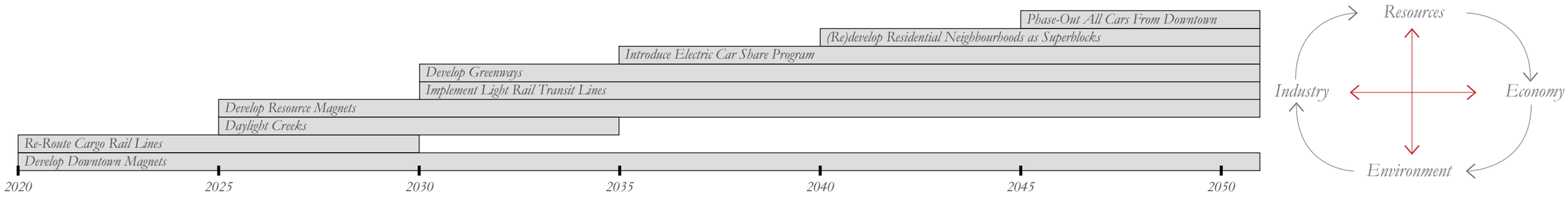
A Collective City

Sudbury 2050



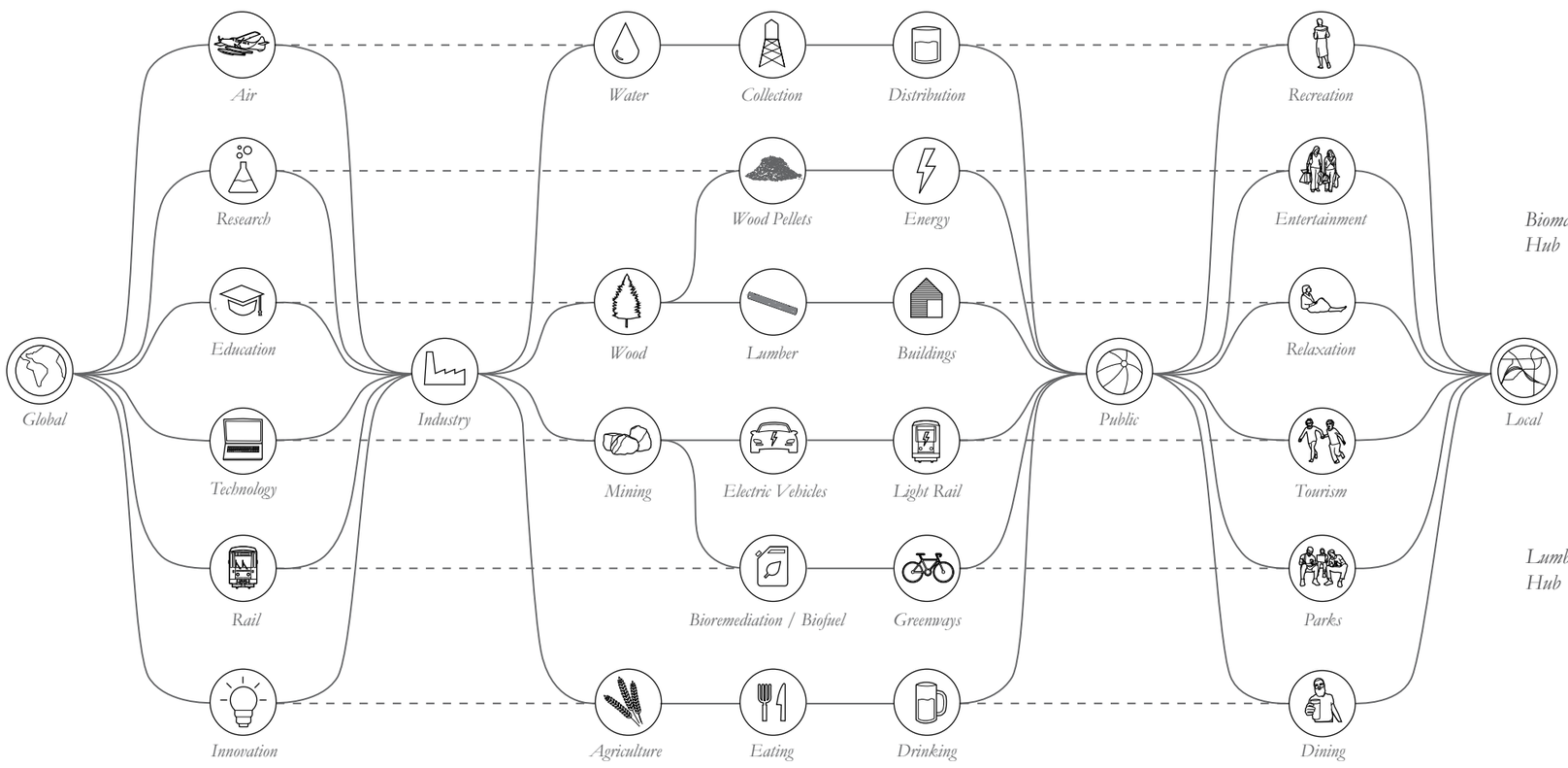
Canada has a long history as a resource-rich economy. The need for carbon-based resources has shaped migration patterns through territories of extraction, defined infrastructural networks, and impacted human life through manufacturing processes. As peak oil is reached and non-renewable resources decline, we can imagine a transition toward a renewable resource economy and an increase in renewable resource industries. This proposal forecasts the future generative potential of resources shaping the past, present, and future of the Sudbury economy, and how they can continue to redefine the image of the city. The Collective City strengthens the local—global relationship through closed-loop systems that integrate new flows of people and goods, shaping the exchanges that take place from the downtown core to the periphery, the human scale to the territory. Industry, resources, the economy, and the environment can be synergized to create a whole that's greater than the sum of its parts. This proposal highlights the need to consider cycles and transformations not only through physical manifestations, but through networks and systems that define a new urbanism. Post-war carbon economies can transition toward renewable resource economies as a catalyst for diversification and growth with a collective goal in mind: physical and mental sustainability for both people and the built environment.

