Planning Transport Activities for Urban Growth Areas at a Local Level

Case Study: Belfast Area Plan

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Purpose

- ➢ Strategic v Local transport studies
- ➢ Case study: Belfast Area Plan
- ➢ Innovative assessment methods and tools

Study Typology

Strategic Transport Studies

➢ Outcomes for a transport system

➢ Area wide / regional / national objectives

Study Typology

Local Transport Studies

➤ Outcomes for a community

➤ People driven and not system driven

➤ Local area objectives

Belfast Area Plan

Christchurch City Council

Belfast Area Plan

STUDY AREA

Belfast Area Plan Purpose

➢ Provide the framework for land use planning and public expenditure over the next 30 years. It:

  – Reflects how the local community wish the settlement to develop and grow;

  – Ensures that growth is integrated with service provision, such as transport;

  – Remains consistent with the community's evolving views; and

  – Maintains the environmental values of Belfast and its surrounds.

Belfast Area Plan Vision

Belfast will grow and develop its sense of community, cultural identity, and economic competitiveness whilst ensuring its environmental sustainability

➢ Vision supported by Goals
➢ Goals supported by Objectives

Belfast Area Plan Objectives

Objective 1: Transport and land use patterns are aligned to achieve sustainability, efficiency, and liveability.
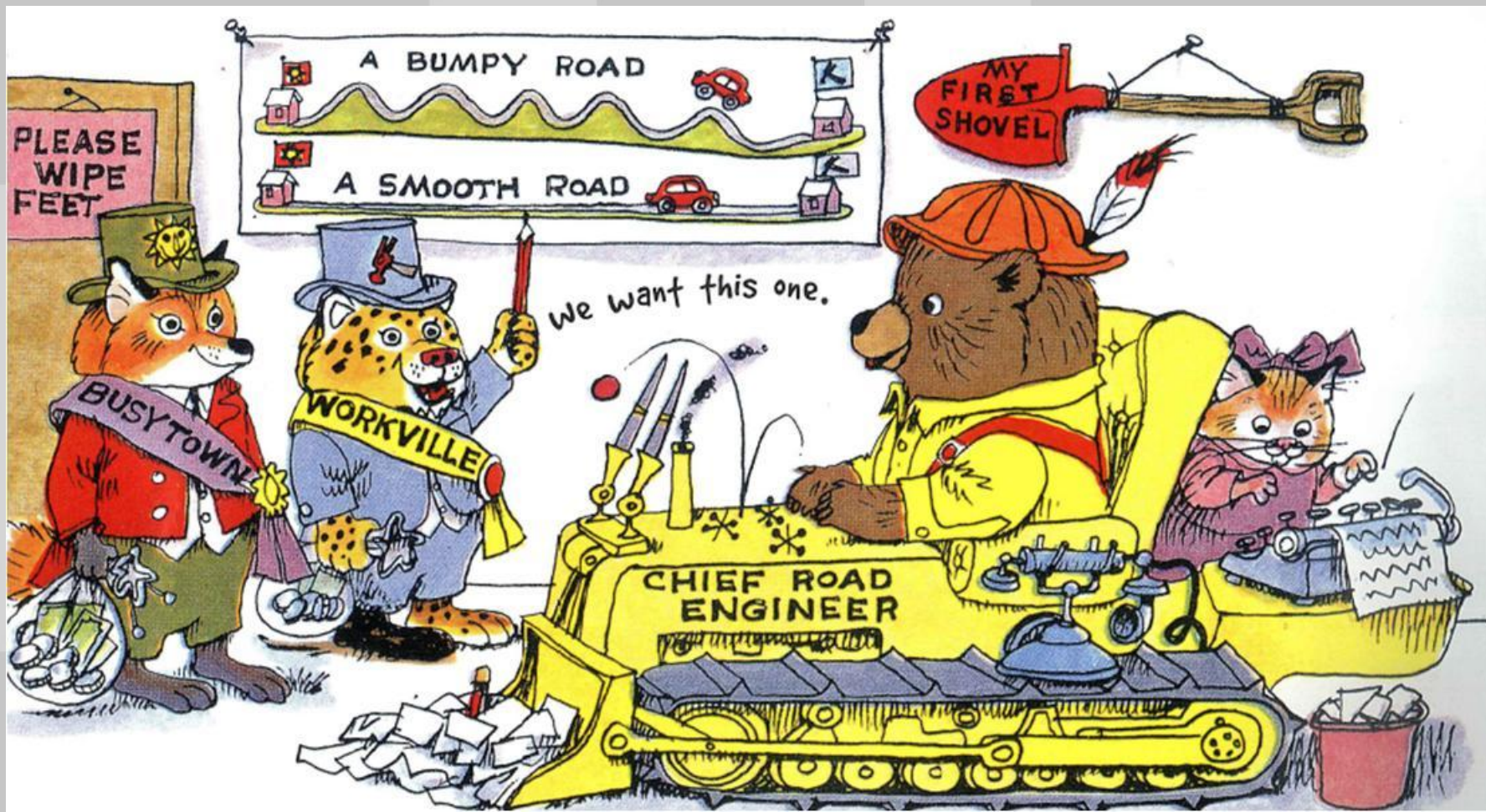
Objective 2: The transport network provides for all modes of travel.

Objective 3: The adverse effects of transport on the environment are managed.

