

# Access in Transport Appraisal

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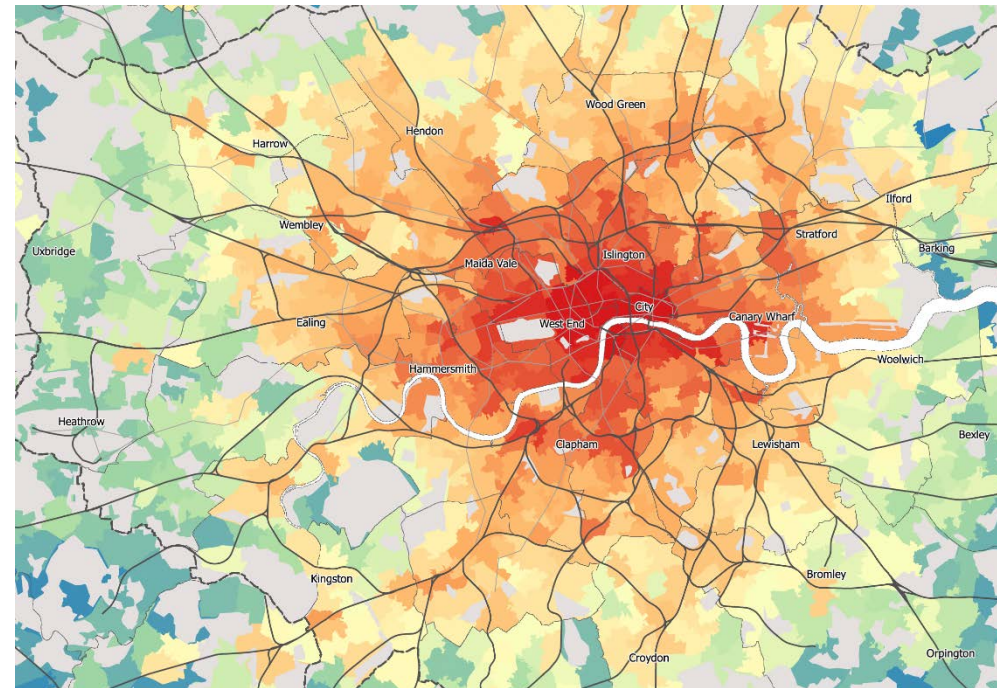


# Access as a organising framework

- Transport provides access
- People and business engage in spatially and temporally distributed activities
- Access as a concept to link transport and land use

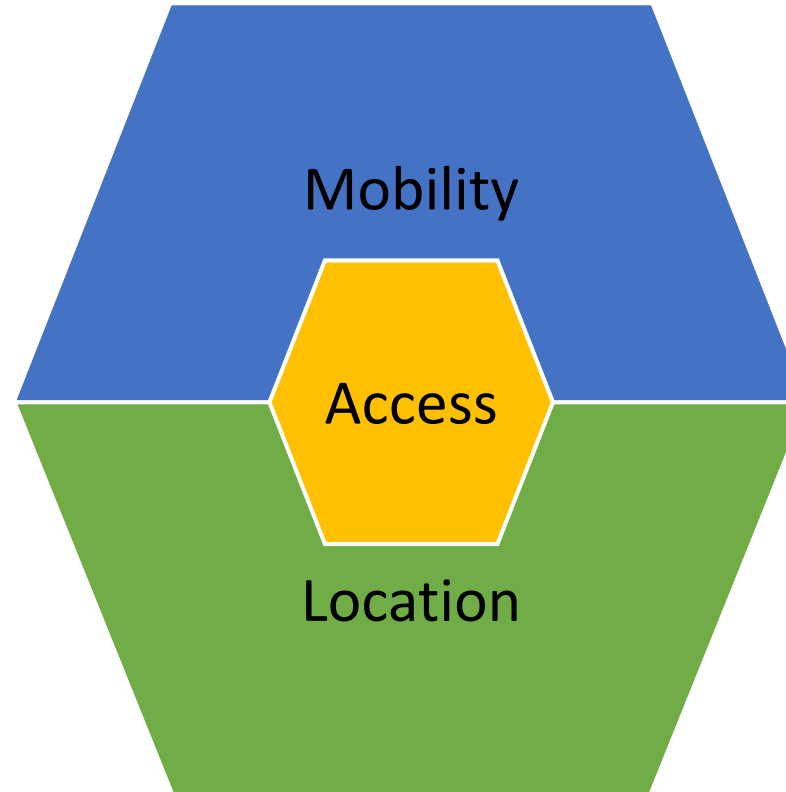
Graphic from [citygeographics.org](http://citygeographics.org)