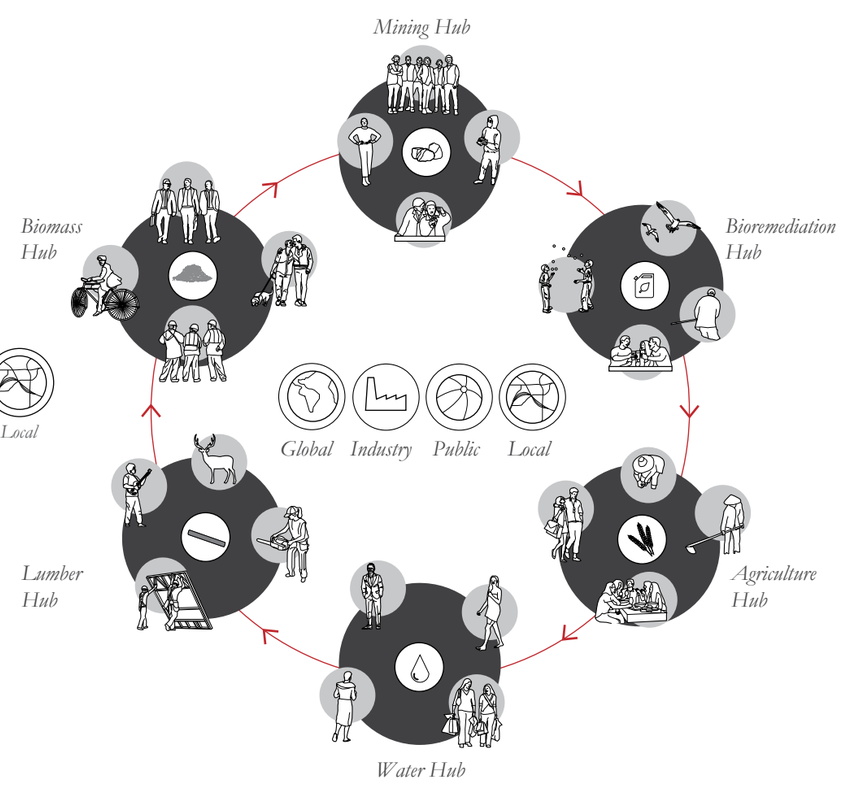
The city can be treated as an organic system characterized by networks that connect interrelated magnets. Magnets can be defined as resource community hubs that fuse together local industry, global innovation, and public interaction. They are spaces defined by industry and community, synthesizing various architectural typologies as hybrids rather than segregating them through strict zoning regulations. Magnets can be subcategorized as majors and minors. Majors are larger resource hubs that serve as nodes, providing a multitude of amenities including production, recreation, and dwelling. These are hubs that produce goods that extend from the local environment to the global economy. Minors are off chutes of majors, supporting hubs, or independent anchors specific to local neighbourhoods. They are supported by a network of 'commoning' across the city. Commons are positioned along axes, engaging the public as catalysts for bringing together diverse groups of people. They are collective spaces the neighbourhood community can develop to best serve their needs, desires, and collective skill sets. Commons can be open park spaces, agricultural land, small business, or even arts and crafts studios. They give ownership to the local community, allowing them to productively contribute to urban life and engage in the design process. These can become points of destination that act as generators for cross-pollination and collaborative joint ventures, supported by the implementation of residential superblocks. Superblocks are equipped with a variety of housing scales and semi-private community green space. They can be adapted to suit existing neighbourhoods by closing off local streets and blurring public—private boundaries. The intention of the superblock is to develop micro-communities geared toward shared ownership rather than individualism.

