An Unlikely Dual Transportation Ecosystem:

insights from a new town in Georgia, USA: Peachtree City

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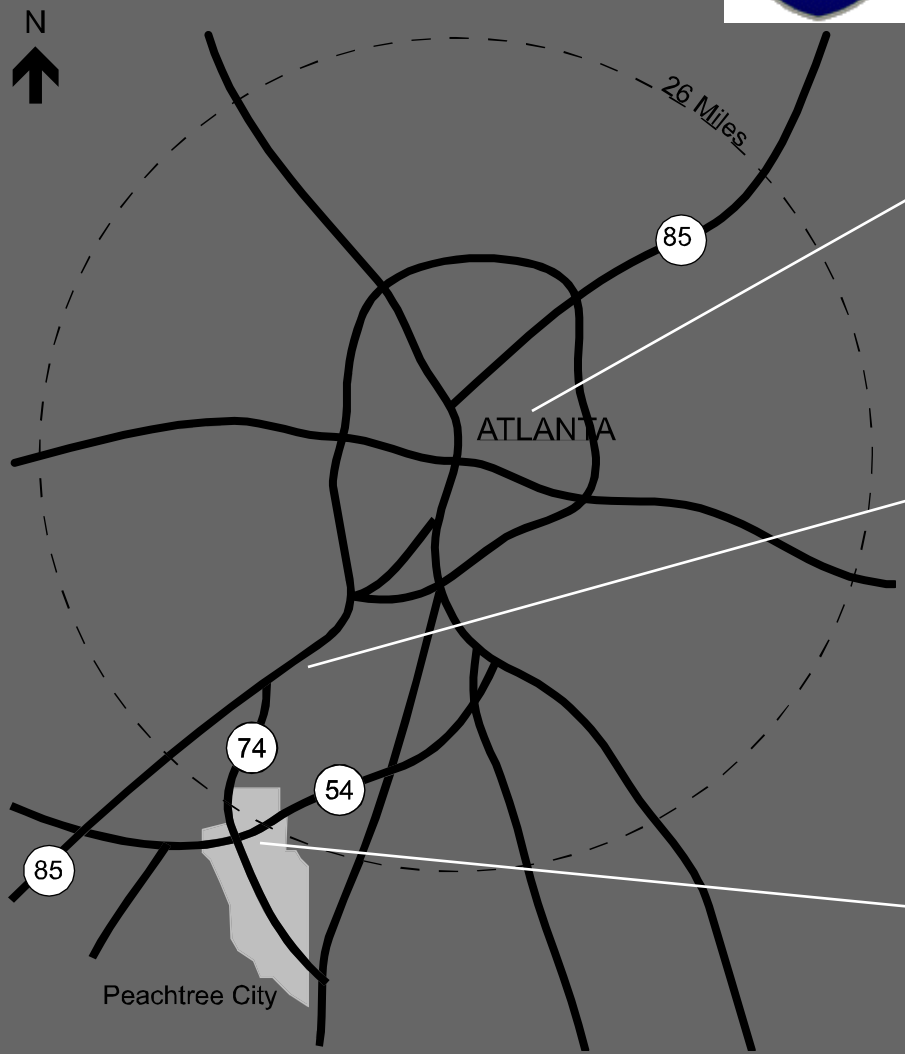
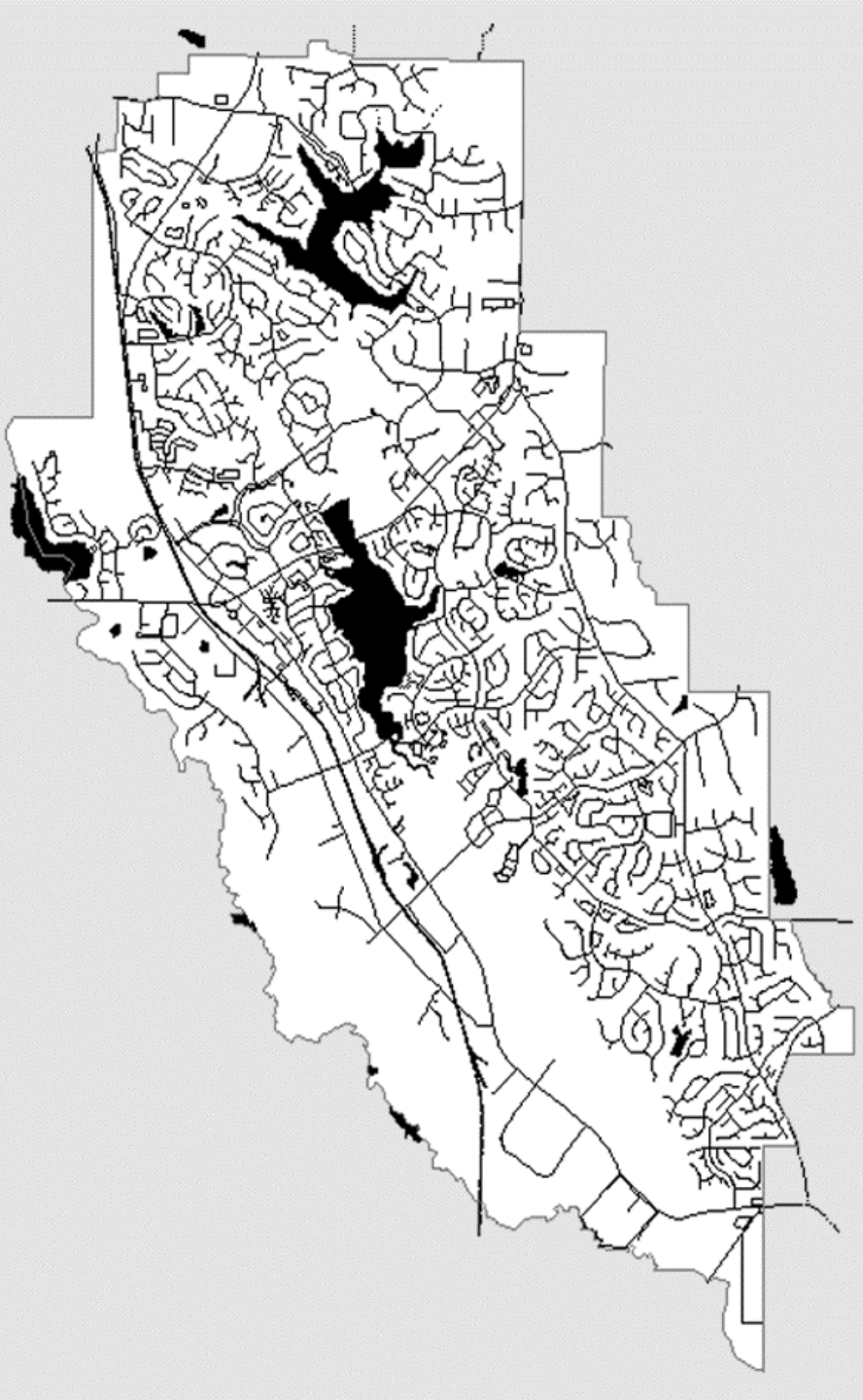
Location

