

Natural Heritage System Planning for Restoration and Enhancement in the Region of Peel's New Urban Areas

Latonnell Conservation Symposium
October 18, 2022

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Preparing for Growth

- As part of the Peel 2051 Regional Official Plan Review, the Region initiated the Settlement Area Boundary Expansion (SABE) in 2019, to define new urban area(s).
- Required to accommodate an additional 175,000 people & 58,000 jobs in new urban areas over the next 30 years.
- Managing growth and impacts of climate change is a key priority.
- Need for a new approach to planning future communities focused on compact, sustainable and resilient development.

Settlement Area Boundary Expansion

Phase 1 Background	Phase 2 Technical Studies	Phase 3 Draft Policies & Mapping	Phase 4 Final OPA
Data collection Criteria setting Identify focus study area	Water and wastewater Transportation Health and public facilities Heritage and archaeology Commercial and employment Environment Agriculture Fiscal Mineral aggregates Climate change	Draft SABE	New 2051 Urban Area New ROP (council adopted April 2022) In review by Province (current)

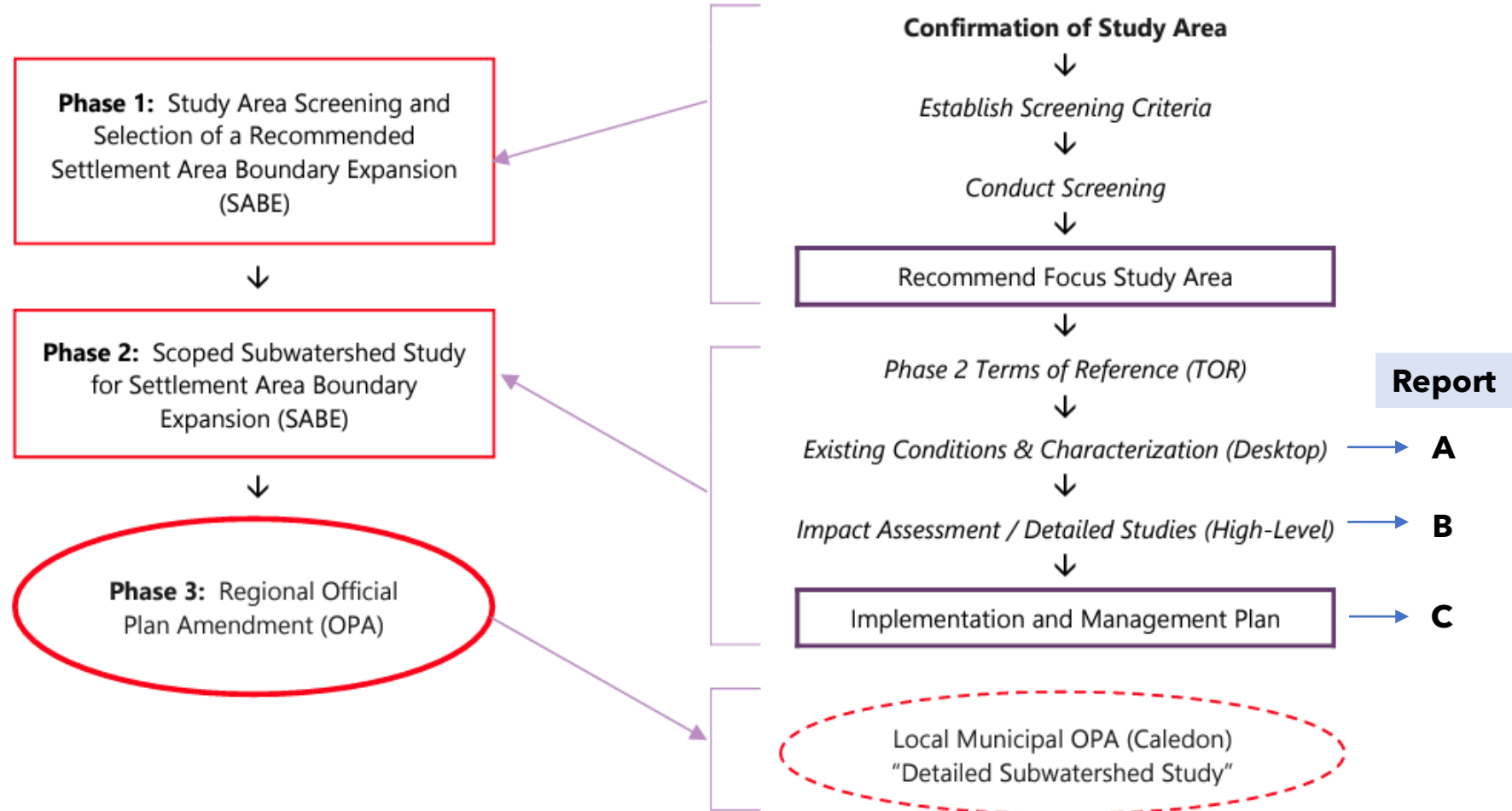
Collaborative Effort: Peel, Local Municipalities, TRCA, CVC, Consulting Teams

SABE Team: Hemson (lead), Planscape, Laura Taylor Designs, ASI, SVN, Monteith Brown, Paradigm, GM BluePlan

Scoped SWS Team: WSP (formerly Wood) (lead), North-South Environmental, Dougan & Associates, Matrix Solutions, C. Portt and Associates, Bill Blackport and Associates

Scoped SWS 'In a Nutshell'

- The Environmental Study was completed under a Two-Phased Approach:
 - Phase 1 - Environmental Screening
 - Phase 2 - Scoped Subwatershed Study



Key Outcomes

1. **Integrates** growth, environmental and infrastructure planning for complete communities
2. **Informs** Regional Official Plan policies on secondary planning for New Urban Areas
3. **Ensures** natural systems in new community areas will be resilient and sustainable
 - Identifies water resource and natural heritage systems with **targets**
 - Recommends a stormwater management **strategy**
 - Provides stormwater design and sizing **criteria** to mitigate off-site flooding and erosion hazards
 - Includes **requirements** for Regional Flood Control by subwatershed
4. Provides Regional level subwatershed planning information and **guidance** to support local secondary planning