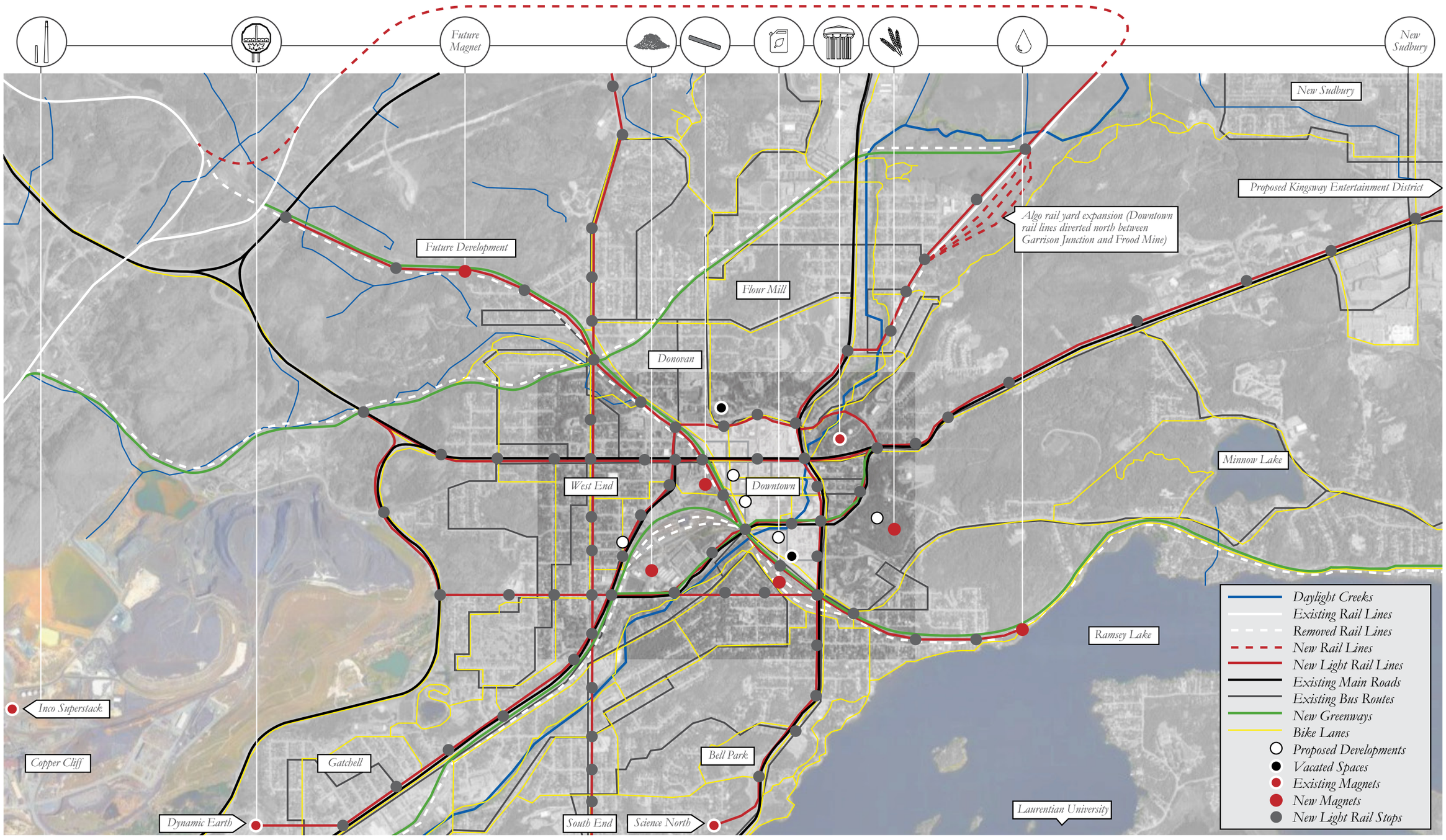
The new primary axes for Sudbury's networks are shaped by existing major transportation routes. Major streets are transformed into light rail transit lines and greenways to reduce, and eventually eliminate, carbon-based infrastructure. Junction Creek, among others, can be renewed through daylighting, celebrated as a prevailing feature of the city, and used as a primary axis for ecological development and public gardening. The existing transport rail line is converted to greenways, light rail transit lines, and a single rail line used for localized distribution of goods. This is made possible by diverting the downtown rail lines north between Garrison Junction and Frood Mine and expanding + relocating the rail lands to Algo Station. This allows local goods to be shipped in and out from Algo Station and, easily distributed throughout the city using a single low-frequency local rail line. The old rail lands, now reinvigorated as Rail Yard Park, is the central point of the city. It is renewed with green space and public amenities while decommissioned rail cars are left on the tracks, transformed into retail space for markets. Local artisans display and sell their goods, generated from local commons, at Rail Yard Park markets as it becomes a perfect destination for respite and a hot spot for hosting events, gatherings, and festivals.