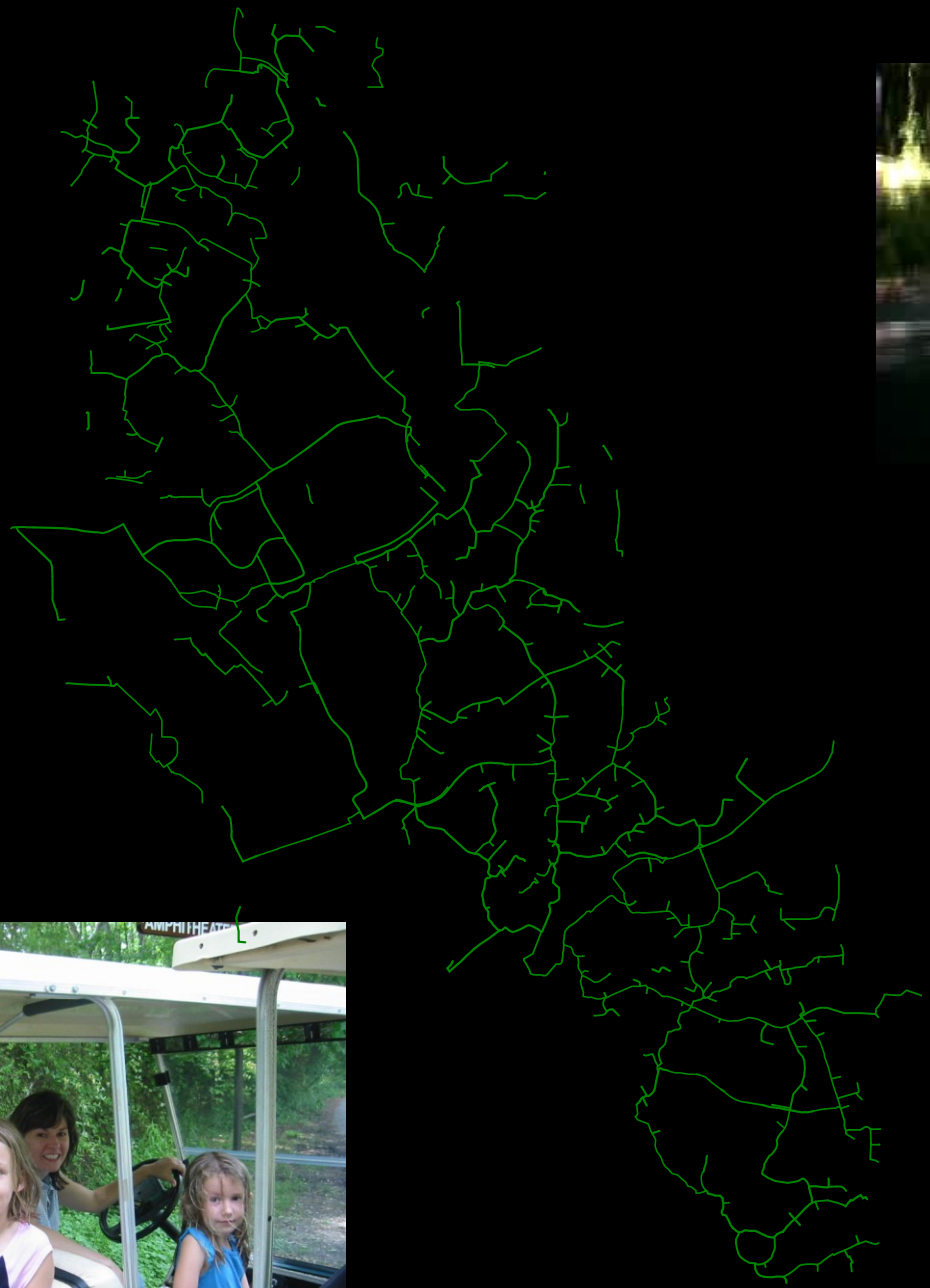

INTERSTATE
GEORGIA
85


N
26 Miles
85
ATLANTA
74
54
85
Peachtree City

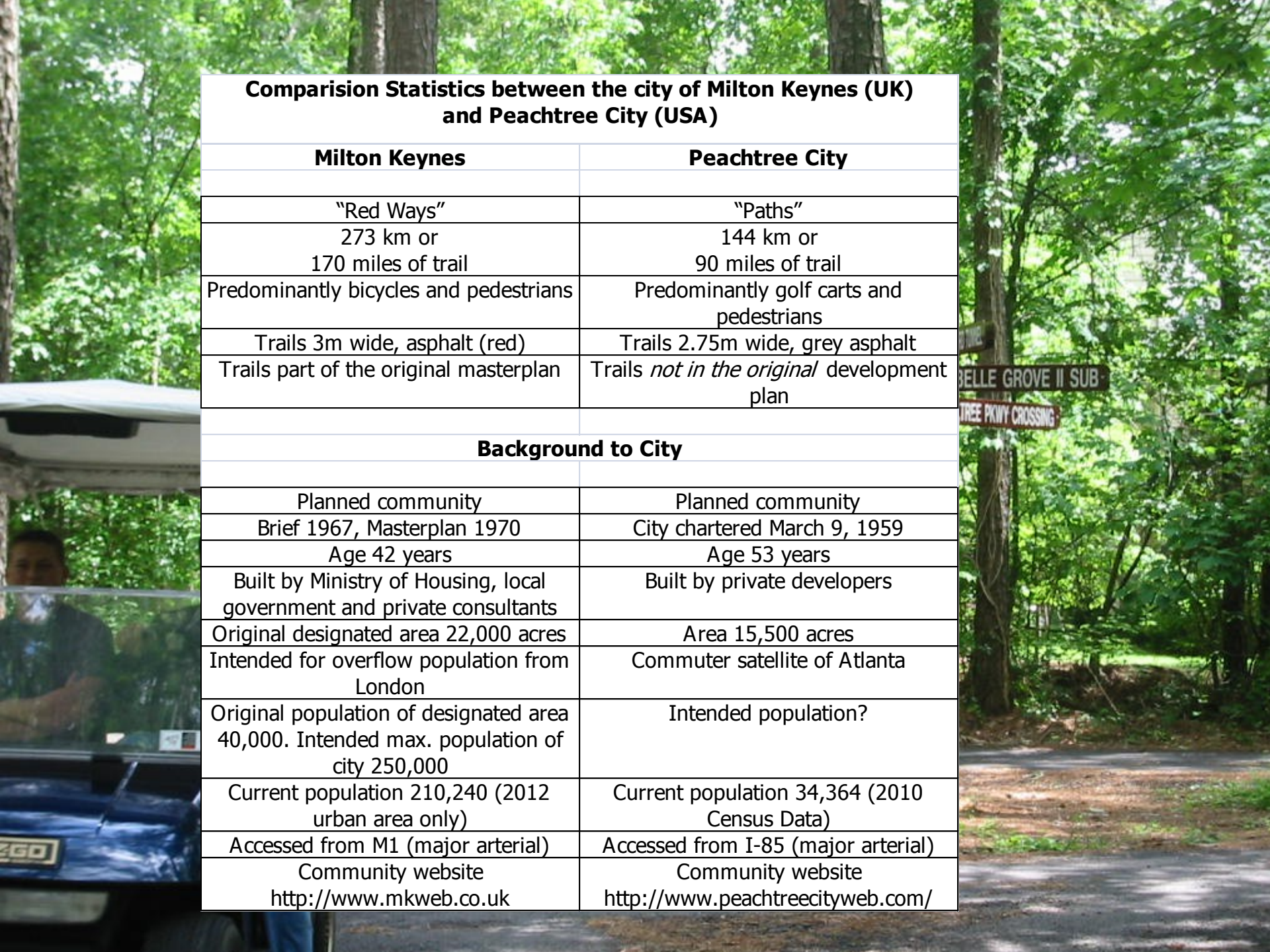

EAST
Macon
NORTH SOUTH
Birmingham
Montgomery



Peachtree City




CART PATH
NO AUTOS OR MOTOR BIKES



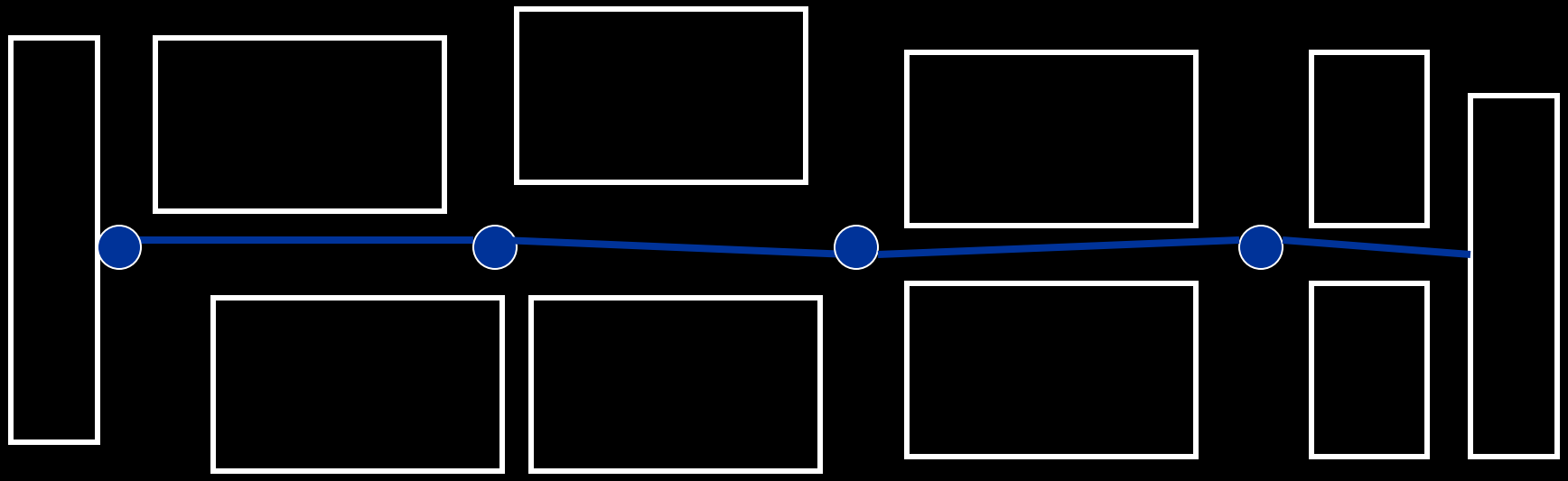
Comparision Statistics between the city of Milton Keynes (UK) and Peachtree City (USA)

Milton Keynes	Peachtree City
"Red Ways"	"Paths"
273 km or 170 miles of trail	144 km or 90 miles of trail
Predominantly bicycles and pedestrians	Predominantly golf carts and pedestrians