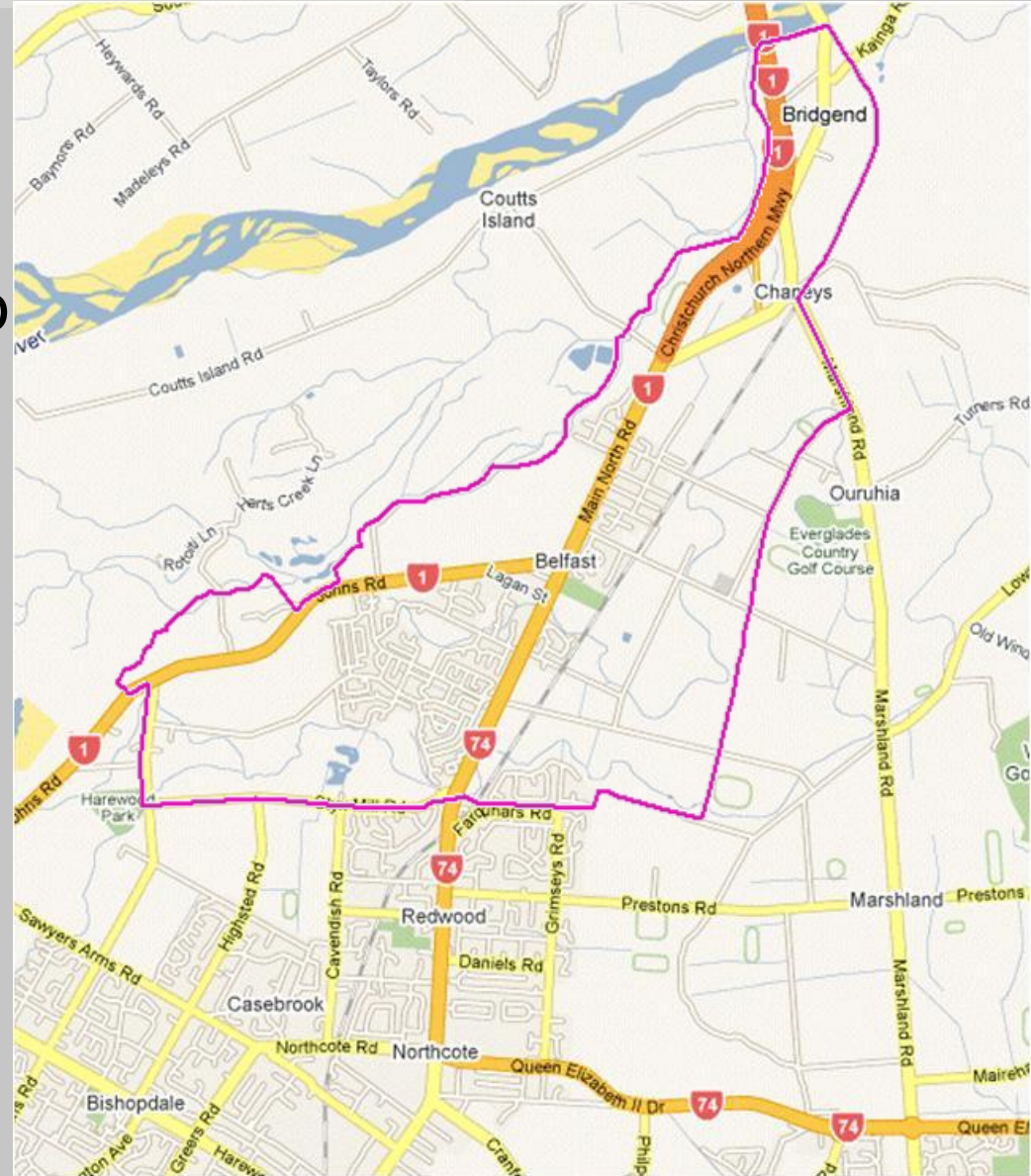*Objective 4: Development supports public transport, walking and cycling.*

Our Challenge

➢ Translate objectives into measurable outcomes

Existing Environment

➢ Dominated by transport corridors

➢ Northern gateway into Christchurch

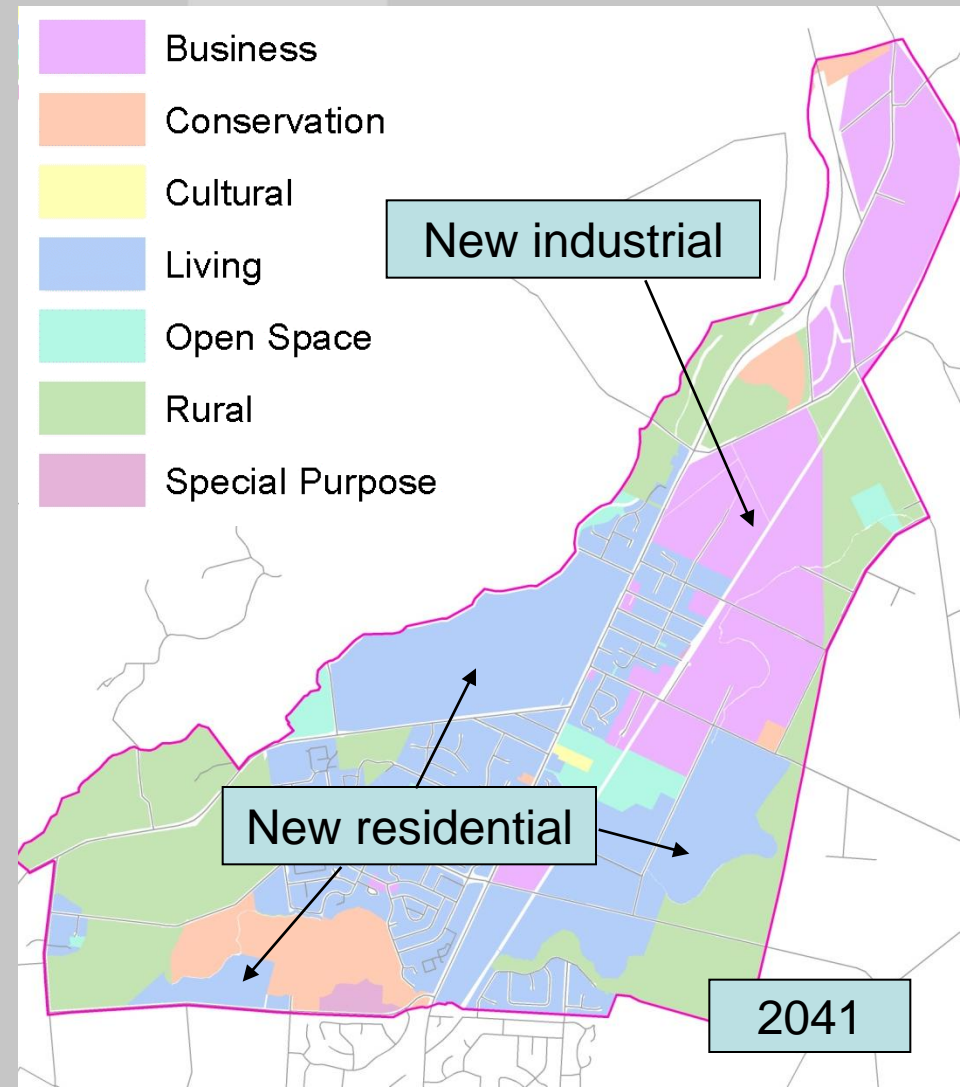➢ Transport is a major issue for the community