2050 Sudbury can grow through a system of linear development as the main axes for intervention. The greenways and creeks define flows of people, nature, and goods. They become arteries with centrifugal development of magnets and micro-communities. Development along these networks is prioritized, promoting physical activity and environmental engagement. This methodology supports a healthy, active public that engages the lifestyle of the people with the ideology of a sustainable city through walking trails, bike lanes, and greenways. The northwest zone of the greater Sudbury area has been identified for future development to become an end terminus magnet as a counterpoint to Ramsey Lake, New Sudbury, and Copper Cliff. This establishes four corners which shape the major boundaries of the city. Magnets can grow and expand with new greenways, light rail lines, and linear parks as the population increases and boundaries continue to be redefined well past 2050. The city becomes a place for renewable resource development, fostering new technology, research, and innovation. The existing downtown can transition parking lots to parks or places of respite. Rooftop parking can be converted to green roof parks and the rest of the downtown architecture can develop organically through proposed clustered developments and destination points such as Project Now's new vision for the community arena, the Junction, Place Des Arts, the Brewer Lofts, and the McEwan School of Architecture. The downtown can redevelop in phases as older buildings are replaced with new magnets. The residential neighbourhoods can eventually be redeveloped as superblocks that contain self-sufficient mixed-use housing typologies.

