing Watercourse Erosion Hazards	✓	✓✓✓✓	✓✓✓✓
Addressing Flood Hazards	✓	✓✓✓✓	✓✓✓✓
Reducing/Offsetting Development's Environmental Footprint	✓✓	✓✓✓	✓✓✓✓
Approvability	✓✓	✓✓✓✓	✓✓✓✓
Fruitland Winona Secondary Plan (FWSP) Compliance	-	✓✓	✓✓✓✓
Score and Rank	9/32	25/32	32/32

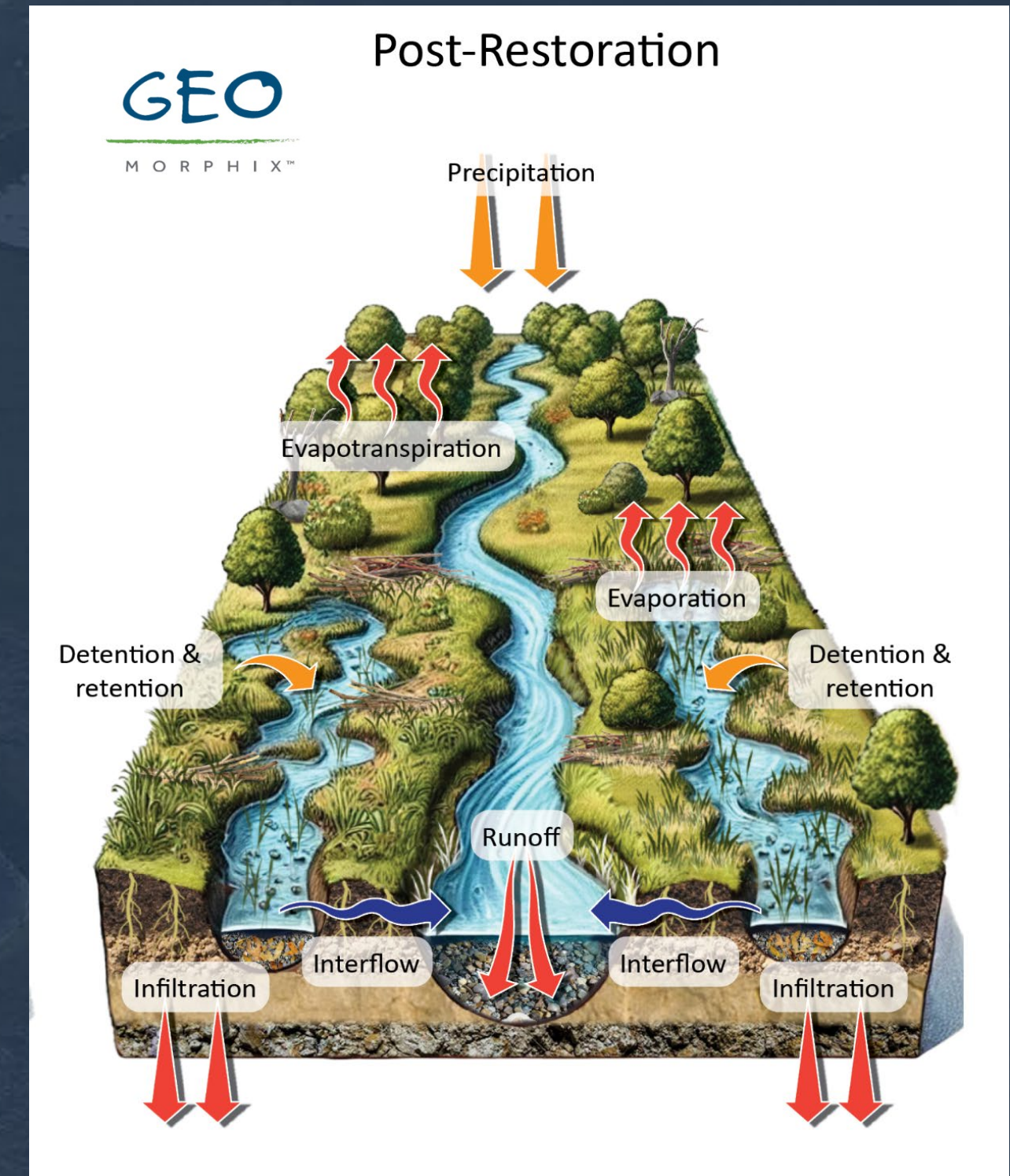


Direction from the Stoney Creek Urban Boundary Expansion Phase 3 Study

- Accordingly, a portion of Watercourse 5.0 within the SCUBE West lands is proposed to be relocated and reconstructed. The proposed works would see the channel of Watercourse 5.0 between Sherwood Park Road and Barton Street moved closer to Fruitland Road. This would provide floodplain and stormwater servicing benefits and increase the amount of developable land east of the realigned channel.

Benefits of Watercourse Restoration

- Watercourse restoration goals align with both the Biodiversity Action Plan and Climate Change Impact Adaptation Plan
- Applies to both Options 2 & 3
 - Extent of benefits is greater for option 3 given the entire corridor is restored
- Benefits of watercourse restoration:
 - Increase species diversity
 - Improve infiltration, water quality and retention
 - Reduce flooding and attenuate peak flows
 - Increase carbon storage
 - Provide aquatic and terrestrial habitat
 - Enhance connectivity between ecosystems and natural environments



Watercourse 5 Natural Channel Design Characteristics

- Meander belt width = 23 m
- Riffle-pool bed morphology
- Native riparian plantings
- Stone core wetland to attenuate stormwater discharge
- 0.46 ha of floodplain wetland replication
- Hydraulically sized bed materials