Trails 3m wide, asphalt (red)	Trails 2.75m wide, grey asphalt
Trails part of the original masterplan	Trails *not in the original* development plan
Background to City	
Planned community	Planned community
Brief 1967, Masterplan 1970	City chartered March 9, 1959
Age 42 years	Age 53 years
Built by Ministry of Housing, local government and private consultants	Built by private developers
Original designated area 22,000 acres	Area 15,500 acres
Intended for overflow population from London	Commuter satellite of Atlanta
Original population of designated area 40,000. Intended max. population of city 250,000	Intended population?
Current population 210,240 (2012 urban area only)	Current population 34,364 (2010 Census Data)
Accessed from M1 (major arterial)	Accessed from I-85 (major arterial)
Community website http://www.mkweb.co.uk	Community website http://www.peachtreecityweb.com/

Tunnels

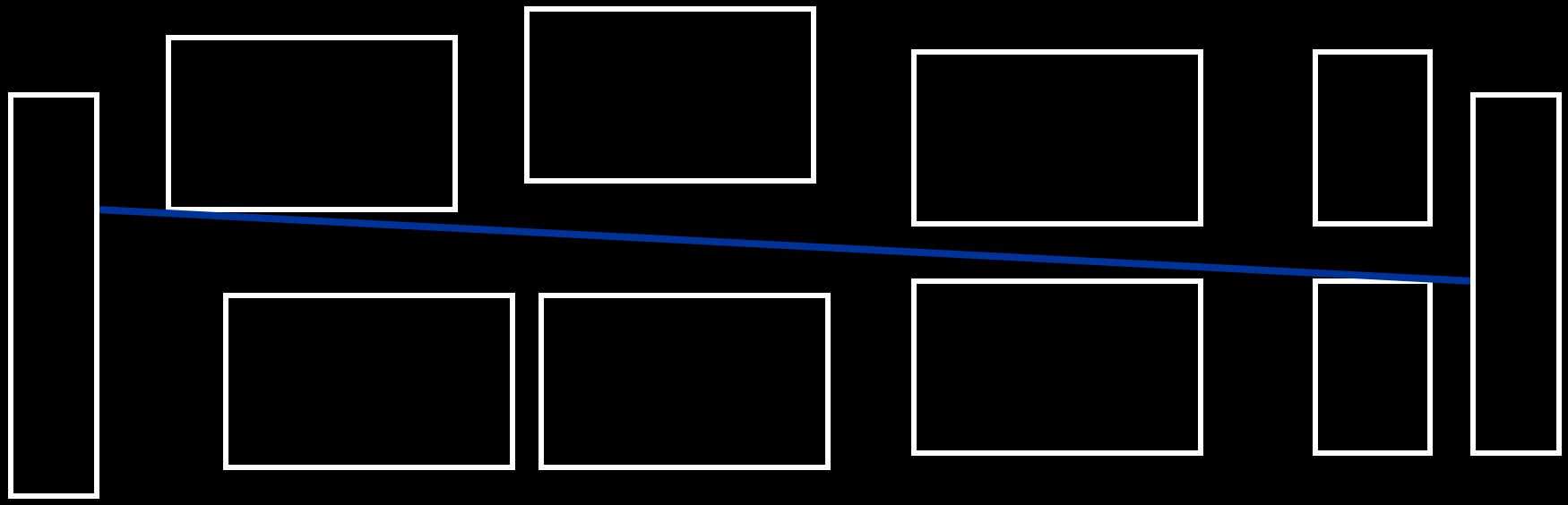
Bridges

Road Center line



Notes on representation. Traditional GIS looks at road center lines.