Access to jobs, 1 hour public transport



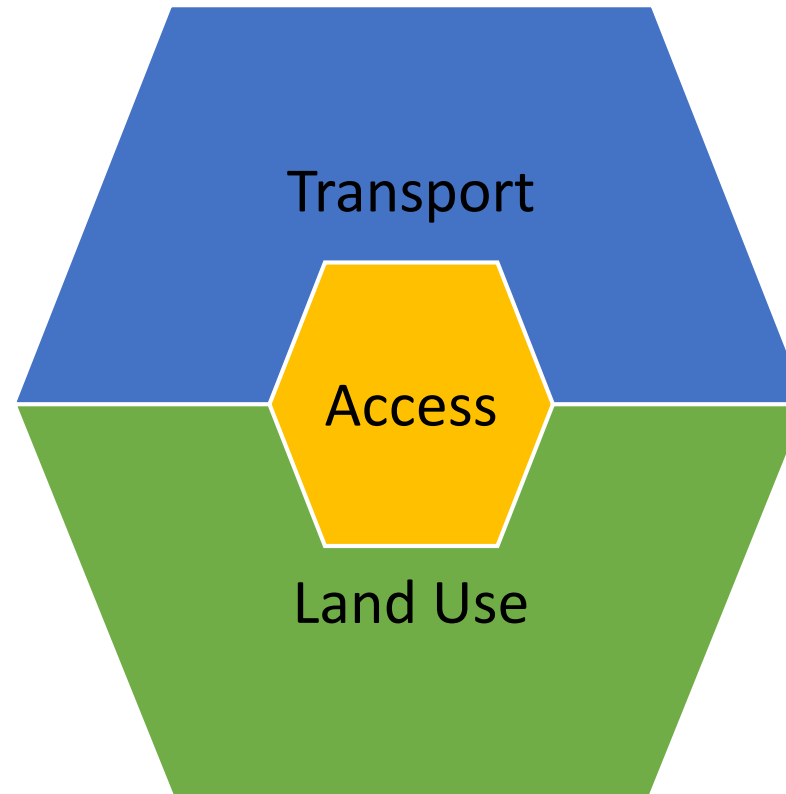
# Access defined

- Access is the ease of reaching opportunities and activities
- Mobility Improvement: Increase in area that can be reached within given time and money
- Accessibility Improvement: Increase in the value of destinations that can be reached within given time and money