Building a Natural Heritage System for Peel's 2051 New Urban Area

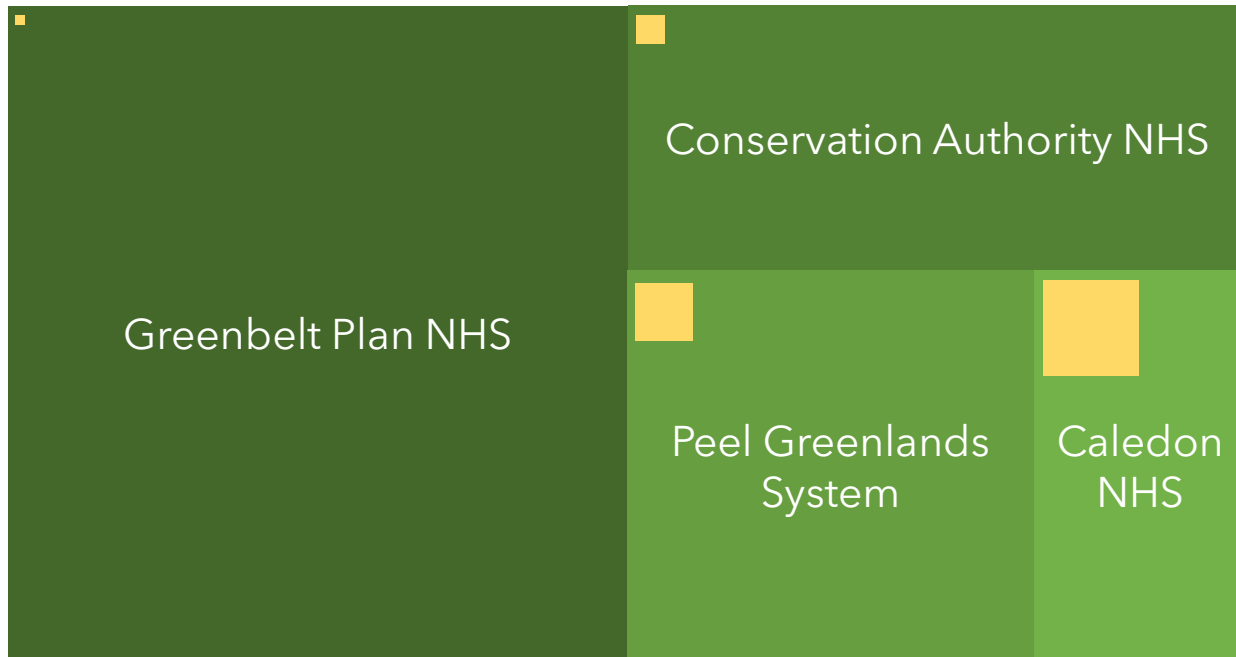
A Vision for the Natural Environment

Change the narrative



- Address challenges of climate change, significant growth
- Build integrated natural systems (WRS, NHS) that will be sustainable, resilient & healthy for people and the environment.
- Create connected systems that protect, restore and enhance function
- Plan for and healthy, complete communities

Existing Systems

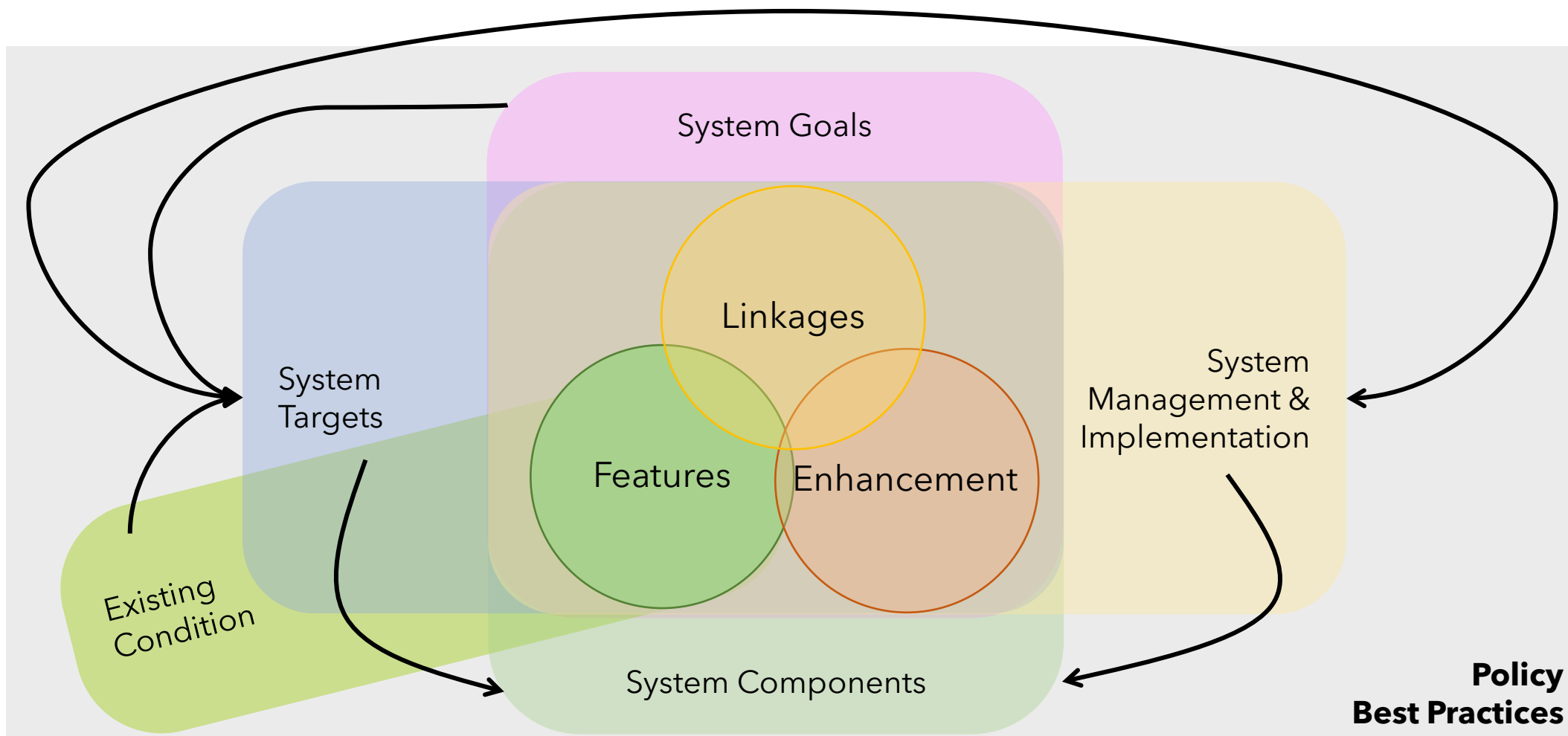


■ Illustrative scale representation

Why Develop **another** NHS?