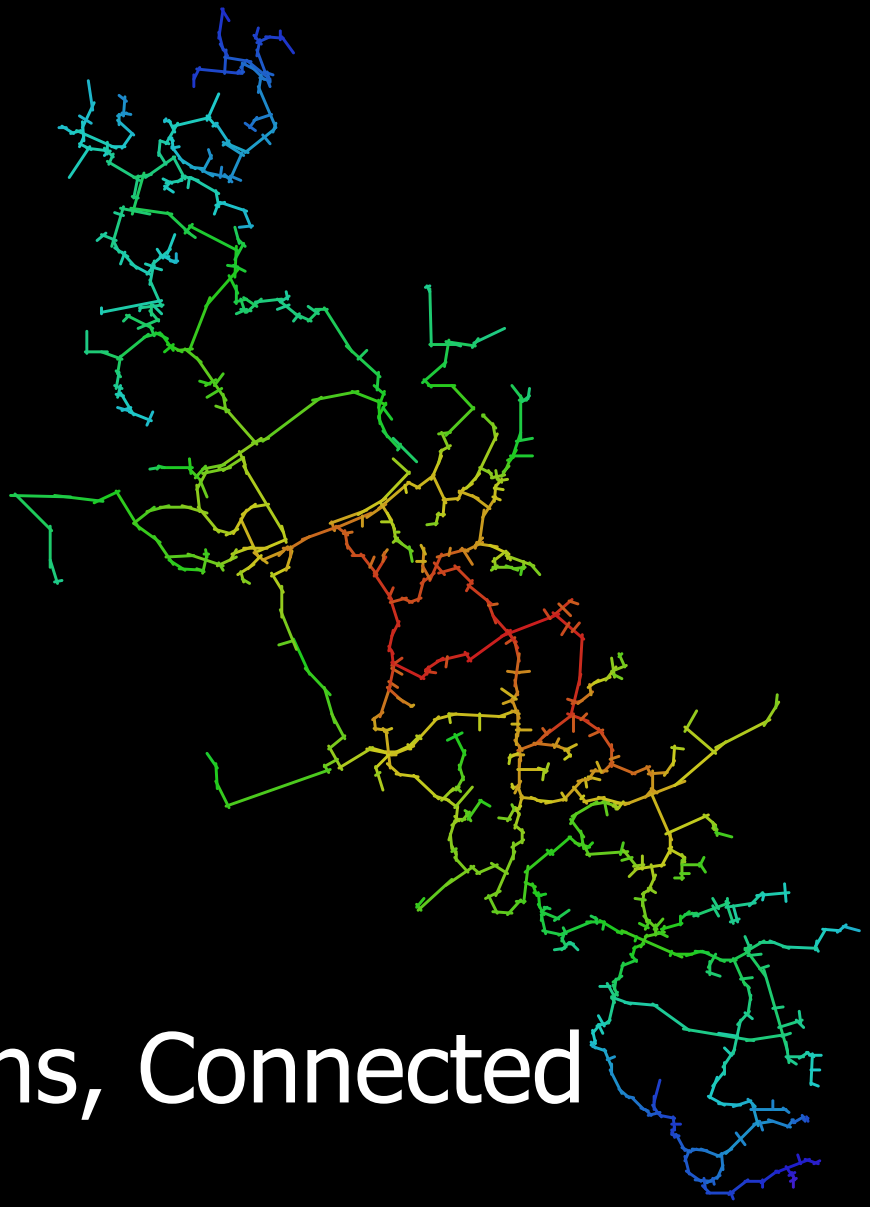
Axial Line



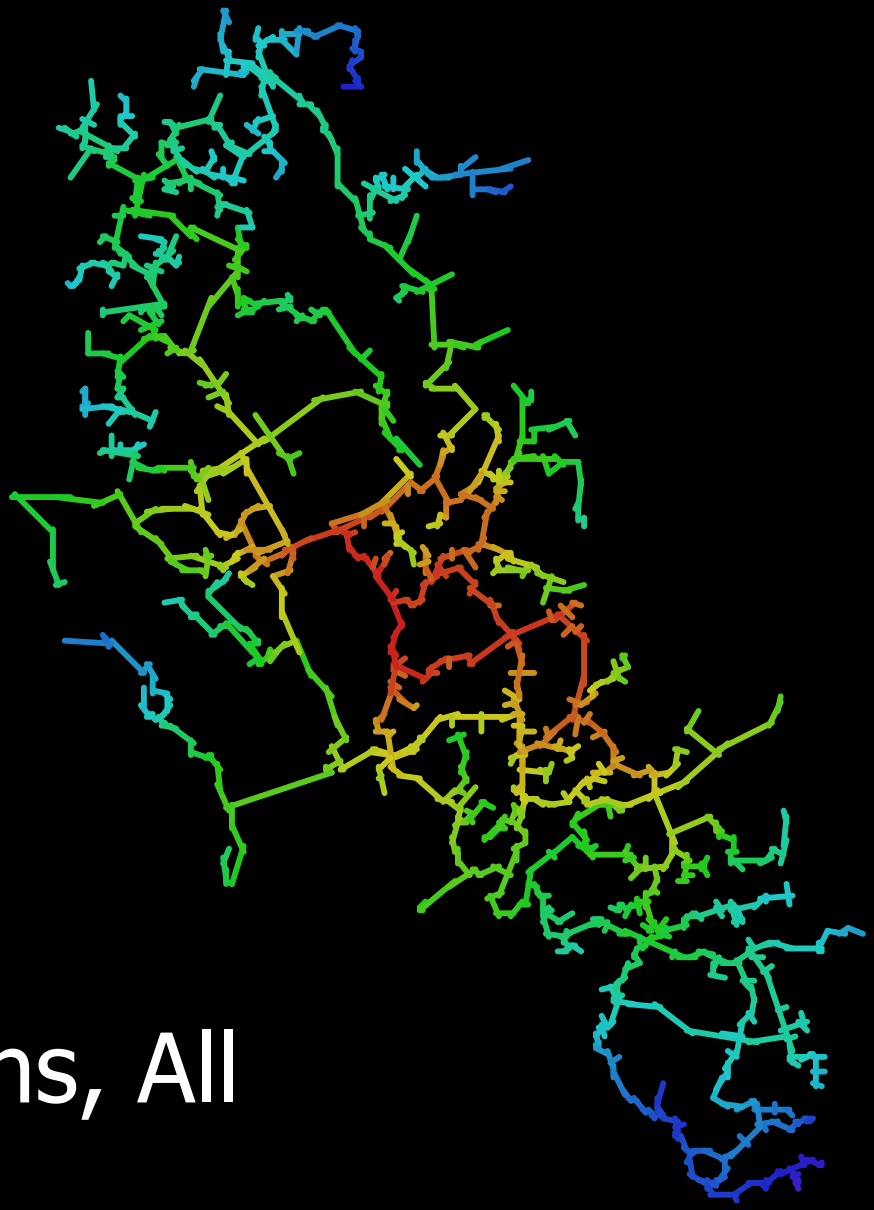
Axial line is defined by the space between buildings. The entire line becomes a node in a graph (network) representation. Reflects the linearity of cities and building development. For space syntax ‘space’ is the material of the urban machine. The logical common unit of urban analysis.