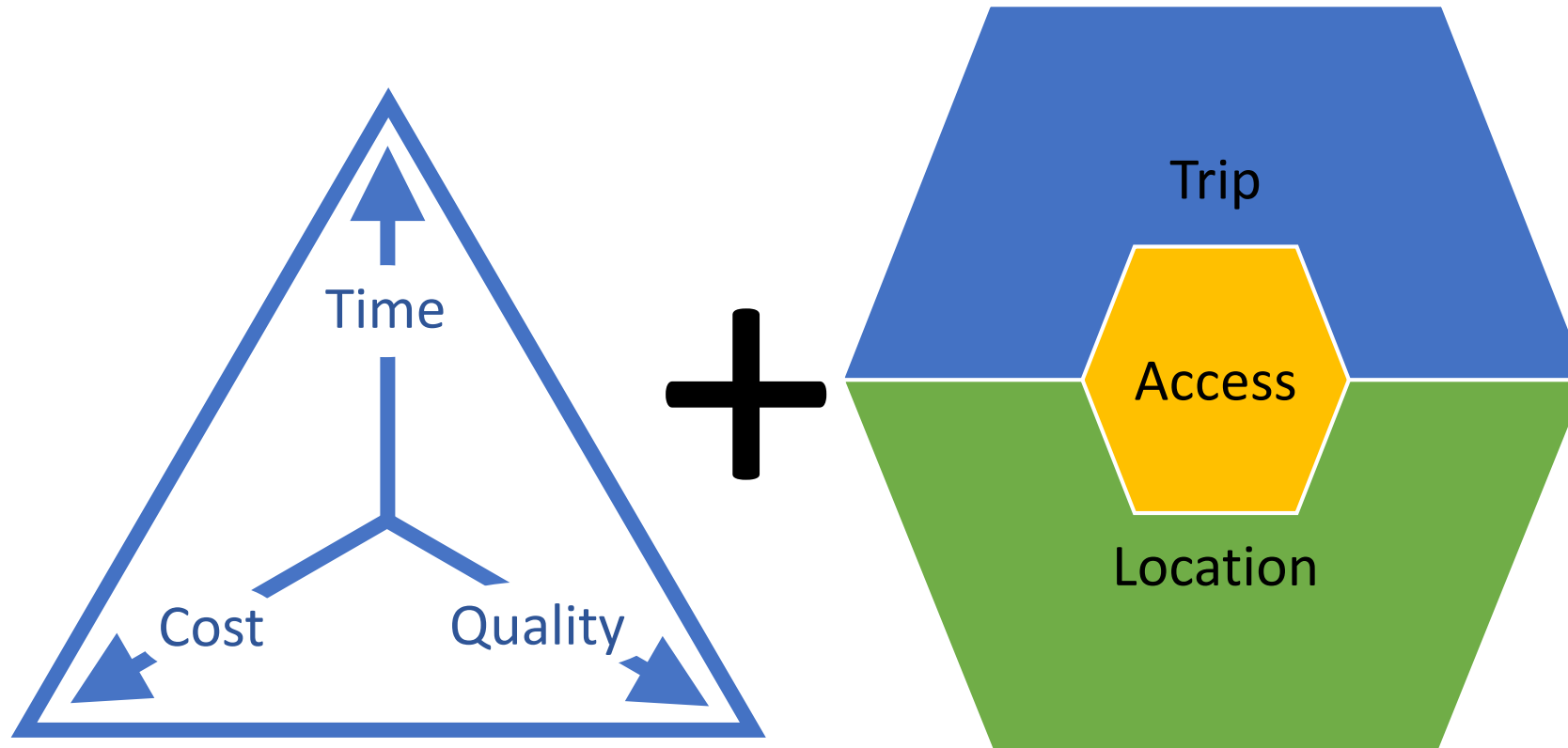


# Access defined

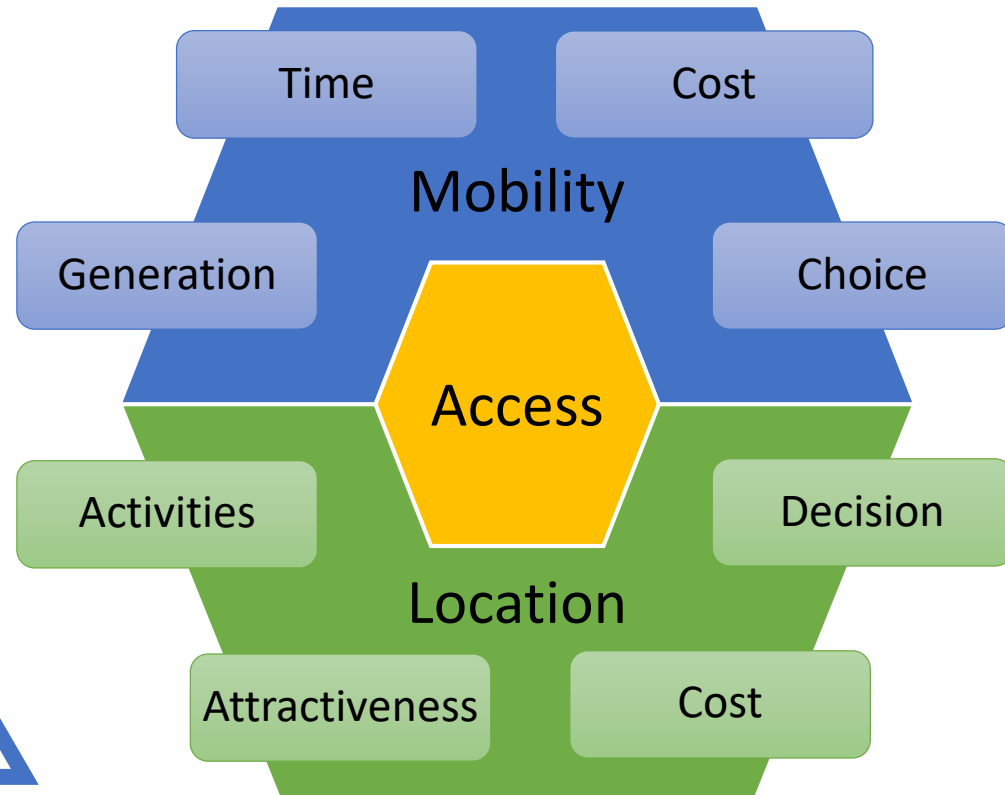
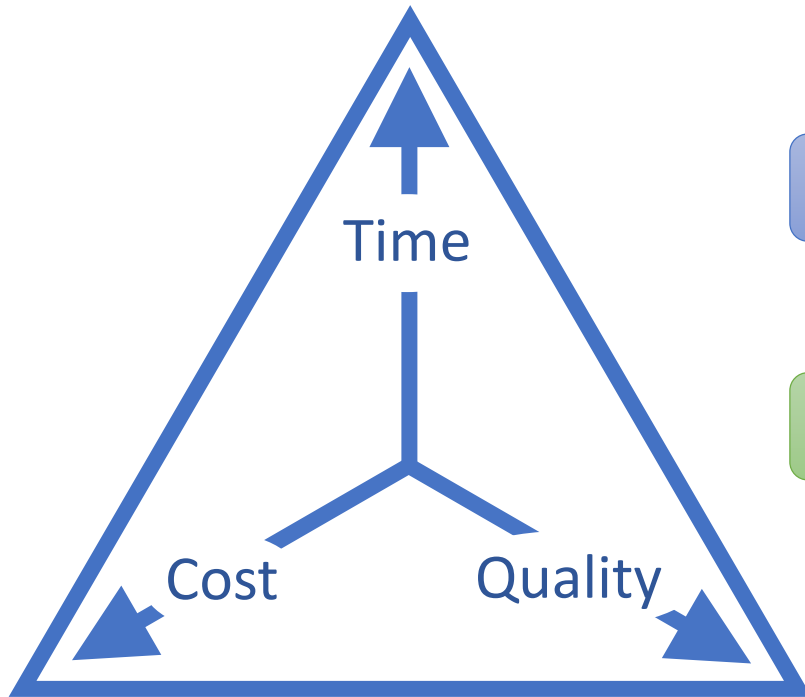
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# Access properties