- Scale
 - Smaller Geography
 - Major Landscape Change
 - Area-Specific Character
- Peel's Vision for the Natural Environment
 - Plan for the Natural Environment
 - Beyond 'business as usual'
 - Build a connected system
 - Build a resilient system
- Policy-based, informed by science

Building the System | Complex Intersections



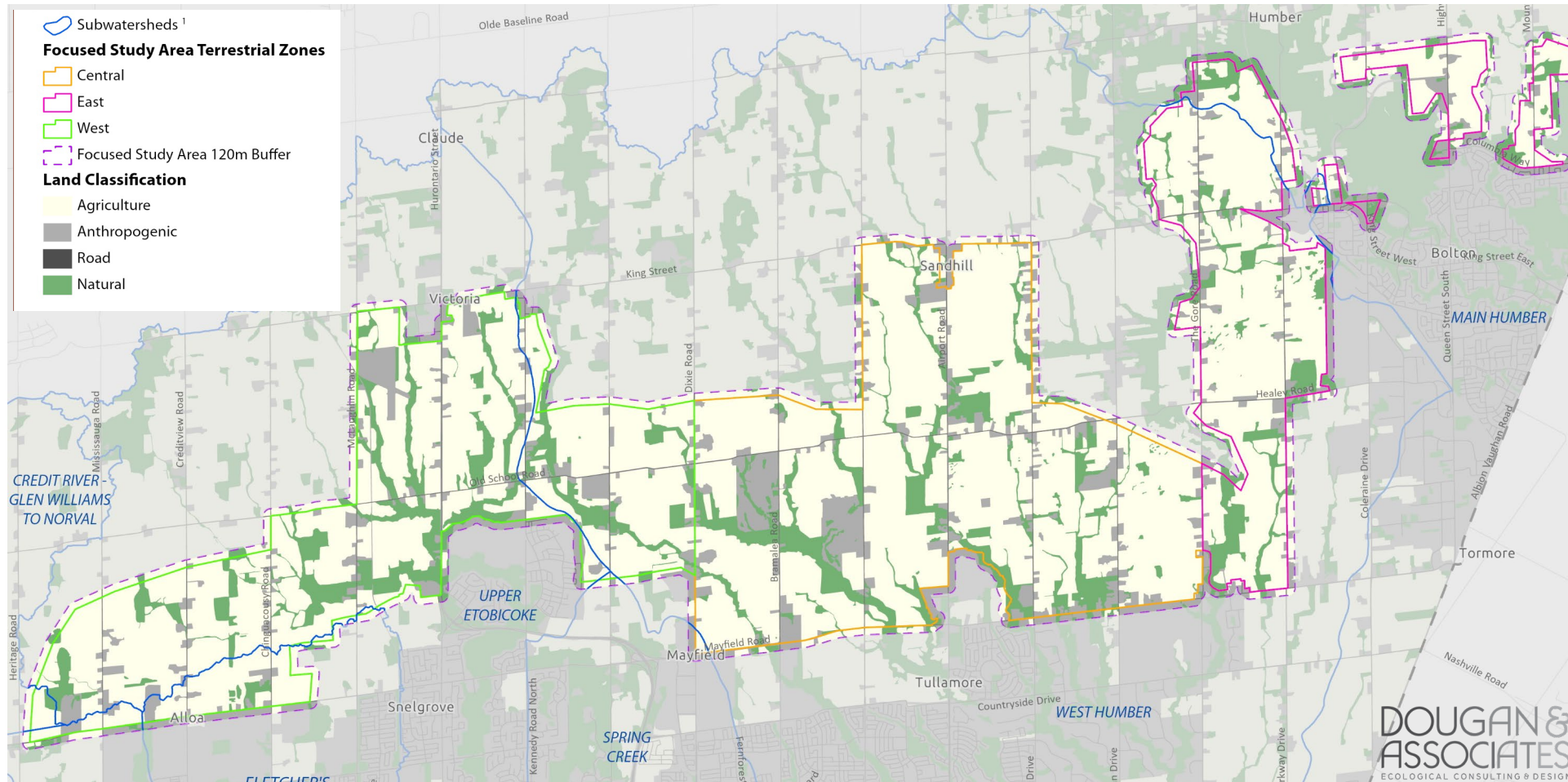
System Goals & Objectives

- Balance policy, emerging science and best practices
- Establish a robust, connected and ecologically resilient system
- Enhance the existing condition to create a sustainable system in a changing landscape matrix
- Support climate change resilience
- Provide clear direction for implementation success

Setting System Targets

- Why Have Targets?
 - Set parameters and guide the development of the system
 - Provide a 'measure' against which to compare and validate outcomes
 - Guide & inform implementation and system management
- In developing targets...
 - More than aspirational
 - Must be achievable in the context of planning and development
 - Implementation must 'follow-through'

Setting System Targets | Existing Conditions



- Predominantly agricultural, anthropogenic
- Cultural communities dominate existing vegetation.
- Natural and cultural vegetation: ~**15%**
- Natural Cover mostly in Greenbelt, within valley corridors, some isolated tableland areas