Supporting the *Five-Year Biodiversity Action Plan for Hamilton, 2024*

Key Priority 3: Long-term Protections and Connections

- Corridor allows for safe animal passage with connection to upstream and downstream habitats with adequately sized road crossings
- Road crossing will be sized to provide adequate passage for medium sized mammals
- Remove fish barriers to allow for access to more habitat



Supporting the *Five-Year Biodiversity Action Plan for Hamilton, 2024*

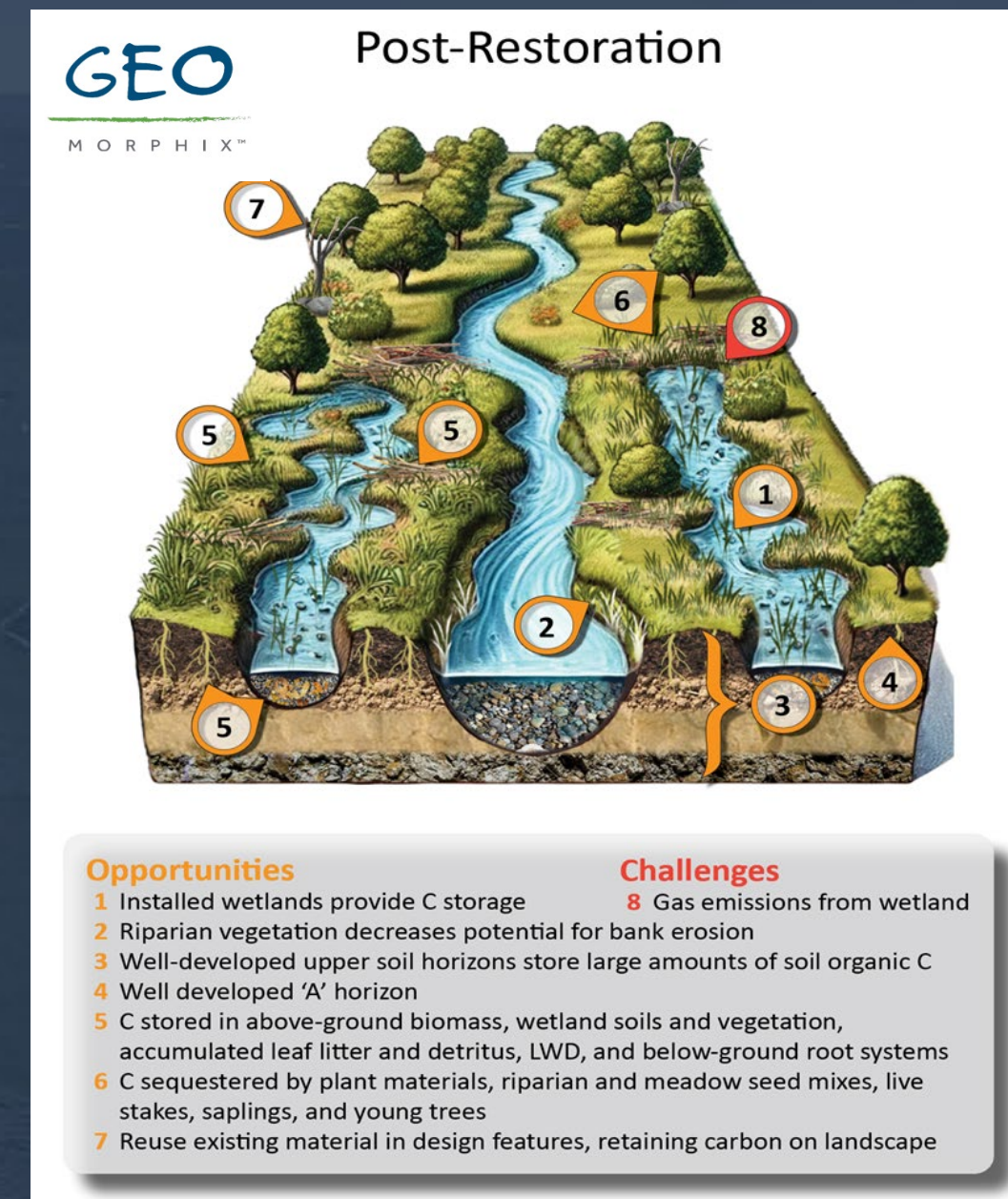
Key Priority 6: Aquatic Habitat Restoration and Enhancement

- Improves habitat conditions and removes existing debris
- Removes barriers for fish passage and provides habitat for fish life cycle
- Natural floodplain with wetland features can improve water quality and infiltration
- Reduce flooding to new and existing properties by containing flood flows
- Erosion risk is contained and allows watercourse to naturally migrate without risk to property



Supporting the *Climate Change Impact Adaptation Plan, 2024*

- Restored floodplain enhances flood attenuation and reduces peak flow velocities
- Stone core wetland accommodates stormwater discharge and mitigates downstream erosion
- Bed morphology facilitates energy dissipation, prevents erosion and promotes sediment balance
- Riparian plantings improve bank stability



Supporting the *Climate Change Impact Adaptation Plan, 2024*

- Wetland features provide carbon sequestration, sediment retention, and reduces nutrient loading
- Increase infiltration and water retention and improve water quality
- Provide habitat for aquatic species including amphibians, reptiles, and aquatic insects



Takeaways

- Restoration of Watercourse 5 will provide numerous benefits to the ecosystem and watershed
- Natural watercourse designs improve habitat, flood retention, water quality, sediment transport, and infiltration processes
- Watercourse restoration work aligns with the goals of both the Five-Year Biodiversity Action Plan and the Climate Change Impact Adaptation Plan



Thank you

Presented By: AC III Group Inc., Urbantech Consulting, GEO Morphix Ltd., and Colville Consulting Inc.