Existing Environment

Existing Environment

Planned Urban Growth

➢ Belfast 2006:

~ 2,800 households

~ 7,600 people

~ 170 Ha industrial land

➢ Belfast 2041:

~ 6,000 households

~ 15,000 people

~ 280 Ha industrial land

➢ Greenfields expansion

Business

Conservation

Cultural

Living

Open Space

Rural

Special Purpose

New industrial

New residential

2041

Planned Infrastructure

abley
transportation consultants

CNATI Package of Transport Activities:

- ✓ Additional road capacity,
- ✓ Public transport infrastructure,
- ✓ Active transport infrastructure,
- ✓ Travel behaviour change programmes,
- ✓ Road safety, and
- ✓ Public transport service.

Western Belfast Bypass

Northern Arterial

High Quality Transit Corridor
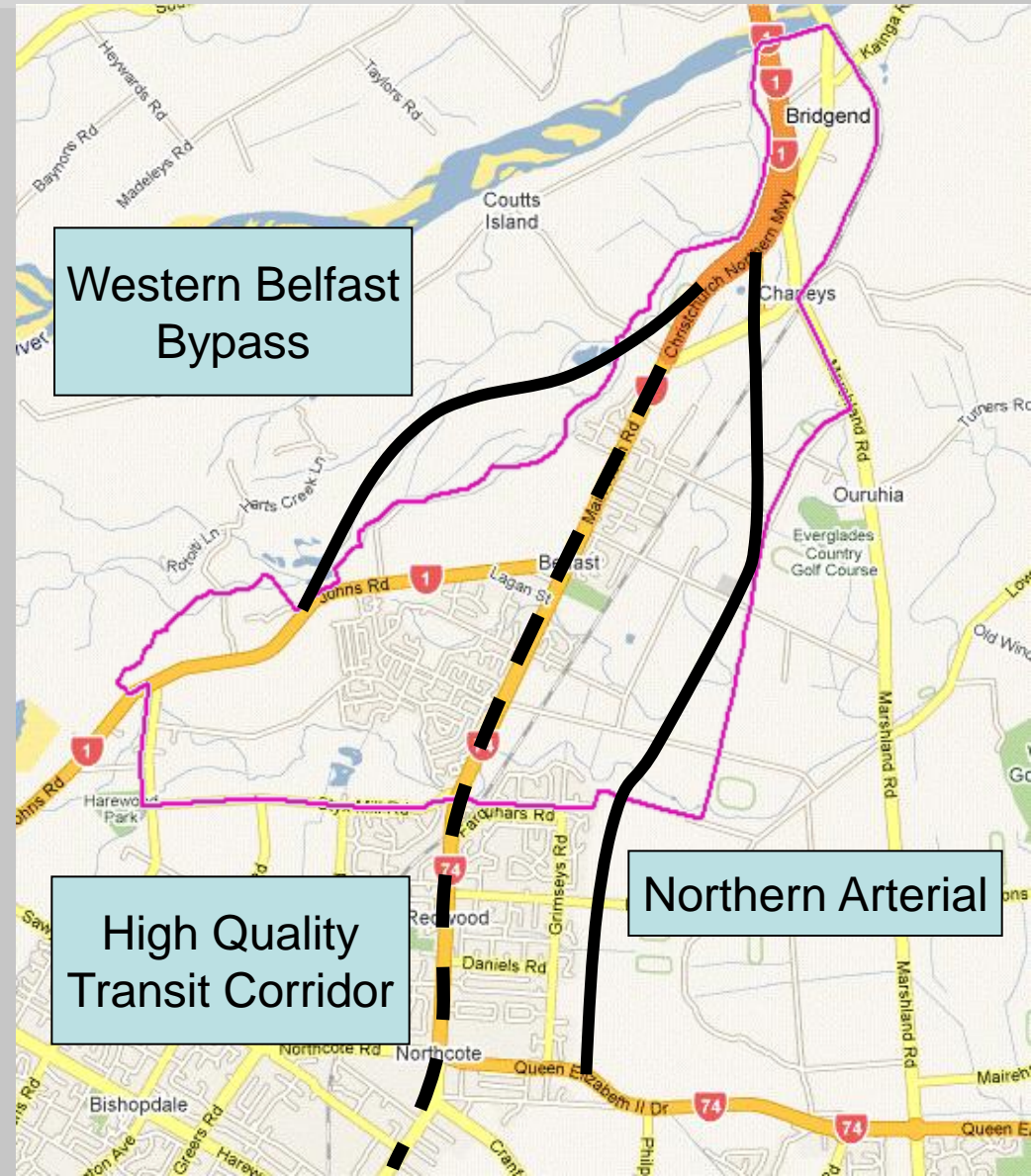
Identified Issues

Existing

- ➢ Dominance of transport corridors
- ➢ High reliance on private car travel to work
- ➢ Social and community impacts