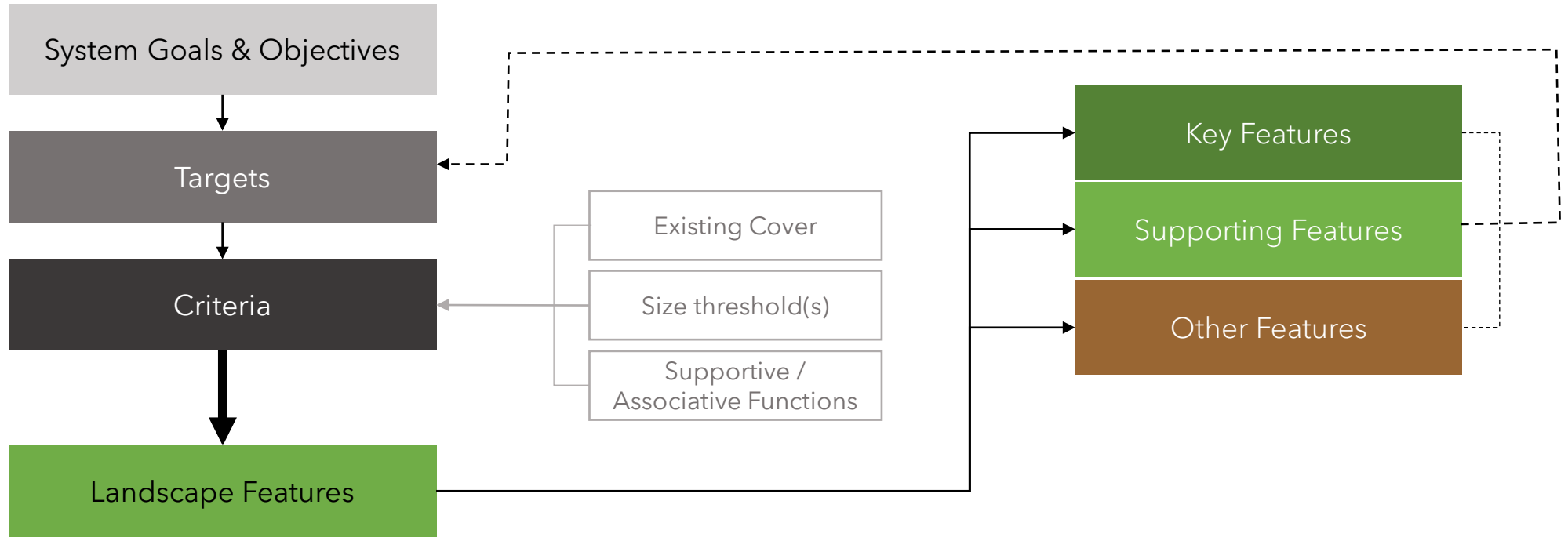
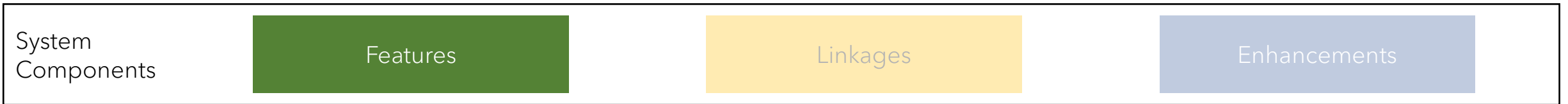
System Targets

Consistent Message:

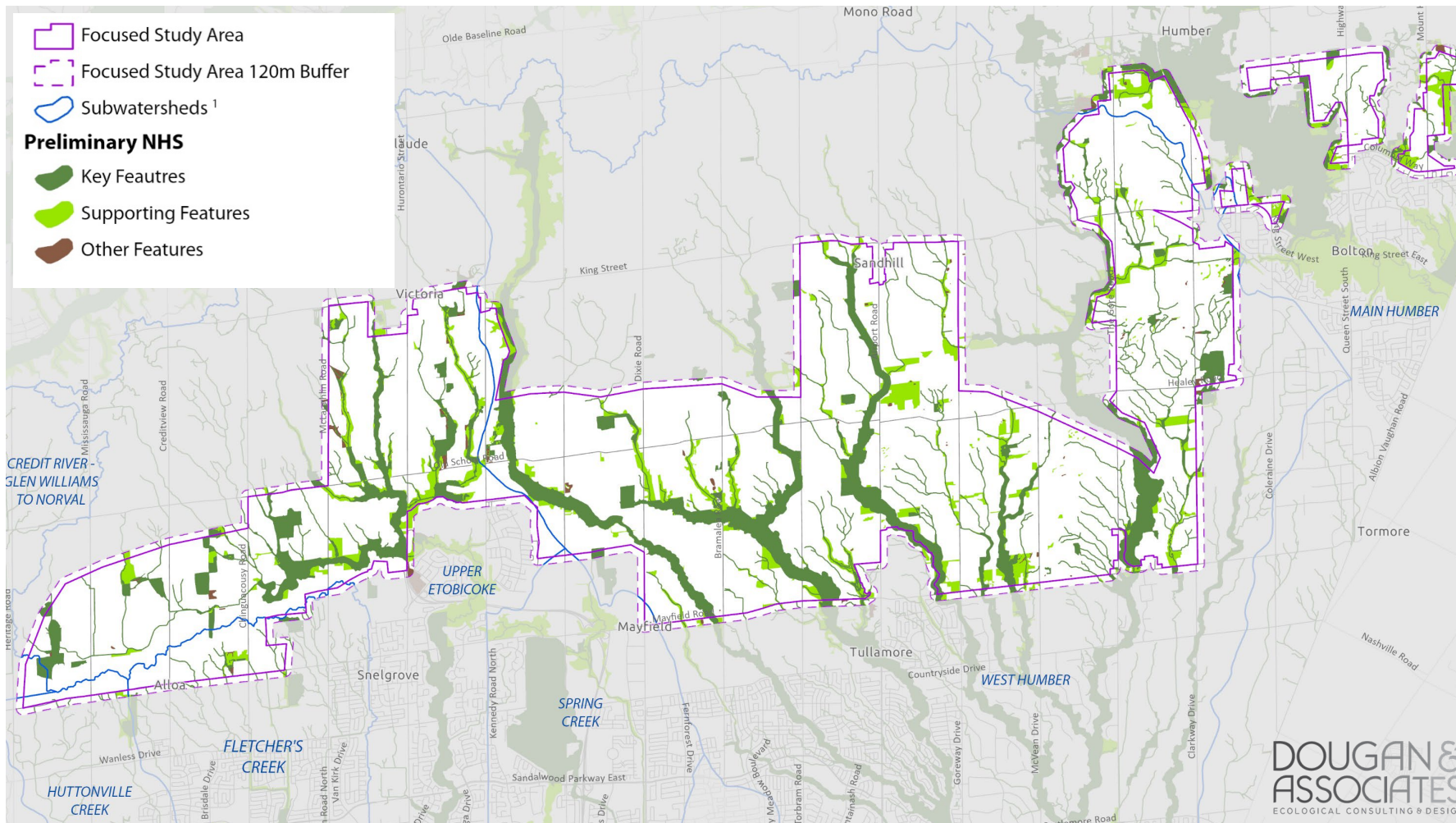
- No Net Loss
- Maintain and where possible, improve function(s)
- Ambitious, but achievable net system gains through enhancement