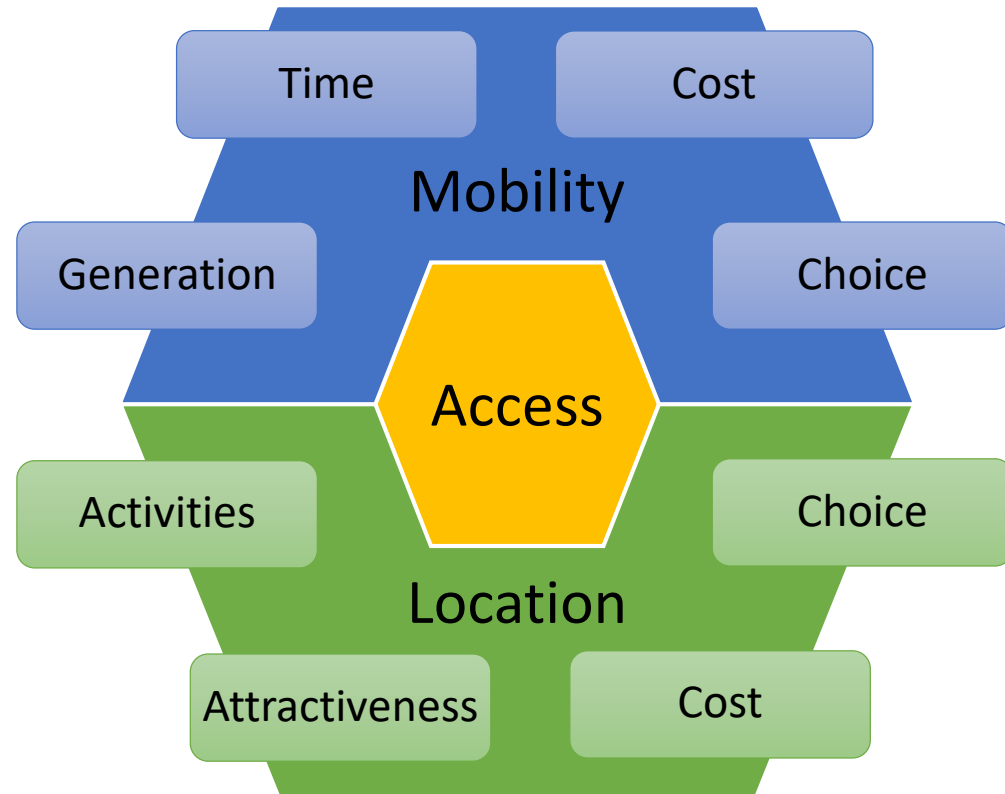


# Access properties



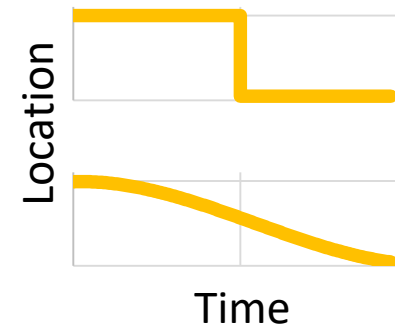
# Access properties

- Access is activity specific
- Integrates over multiple properties
- Ease of interaction
  