Resource hubs can be hybridized to take advantage of the potential of unexpected synergies between differing typologies. A bioremediation facility can be developed to supply biofuel for local public transportation. The nickel mined nearby can be used for new batteries in a hybrid community car share program. An advanced wood processing facility can take advantage of selective wood harvesting paired with a maker space as an off chute of the school of architecture, acting as a place with common interests and reconciliation. The resulting wood pellets can be converted to biomass that supplies a local district heating system which is coupled with a theatre and performing arts centre, displaying the industrial processes to the public. The iconic water tower and Reservoir Hill can be developed as water magnets for water supply, distribution, and public engagement through community bath houses and recreation. Geothermal district heating systems can integrate into public commons for localized district heating for each community. The downtown becomes car free, bifurcated by the light rail transit lines that are powered by local industry, redefining an expanded downtown boundary with a walkable core. The Collective City weaves nature into the city, removing the carbon emissions and noise pollution that currently define downtown Sudbury. This proposal suggests designing systems of networks and magnets as strategies that extend beyond the downtown is crucial for the development of Sudbury. We can work towards a collective community shaped by emerging renewable resource industries to promote and implement a sustainable lifestyle, and in turn a Collective City: Sudbury 2050.





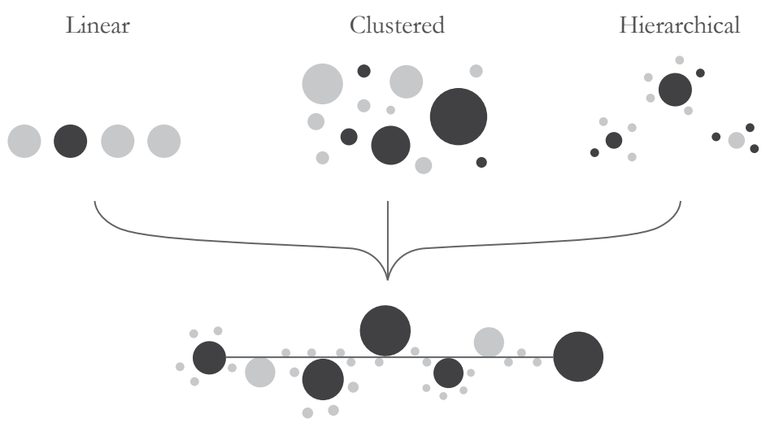


Urban Strategies

Networks and Magnets

Resource Magnets

Development Patterns



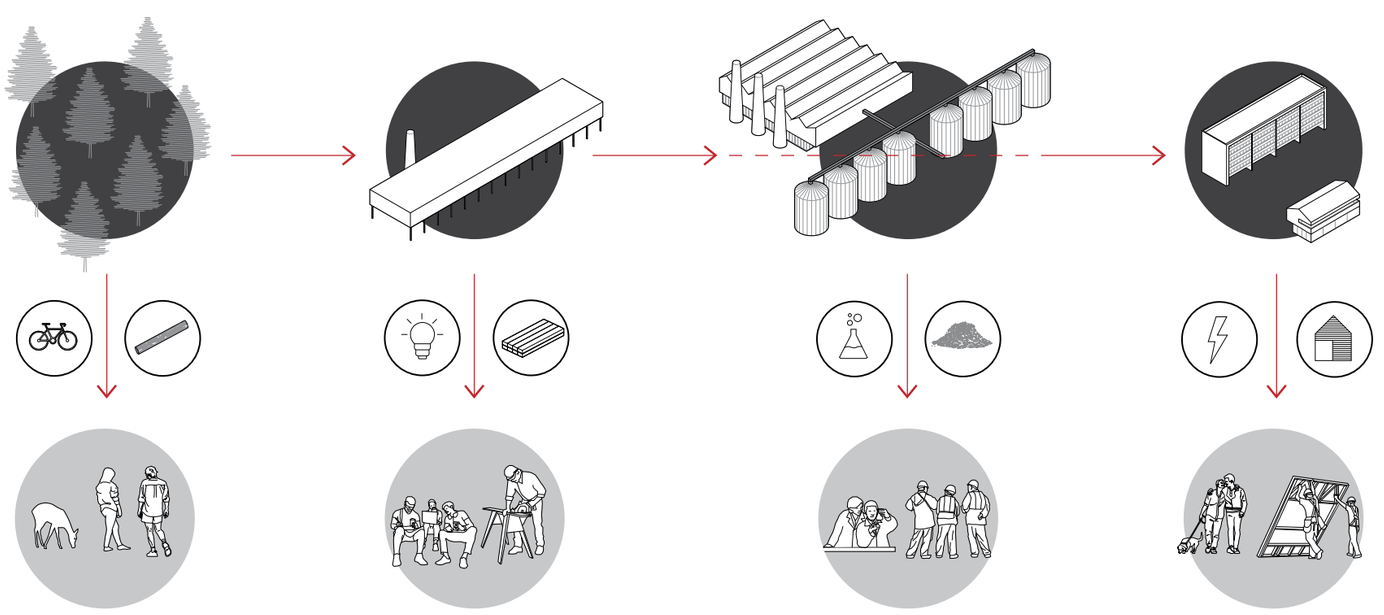
Collective Development

Selective Harvesting

Wood Manufacturing

Wood Pellet Biomass Generator

Building Supplies + District Energy



Resources + Leisure

Innovation + Carbon Capturing