Feature Type	Target for the FSA NHS
Natural Cover*	<ul style="list-style-type: none"> • No net loss of natural cover.
Woodland	<ul style="list-style-type: none"> • No net loss of existing woodland cover. • Increase total woodland cover through NHS enhancement with a focus on creation of table land features.
Wetland	<ul style="list-style-type: none"> • No net loss of wetland cover. • Increase total wetland cover through NHS enhancements.
Valley and Stream Corridors	<ul style="list-style-type: none"> • No net loss of ecological and hydrologic functions provided by valleylands. • Increase natural cover within valley and stream corridors through NHS enhancement.
Successional / Open Habitats	<ul style="list-style-type: none"> • Maintain important existing successional / open habitats contiguous to other features and areas of the NHS. • Increase representation and quality of open country habitats across the landscape through NHS enhancement opportunities; strive to create at least one habitat area with a minimum size threshold of 5ha.
Aquatic	<ul style="list-style-type: none"> • Achieve 75% naturally vegetated watercourse length through protection of existing, enhancement or restoration⁵.
Sand Barrens, Savannahs, Grasslands	<ul style="list-style-type: none"> • Protection of all Sand Barrens, Savannahs and Grasslands where they occur.
NHS Enhancement	<ul style="list-style-type: none"> • Identify distributed enhancement opportunities across the NHS to support the development of a robust and sustainable system. • Increase natural cover* by 30%

Building the System | Features



Building the System | Features



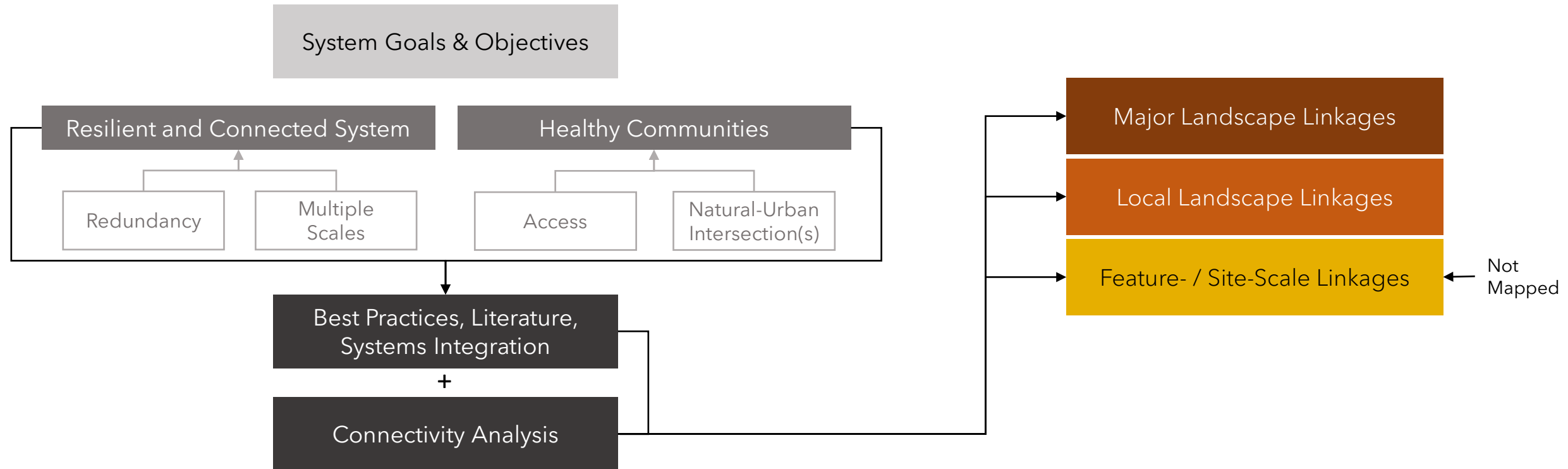
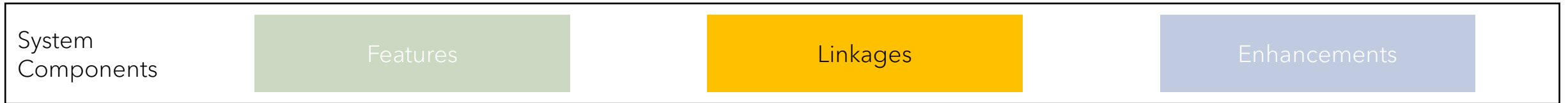
Feature Category	% Cover
Key Features	11%
Supporting Features	6%
Other Features	<1%
Total	17%

Wait... wasn't natural cover 15%?

- Valleylands delineated as a landform feature.
- Not all valleyland areas are currently in 'natural cover'.

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Building the System | Linkages