Planned

- ➢ Growth in Belfast and Waimakariri District
- ➢ Demand for travel will increase
- ➢ Strategic transport projects = changed transport environment
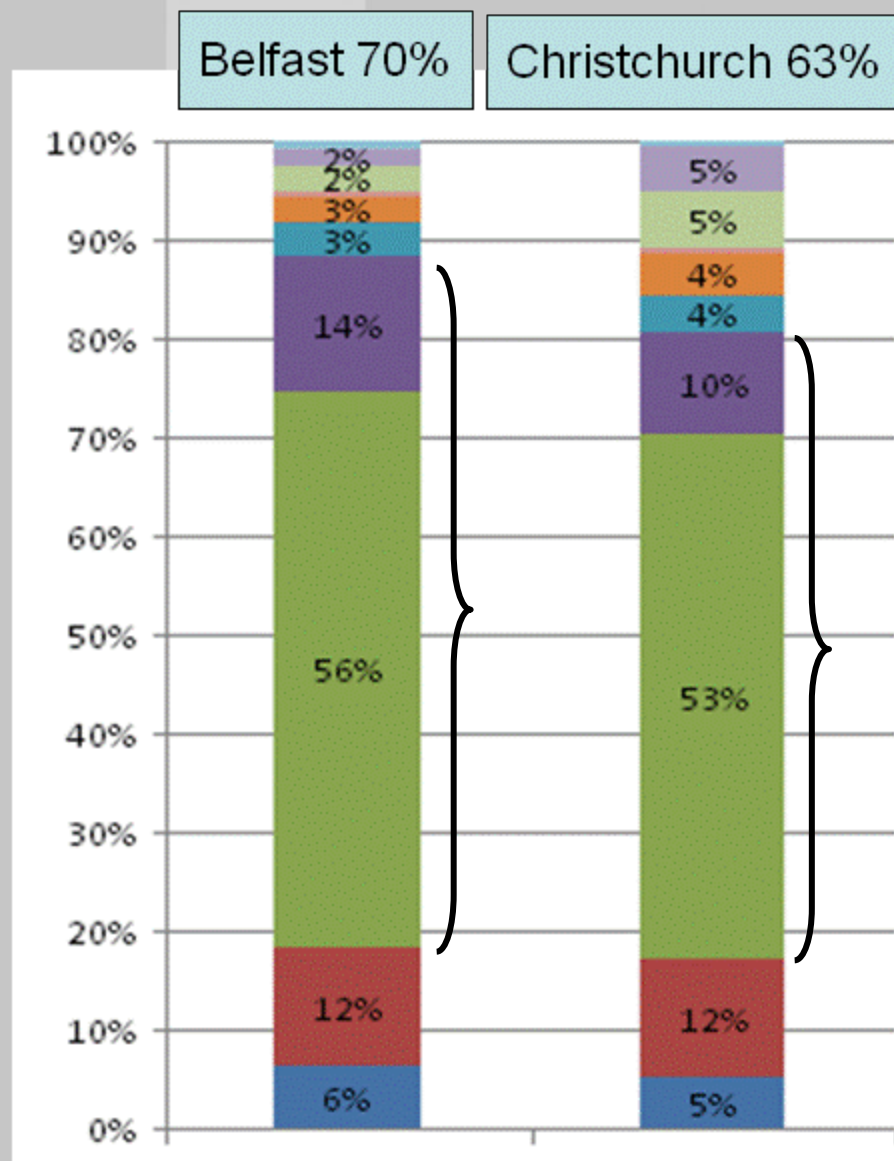
Desirable Outcomes

➢ High quality access to key facilities

➢ Connecting 'People, Places and Products'

➢ Realistic mode choice options

➢ Reduced reliance on private car travel

➢ Lock-in benefits of lower traffic volumes

➢ A highly walkable community
  - interconnected
  - permeable
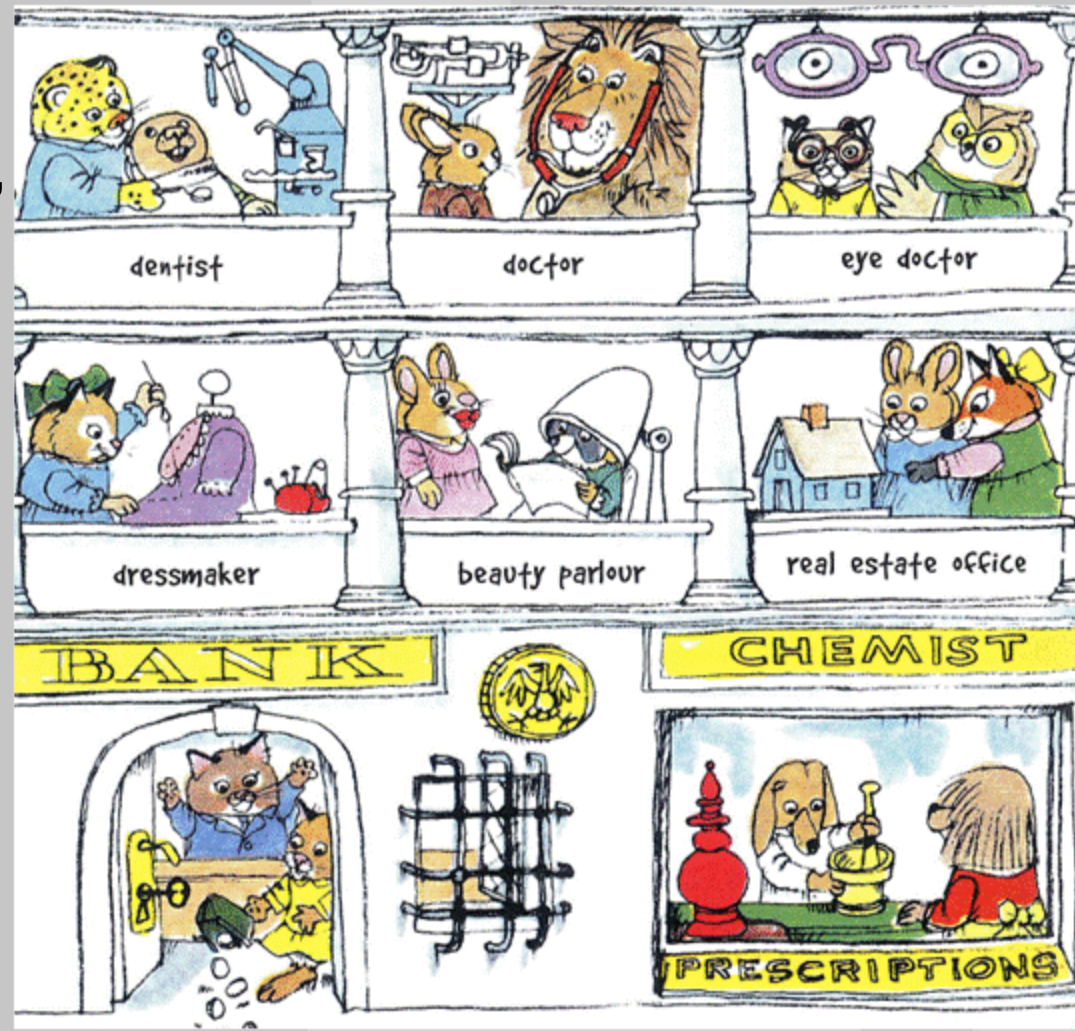
Travel Demand Management