Roads Only

Roads Only

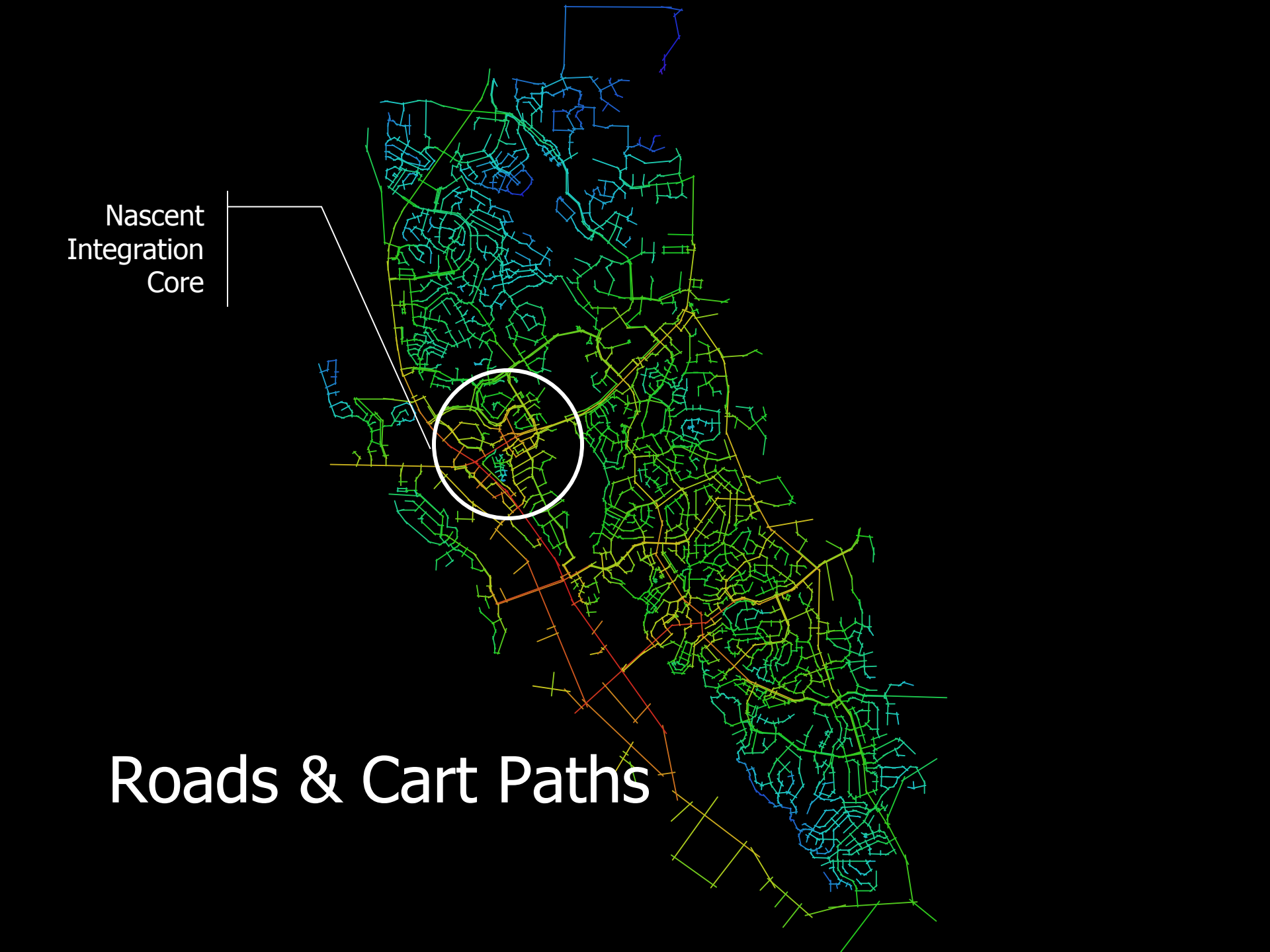


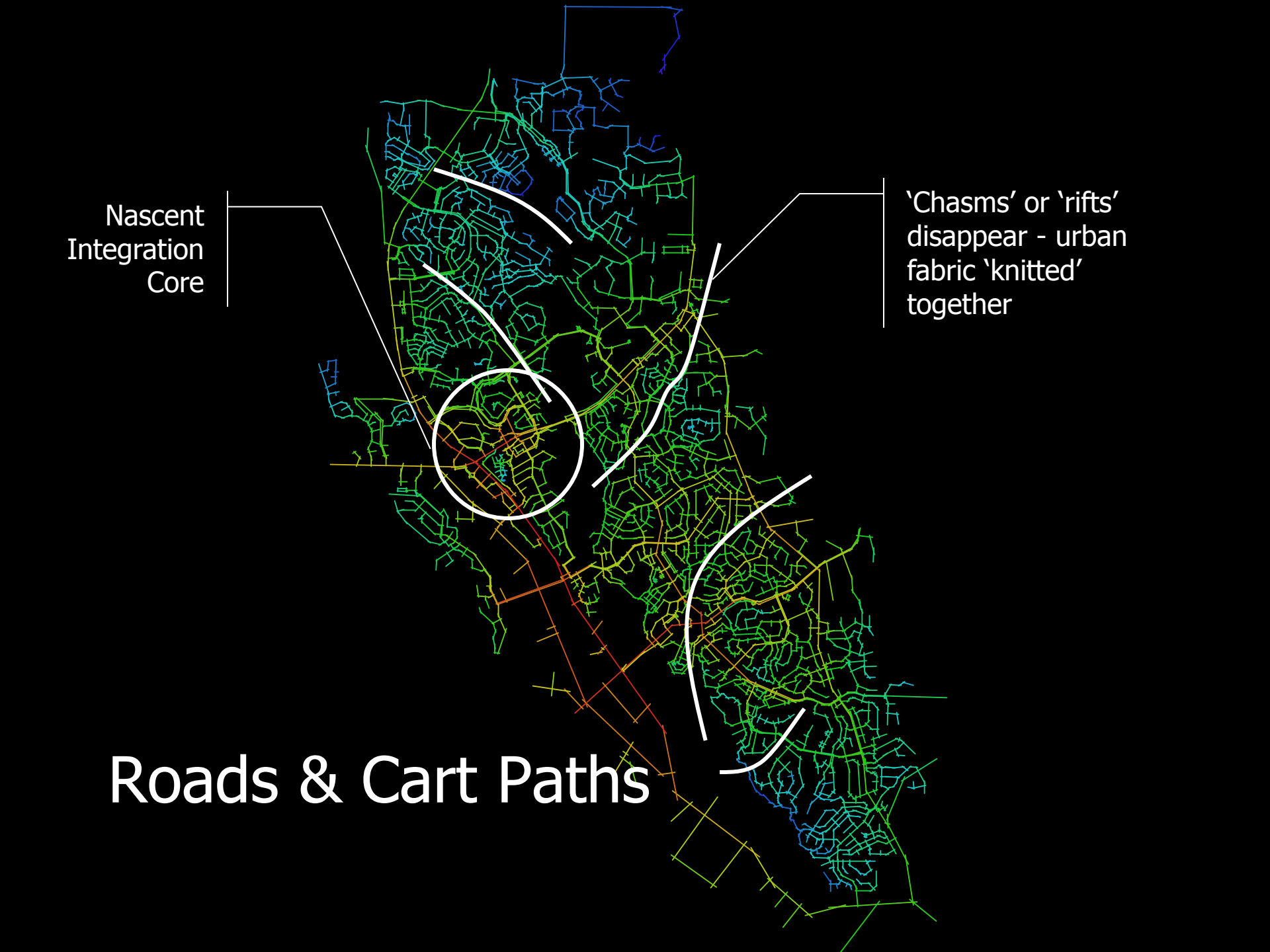
Cart Paths, Connected



Cart Paths, All

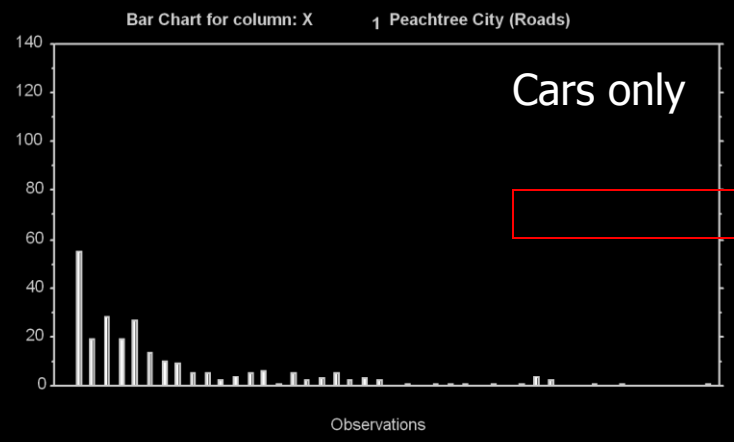
Roads & Cart Paths

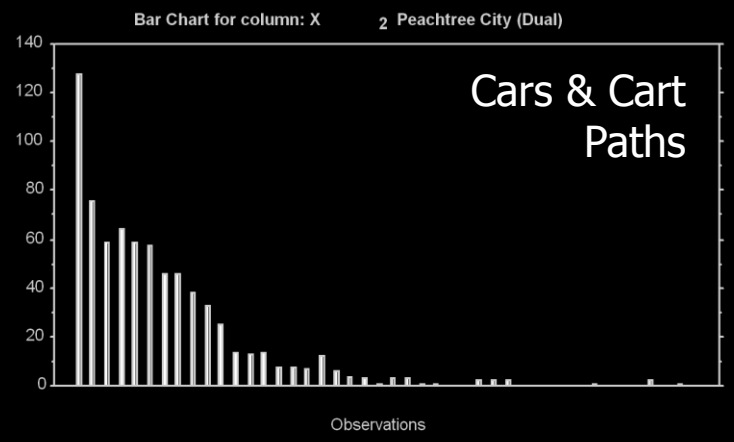

Nascent
Integration
Core
Roads & Cart Paths


Nascent Integration Core
'Chasms' or 'rifts' disappear - urban fabric 'knitted' together
Roads & Cart Paths

The Effect of the Dual Transportation System

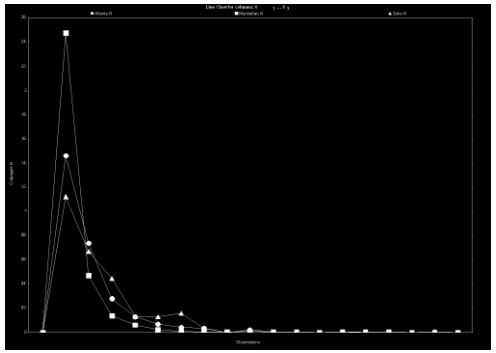
	Road System Only	Roads & Cart Paths Combined	% Change
Mean axial line connectivity	2.41	2.70	112 %
Mean axial line integration	0.43	0.48	112 %
Number of dead ends	431	337	78 %
Number of circuits	460	1160	252 %
Mean length of circuits	11.56	9.79	85 %
Axial ringiness	0.102	0.176	172 %



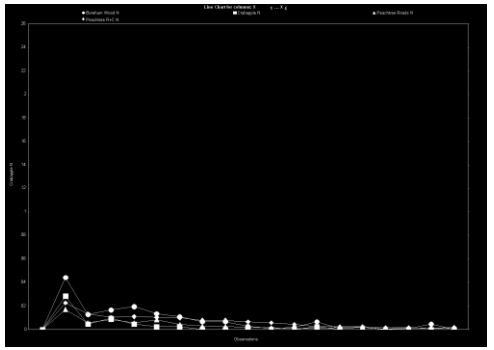


The Spectrum Between City and Suburbia

urban



suburban



Social Benefits

Dedicated Golf Cart Parking at Kedron Shopping Center

Social Benefits