Building the System | Linkages

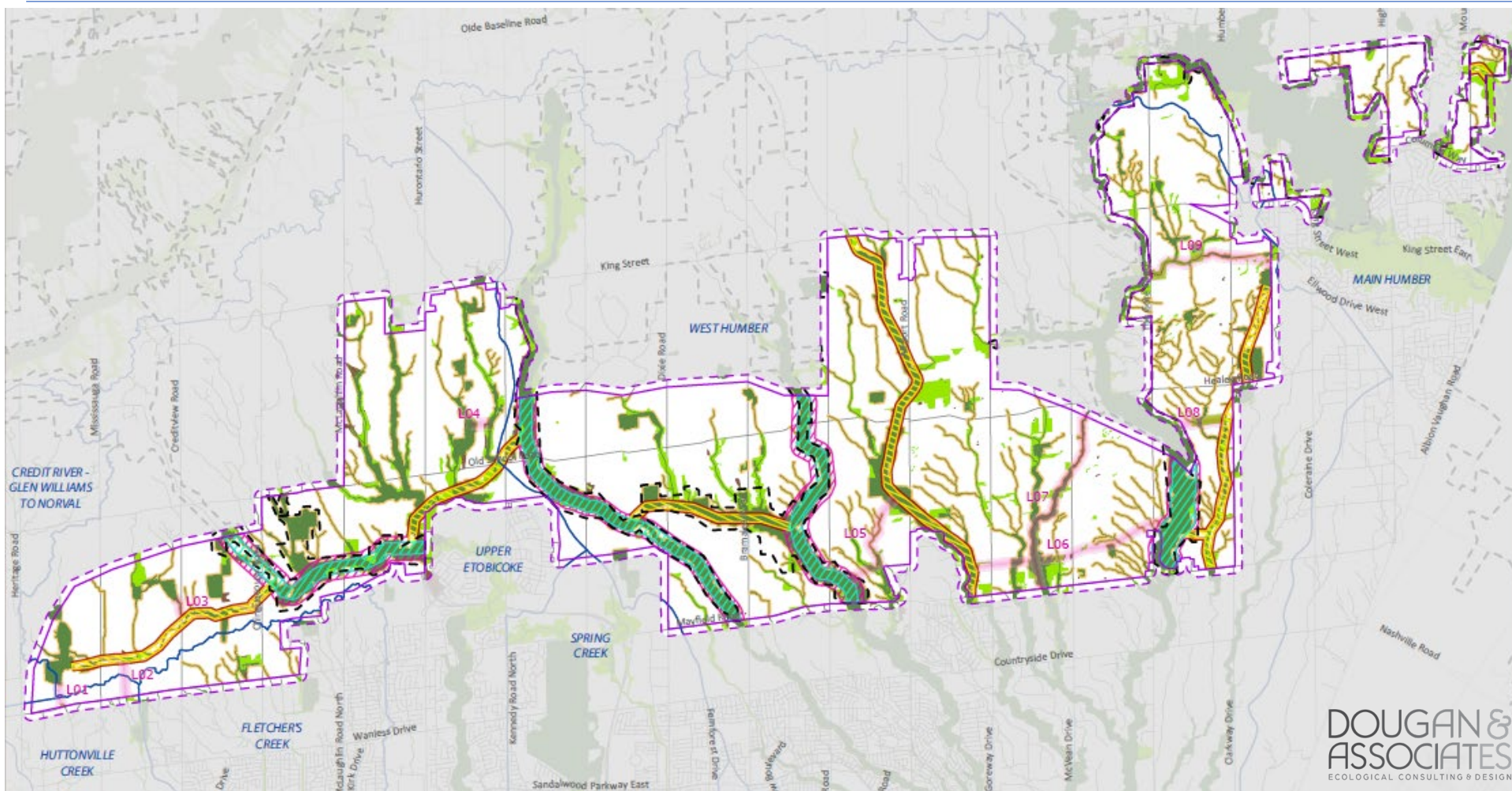


Minimum width that natural, self-sustaining vegetation is to be maintained or established

Soft transition between natural and built form. Min 30% enhancement, max 30% built, and permeable land uses.

	Minimum Vegetated Width		Permeable Landscape Zone		Linkage Width
Major Landscape Linkages	100+ m	+	60+ m	=	160+ m
Local Landscape Linkages	60+ m	+	30+m	=	90+ m
Not Mapped → Feature- / Site-Scale Linkages	30+ m	+	n/a	=	30+ m

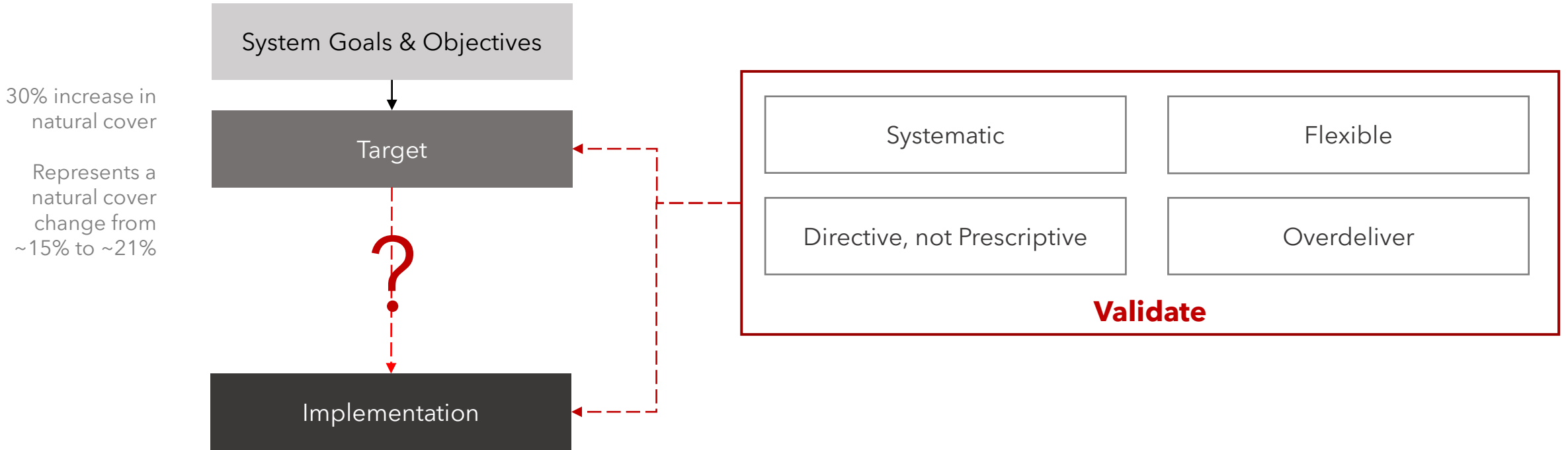
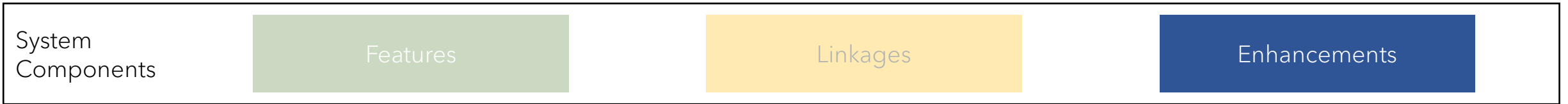
Building the System | Linkages



- Focused Study Area
- FSA 120m Adjacent Lands
- Subwatersheds ¹
- Provincial NHS ²
- Preliminary NHS**
 - Key Features
 - Supporting Features
 - Other Features
 - Key Feature Buffers (30m)
- Preliminary Linkages**
 - Major Landscape Linkage - Minimum Vegetation Width
 - Major Landscape Linkage - Permeable Landscape Zone
 - Local Landscape Linkage - Minimum Vegetation Width
 - Local Landscape Linkage - Permeable Landscape Zone
 - Conceptual Linkage