Reduce travel demand by private car

Manage travel demands for all modes

Invest in appropriate infrastructure
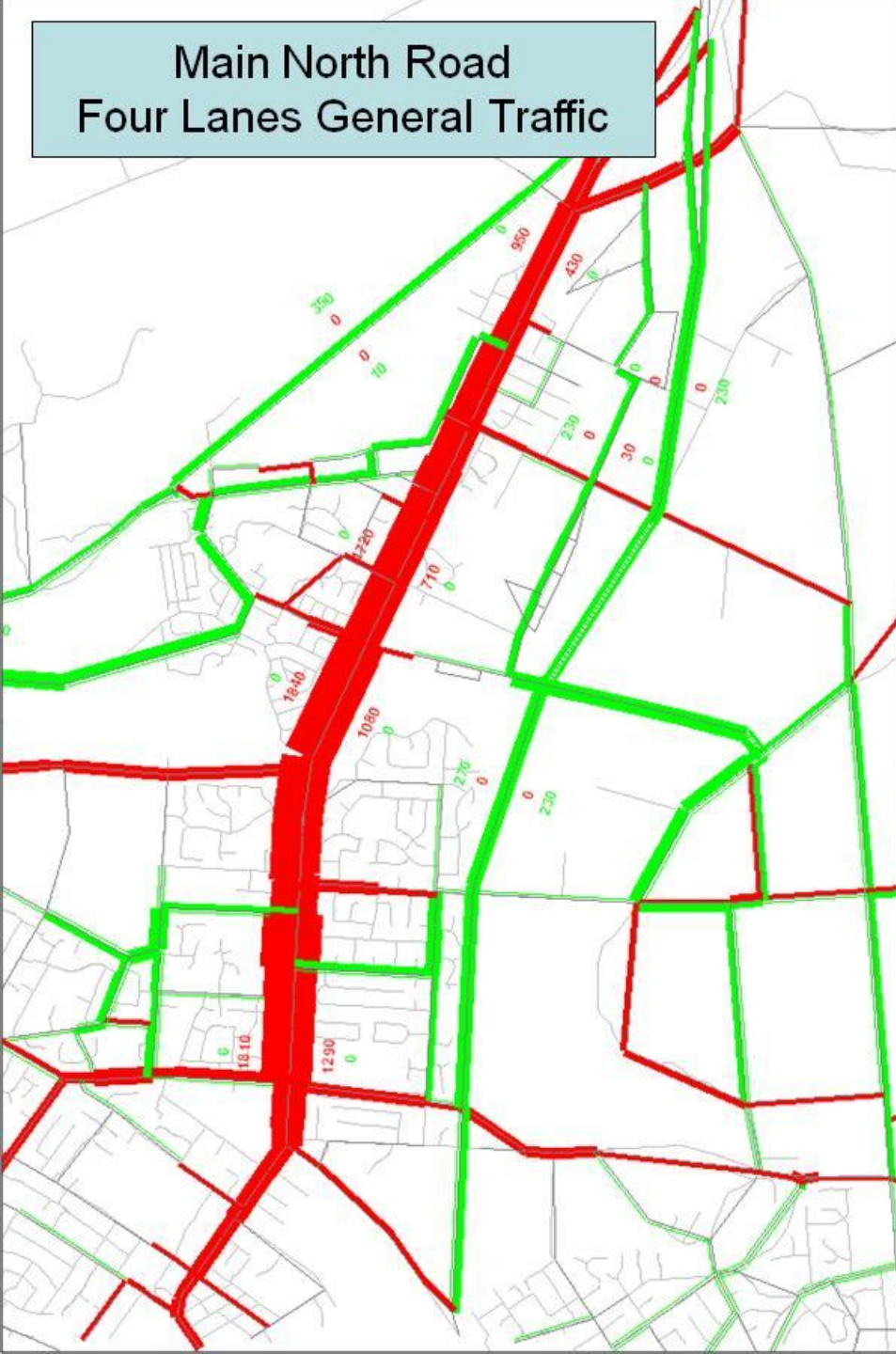
Methods and Tools

Traditional methods

- ➢ Assess transport network performance
- ➢ Measure against standard industry measures
- ➢ Not informing desired outcomes

Innovative methods

- ➢ Accessibility modelling
- ➢ Informs desired outcomes
- ➢ Benchmark against other areas

Main North Road
Four Lanes General Traffic

- ➢ ~ 3,000 vpd increase
- ➢ Longer distance trips
- ➢ Induced traffic
- ➢ Fail to lock-in benefits
- ➢ Retains existing poor community outcomes:
  - Lack of integration
  - Disconnection
  - Social severance

Traditional Techniques

- ➢ Intersection Modelling
  - • SIDRA Intersection
    - ✓ Performance testing
    - ✓ Informs timing and form of key intersections

- ➢ Iterative process to refine transport network plans

Innovative Techniques

➢ How do we assess desired outcomes e.g. high quality access to key facilities?