- What is good?
  - Sufficient
  - More



# The universe of access measurement

- Distance to nearest location
  - Basic proximity measure
- Cumulative opportunities
  - e.g. # jobs within 1 hour public transport travel time
- Gravity model
  - Attractiveness (probability of choice) of a location
- Expected maximum utility
  - Individual choice and location attractiveness





# Current limitations in transport appraisal

- No complete coverage across components
  - transport, land use, temporal and individual
- Compatibility with Cost Benefit Analysis
- Equity and distributive impacts

# Appraisal from different perspectives

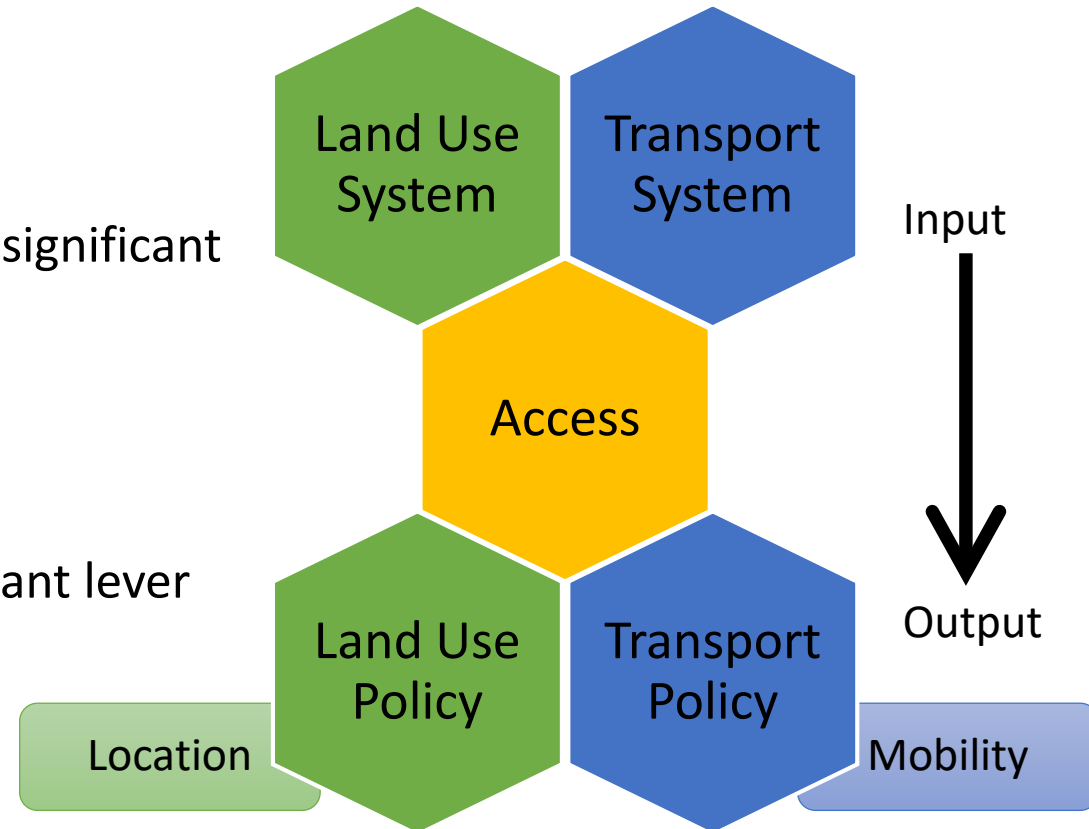
	Transport component	Land use component	Temporal component	Individual component
Infrastructure perspective	Engineering and planning			
Location perspective		Urban planning and geography		
Person perspective			Time geography	
Utility perspective	Economic geography and spatial economics			

# Appraisal from different perspectives

	Transport component	Land use component	Temporal component	Individual component	Methodologies
Infrastructure perspective	Engineering and planning				Time savings and rule of a half
Location perspective		Urban planning and geography			Gravity and spatial interaction models
Person perspective			Time geography		Hybrid utility-activity models
Utility perspective	Economic geography and spatial economics				Land Use and Transport Integration models