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Building the System | Enhancements



Building the System | Enhancements

System Components

Features

Linkages

Enhancements

Defined Enhancements

Improved shape, size, contiguity

Floodplain

Linkage - Minimum Vegetated Width

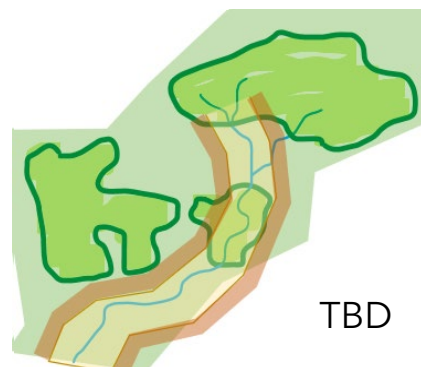


Undefined Enhancements

Provincial NHS

Linkage - Permeable Landscape Zone

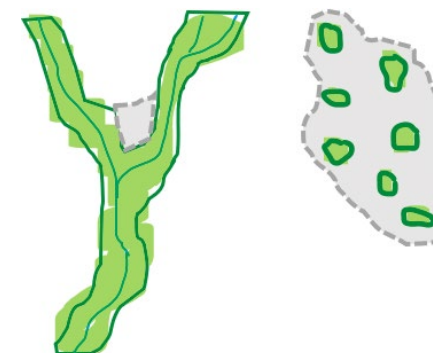
Un-mapped Enhancements



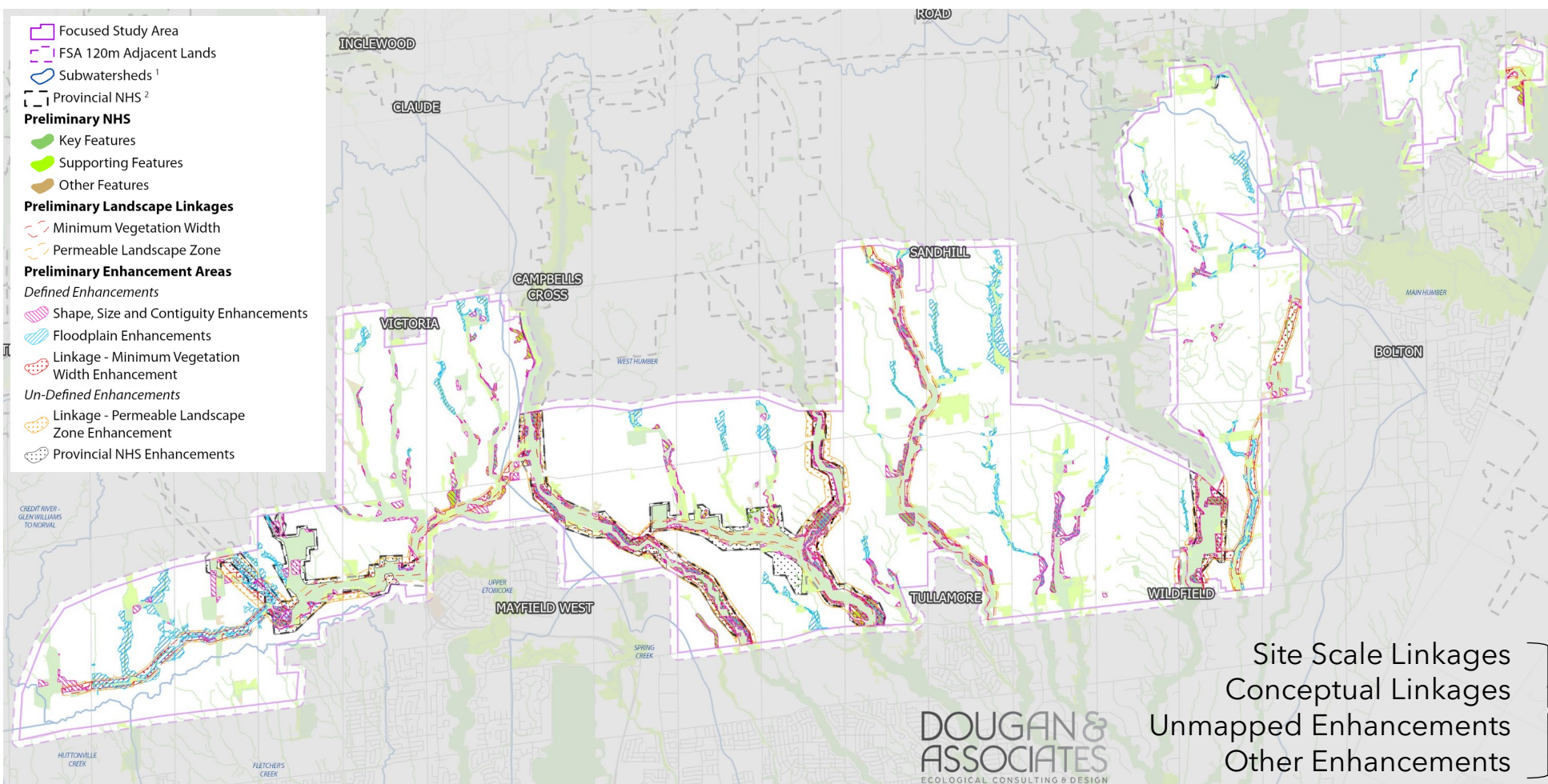
Other Enhancements

Conceptual enhancement areas

No area (ha) assigned



Building the System | Enhancements



Mapped Enhancements

33% valleylands
 27% linkages
 17% Greenbelt Plan NHS
 16% floodplain
 6% unconstrained land