➢ Need a method of measurement

"*If an organisation does not measure what it values, it will end up valuing what it measures.*" UK Audit Commission

Measuring Accessibility

➢ Not a new concept

Access

Mobility

Opportunity

"..Accessibility is a measurement of the spatial distribution of activities about a point, adjusted for the ability and the desire of people or firms to overcome spatial separation." (Hansen, 1959)

Walkable Community

Aims:

➢ Access key community facilities by walking

➢ Reduced reliance of private car travel

Achieved by:

➢ Integrating land use and transport planning … but how?

Walkable Neighbourhoods

Land use:

➢ Dispersed approach v centres based

➢ Right activity in the right location
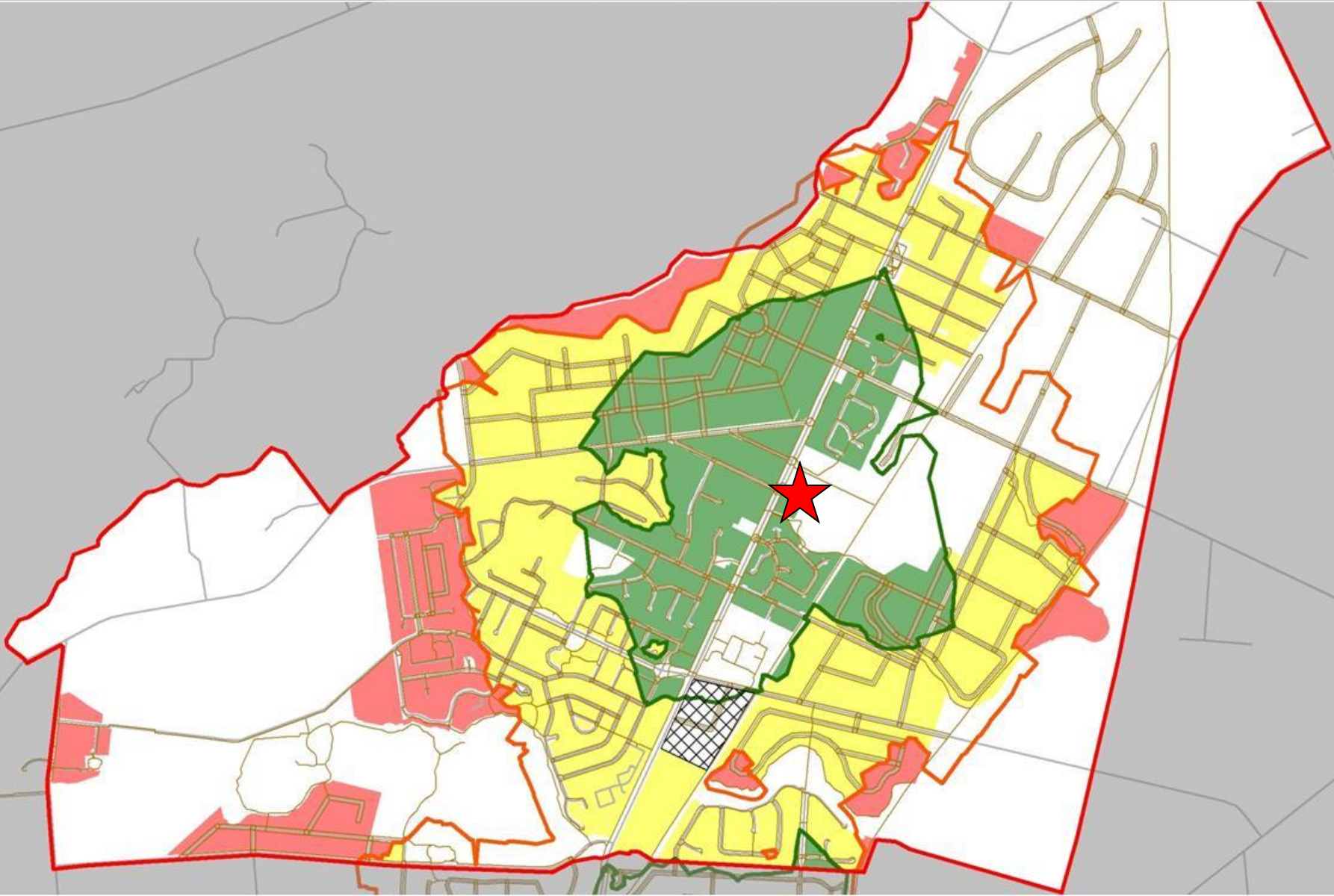
➢ Mixed use development

Transport:

➢ Interconnected network

➢ Permeable movement patterns

Accessibility Modelling

➢ Modelled walking accessibility to:

   ✓ Bus Stops

   ✓ Primary Schools

   ✓ Shopping Opportunities

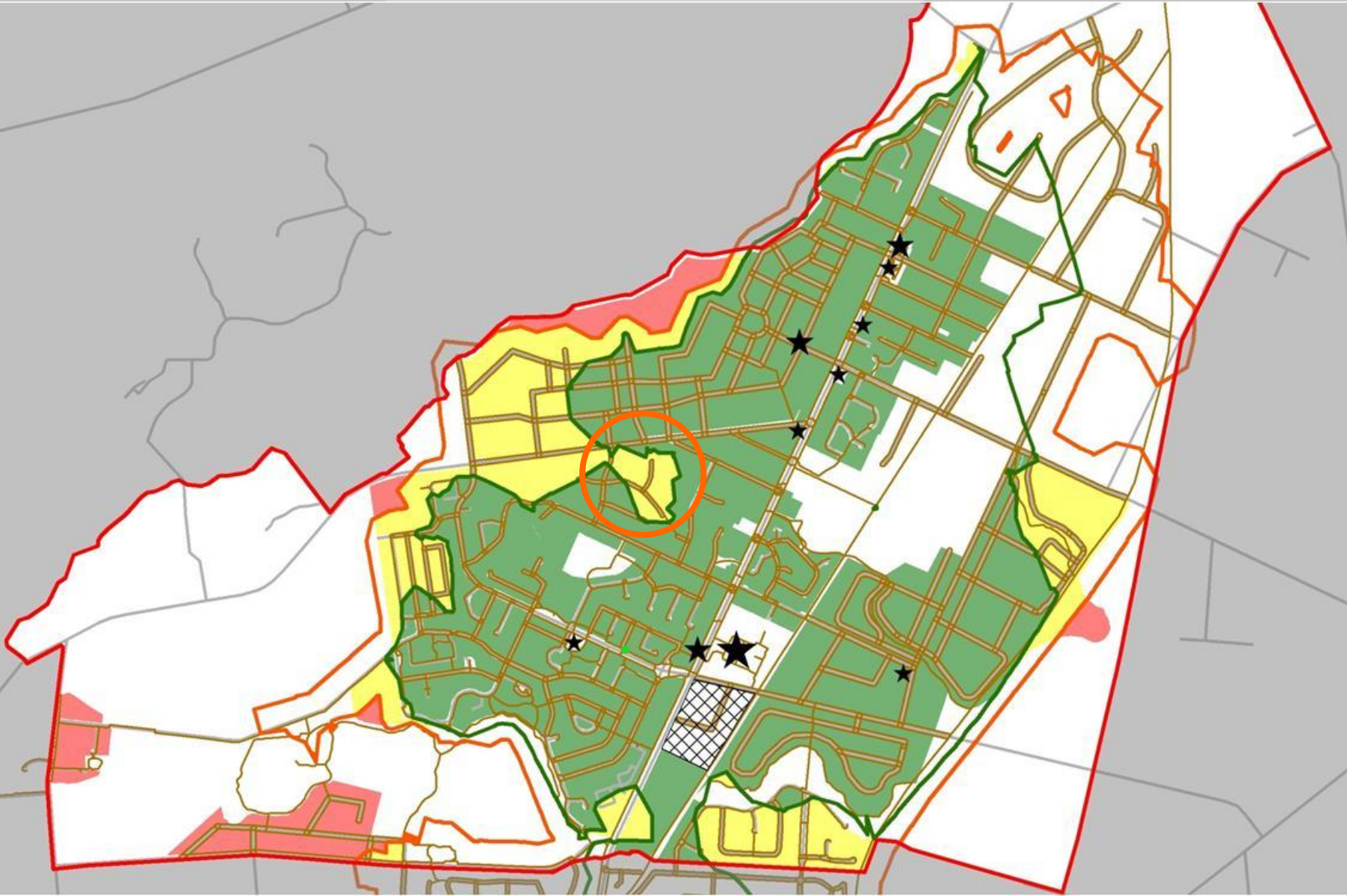➢ Compared performance citywide and with other outer suburbs

Accessibility to Primary Schools

Accessibility to Primary Schools

Region	Mean	85th %ile
Belfast (2006)	38%	81%
Citywide	84%	93%
Hornby	78%	96%
New Brighton	85%	96%
Halswell	88%	93%
Belfast 2041	**25%**	**76%**

Accessibility to Shopping

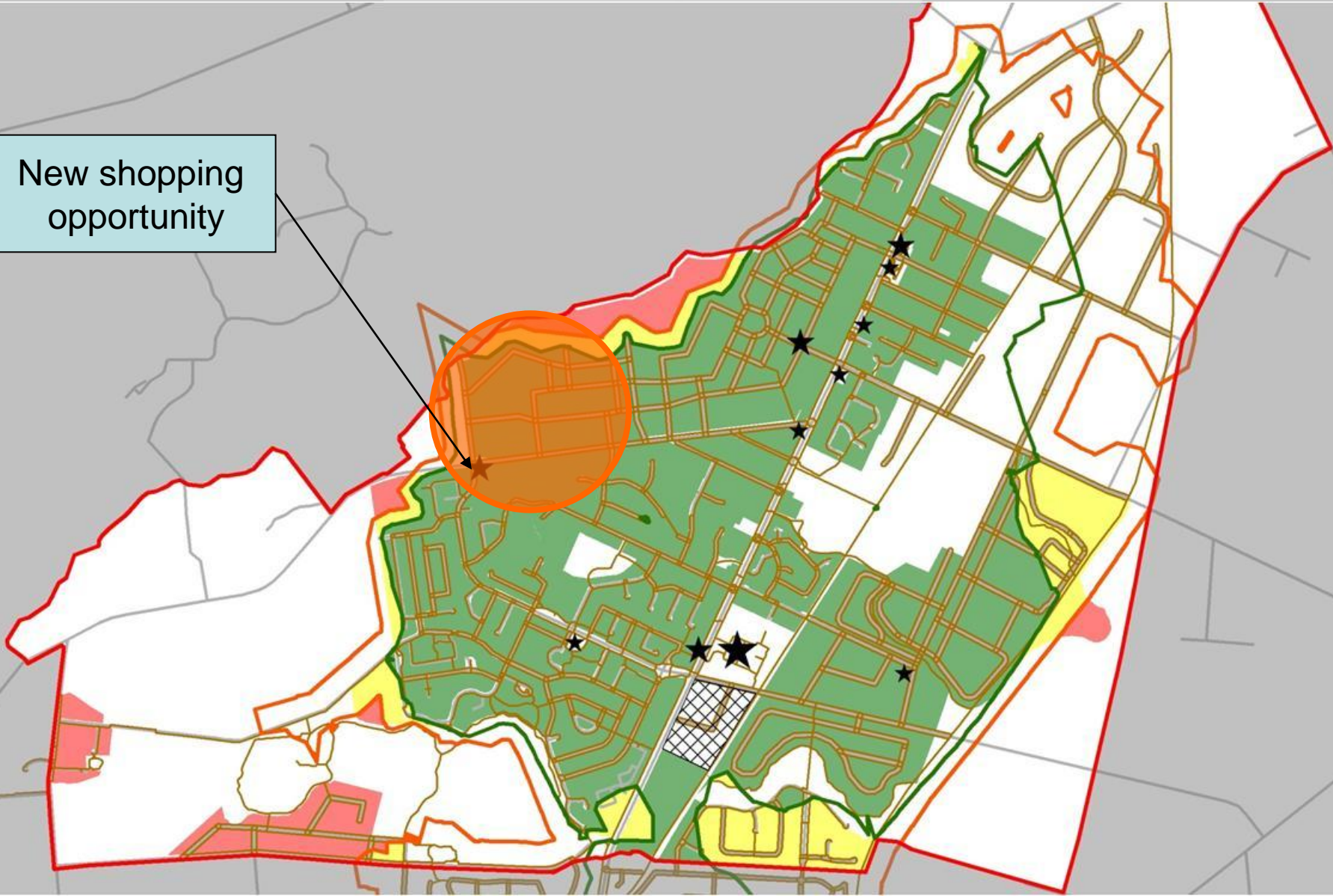| Region	Mean	85th %ile
Belfast (2006)	67%	88%
Citywide	80%	94%
Hornby	77%	94%
New Brighton	78%	99%
Halswell	76%	93%
Belfast 2041	**65%**	**86%**