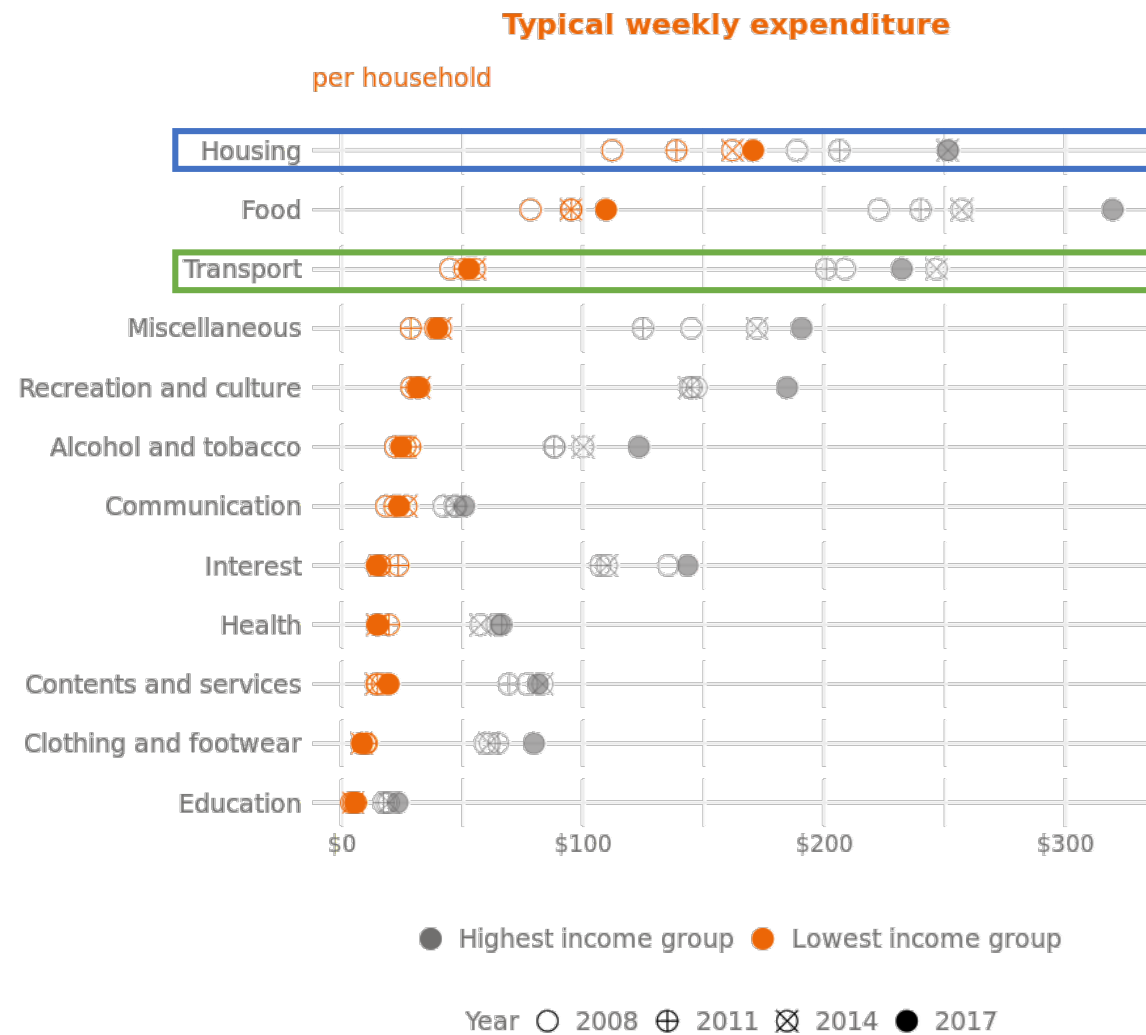
# CBA - Land use assumptions

- Fixed land use
- Land use change can have significant effects on access benefits
- Land use policy is an important lever