- Intrinsically more ‘sociable’ vehicle; combination of openness, quietness and lower traveling speeds.
- The non-exclusion of the young, elderly or less physically able (unable to hold a drivers license)
  - Children can drive themselves (and siblings) to school from the age of 15
  - Older citizens can maintain a degree of independence into their later years

Social Benefits

Golf Cart Parking at MacIntosh High School


Economic Impact

Economic Impact

- Removes the necessity of dual car ownership (the average American spends 1/5 their household income on each car)
- The ongoing running and maintenance of an electric cart is considerably less than a car
- Golf carts provide a private transportation alternative which is financially viable for low-income communities

Environmental Benefits

Sunset over Lake Peachtree

Environmental Benefits

- Reduction in congestion
  - A parallel, alternative system used for short-distance trips creates a comparable drop in use of the primary, road system (particularly during the 'school run').
- Reduction in pollution & energy consumption
  - Golf carts are zero-emission vehicles.
  - Journeys of up to 5km in length are 50% more polluting than longer journeys.
  - Energy consumption is less for electric cars than for petrol cars, particularly if the electricity is purchased from renewable sources.


Reproducibility

Reproducibility

- Is the success of Peachtree City is reproducible elsewhere?
- Can the spatial, morphological findings of this paper help provide guidelines for how an alternative system, such as the cart path system, could be retro-fitted elsewhere?
- Can Peachtree City be viewed as a '*prototopia*' - a blueprint for tackling the problem of suburban sprawl?

Conclusions

- This study suggests that Peachtree City could be used as a blue-print of a ‘protopia’ by creating a principle by which American suburbia could be transformed into sustainable communities and yet do so in a manner which would be distinctly American in character and hence palatable to its citizens unlike many current public-transport focused proposals.