Target validation

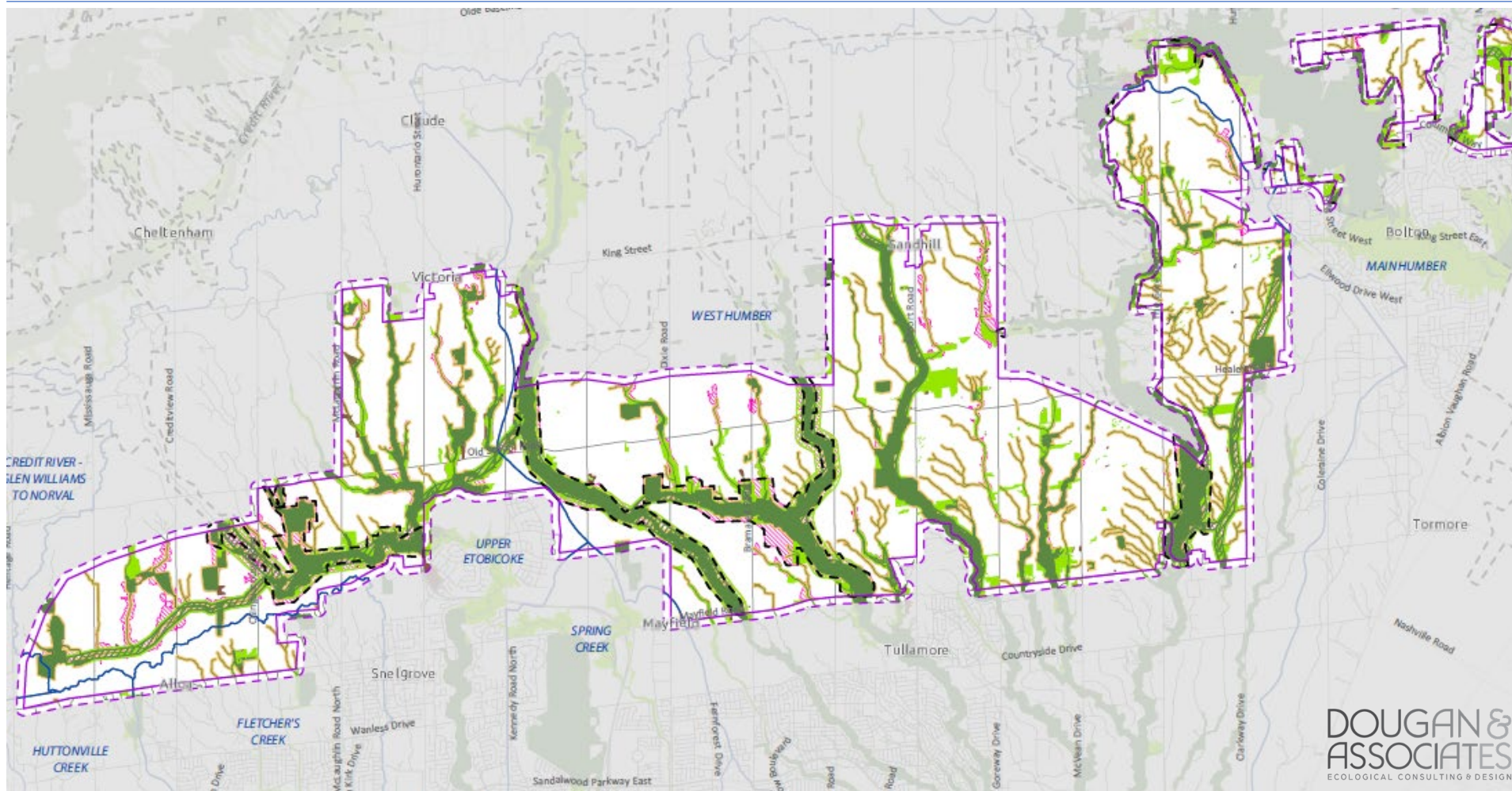
Required to achieve 30% natural cover ↑ target:
 ~400 ha

Mapped enhancements :
 ~390 ha (>99%)

Shortfall:
 ~10 ha (0.25%)

Site Scale Linkages
 Conceptual Linkages
 Unmapped Enhancements
 Other Enhancements

The Natural Heritage System



- Focused Study Area
- FSA 120m Adjacent Lands
- Subwatersheds¹
- Provincial NHS²
- Preliminary Enhancements
- Preliminary NHS**
 - Key Features
 - Supporting Features
 - Other Features
 - Key Feature Buffers (30m)
- Preliminary Linkages**
 - Minimum Vegetation Width
 - Permeable Landscape Zone

Directing Implementation

- Land budget planned for the NHS
- Future work must meet or exceed guidance of the Scoped Subwatershed Study
- Strong policy
- Directive guidance for feature & system management

Directing Implementation

Net Gain Mitigation Hierarchy → Management Objectives

Avoid (as a priority) and **minimize** impacts to the NHS through siting and design.

- Places emphasis on protecting features 'in-situ'
- Emphasizes planning design that works with, rather than conflicting with natural areas

Implement mitigation measures to address anticipated impacts that cannot be avoided (e.g., buffers) and after opportunities to minimize have been integrated.

- Mitigation strategies which consider and address complex interactions
- Guidance on buffers is directive, but not prescriptive

Directing Implementation

Net Gain Mitigation Hierarchy → Management Objectives

Connect the system through linkages at multiple scales to ensure the continued flow and movement of species and materials across the landscape.

- Places emphasis on protecting features 'in-situ'
- Emphasizes planning design that works with, rather than conflicting with natural areas

Enhance the system to achieve a net benefit through habitat creation, restoration and, where appropriate through integrated planning of green infrastructure, parks, open space and the NHS.

- Sub-watershed specific enhancement targets, guidance and flexibility provided to achieve target
- Goes beyond natural cover to consider contributory benefits

Directing Implementation

Net Gain Mitigation Hierarchy → Management Objectives

Where appropriate, consider replication of existing features in a location that better supports its form and function in the context of the NHS as a whole.

- Like-for-Like - replication of feature type and function(s) on the local landscape
- Restricted application
- Guidance provided on conditions & features for which this may be considered

Where appropriate, consider compensation as a mechanism to maintain natural cover on the local landscape and/or achieve a net benefit to the system.

- Like-for-Like or Alternative Habitat Compensation - informed based on 'best option' for system benefit
- Restricted application
- Guidance provided on conditions & features for which this may be considered

Key Takeaways

- Opportunity to change the narrative by planning for the NHS
- Identify, validate that a substantial enhancement target can be achieved
- Create a connected and robust system more resilient to climate change
- Provide clear, directive guidance for implementation
- Build in flexibility to permit refinement & detailed information to inform the system
- Next phases of work must meet or exceed guidance, criteria and targets
- Root the system in policy, be informed by science

Thank You & Recognition



Project Team:



C. Portt and Associates
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