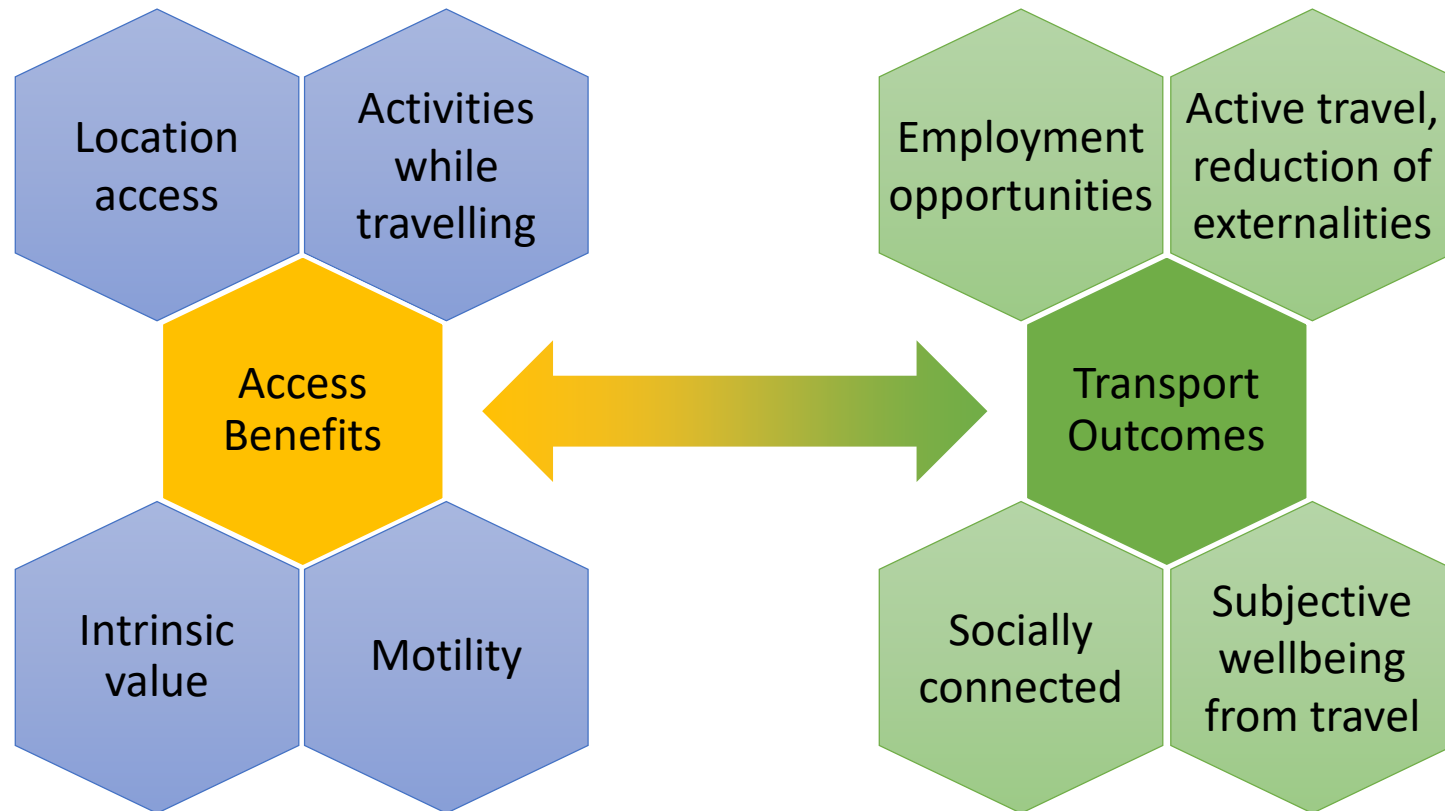
# Access costs

- Costs experienced unevenly
- Location costs and transport costs



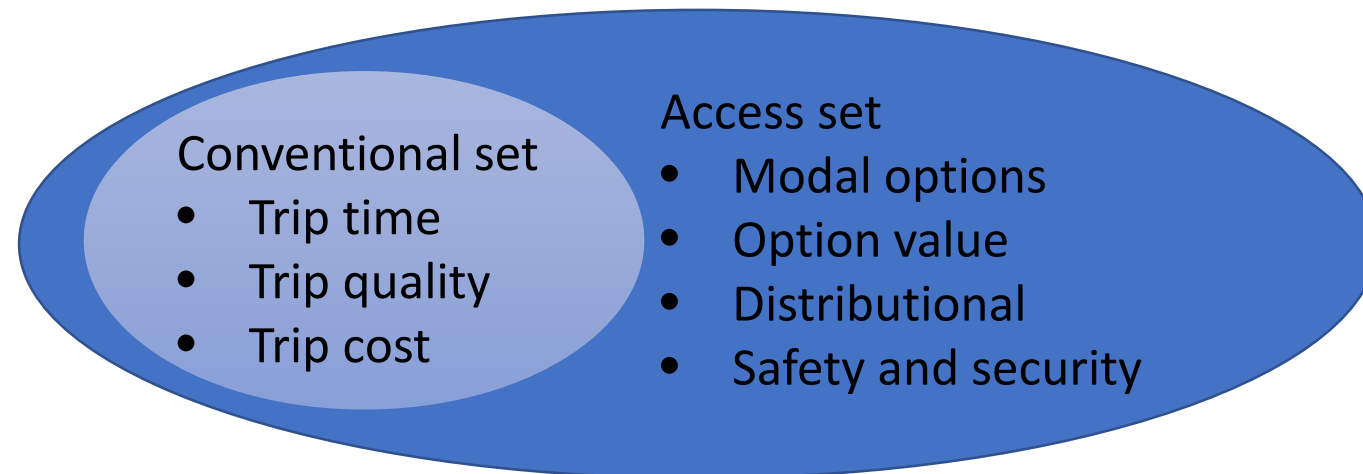
Source: Stats NZ

# Potential future appraisal



# Option value

- Option value where people might value transport options over and above the use value
- Option valued used in public transport
- → could be applied to access



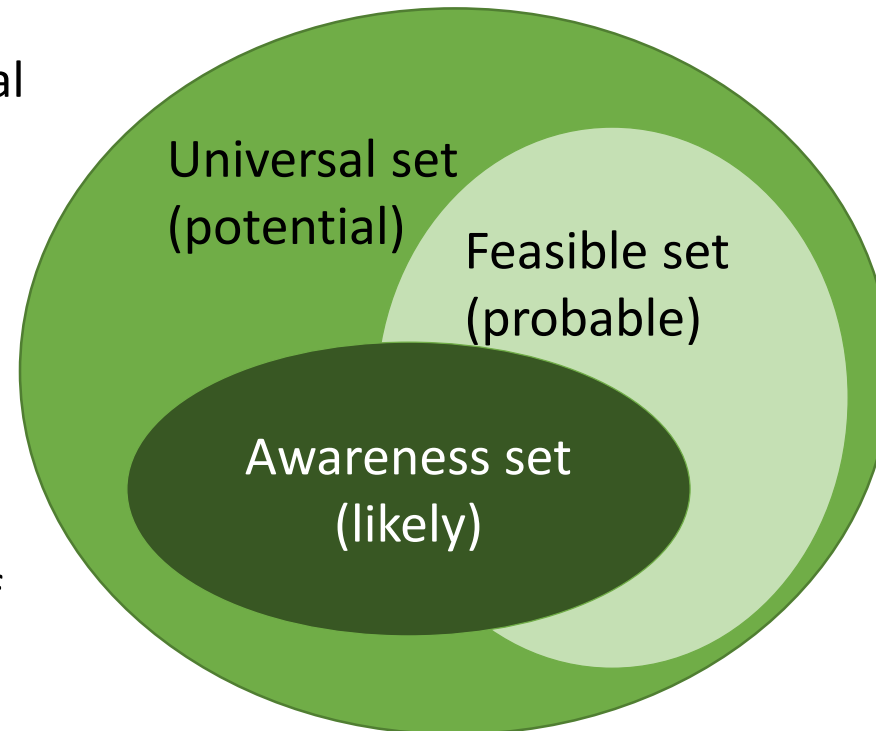
# Enhancements required

- Subjective access
  - Satisfaction when systems facilitate access to locations and activities of choice
- Modal access
  - Ability to reach key destinations through available modes
  - → motorised options, active travel, land-use mix
- Distributional access
  - Access as a right
  - → distributional impacts on economic, social outcomes (social exclusion, low-income, mobility impaired)



# Motility

- Wellbeing from being mobile in social and geographic space
  - defined by access (modes, activities), competences (skills, abilities) and use
- Access dimension of motility
  - travel satisfaction, availability of more options
- Difficulties in measurement and valuation



# Public Transport Access Level

- Developed by Transport for London
- Measure access to locations
  - walking distance
  - waiting times
  - services frequency
  - major interchanges
- Key factor for planning housing density



# Lessons learnt

- Travel time is a better proxy than distance
  - Implicitly includes modal differences
- Access should be population weighted
  - Think origin rather than destination
  - Better consideration of distributional impacts
- Transport policy is not a substitute for urban policy
  - The relationship is two way

# International Transport Forum roundtables

2016

- [The economic benefits of improved accessibility to transport systems](#)

2017

- [Improving transport planning and investment through the use of accessibility indices](#)

2019

- [Accessibility and Transport Appraisal](#)