Accessibility Optimisation

- ➢ Network improvements

- ➢ Land use changes

- ➢ Iterative process

Accessibility to Shopping
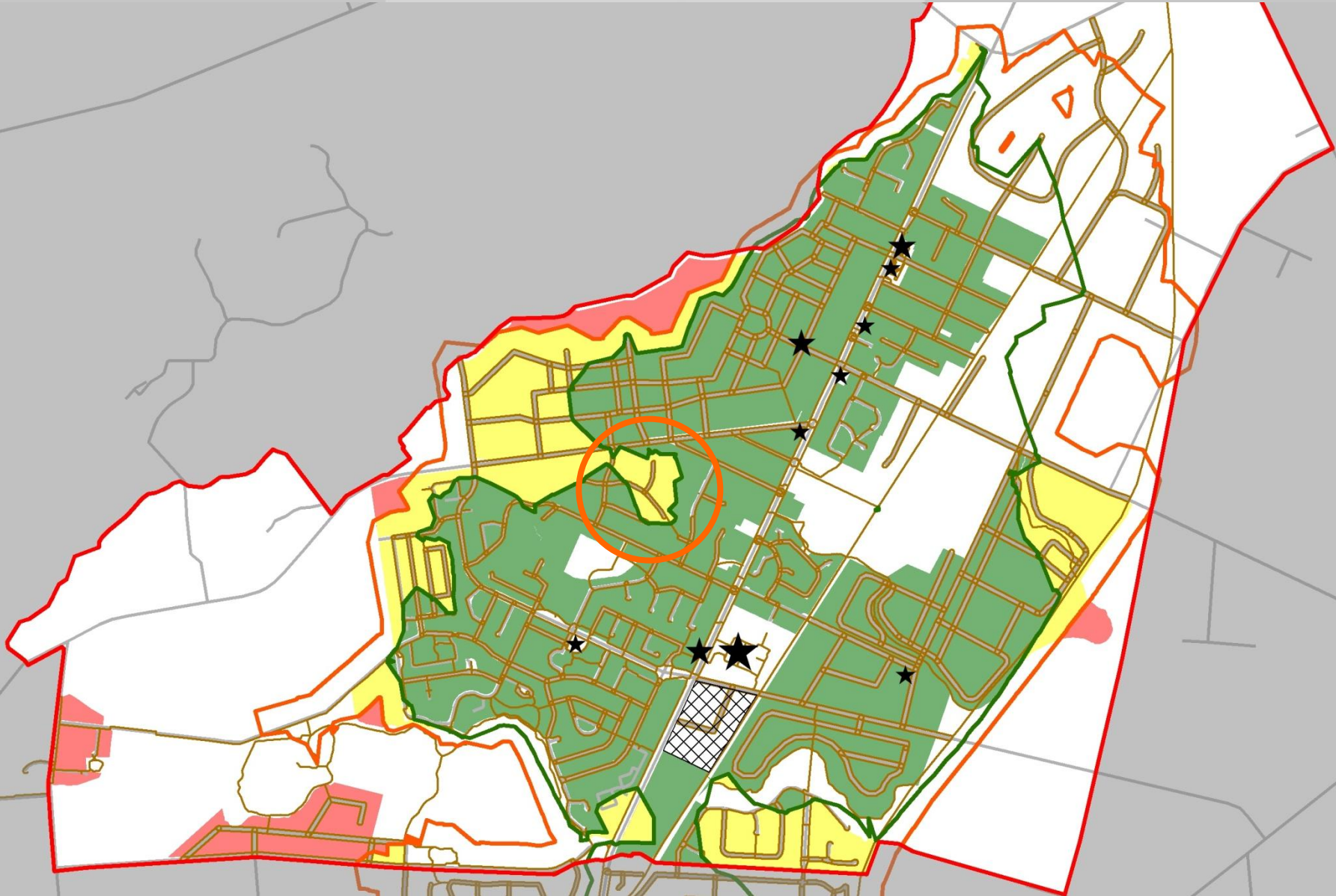
Accessibility to Shopping

New shopping opportunity

Accessibility Findings

➢ Accessibility to the primary school is a major issue

➢ Belfast needs another primary school

➢ Proposed movement network is generally interconnected and permeable

➢ Dispersed approach of facilities improves accessibility

- Need to balance against multiple opportunity of a centres based approach

Conclusions

➢ Local area studies are people driven

➢ Long-term, sustainable, community-focused outcomes

➢ Different assessment methods and tools

➢ We need to measure what we value

➢ Accessibility modelling enables accessibility to be optimised

Importance of Innovation

"If we try to solve today's problems with yesterday's solutions we will seek the future by looking through yesterday's eyes"

(Jack Collis, 2007)