Research + Green Manufacturing

Energy + Construction

Daylight Junction Creek

New Greenways

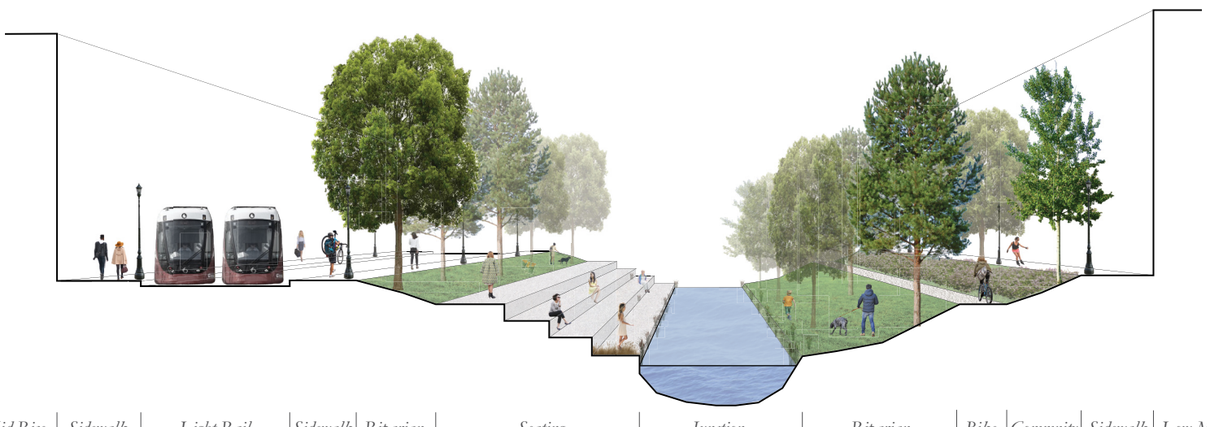
Development Magnets

New Light Rail Lines

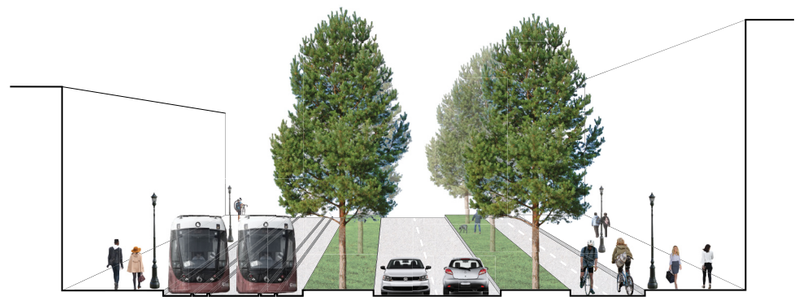
Collective Form

Productive Landscapes

Ecological Urbanism

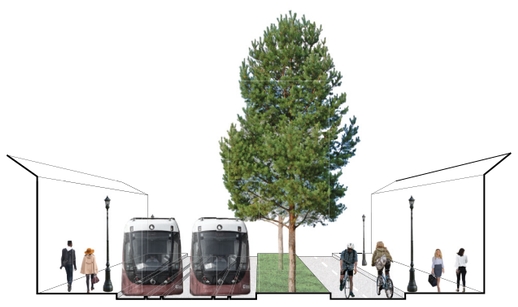


Low-Mid Rise Development | *Sidewalk* | *Light Rail Transit* | *Sidewalk* | *Riparian Planting* | *Seating* | *Junction Creek* | *Riparian Planting* | *Bike Trail* | *Commmity Garden* | *Sidewalk* | *Low-Mid Rise Development*



Mid-Rise Development | *Sidewalk* | *Light Rail Transportation* | *Green Median* | *Electric Vehicles* | *Green Median* | *Bike Trail* | *Sidewalk* | *Mid-Rise Development*

1 Daylight Creek Section

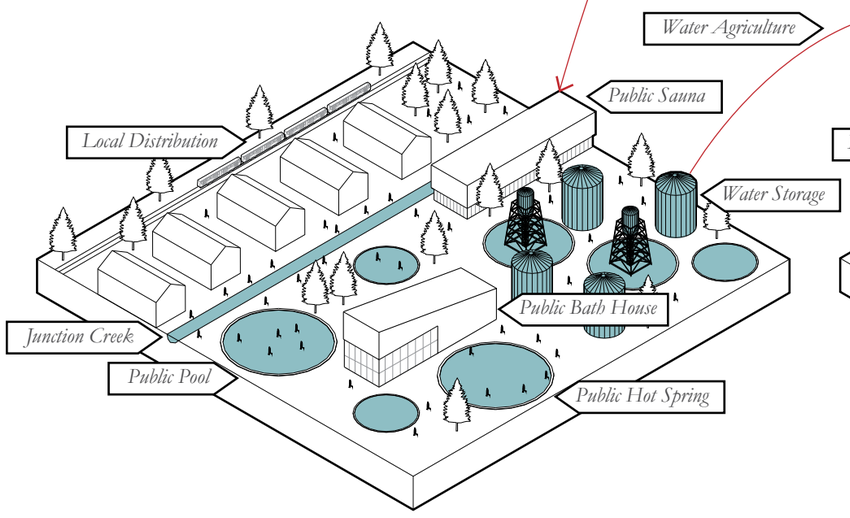


Low-Rise Development | *Sidewalk* | *Light Rail Transit* | *Green Median* | *Bike Trail* | *Sidewalk* | *Low-Rise Development*

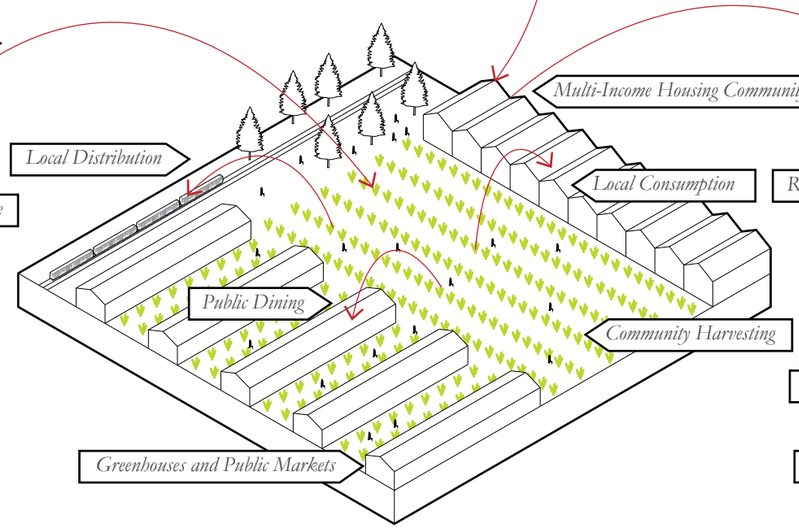
2 Major Street Section

Public Green Space | *Walking Trail* | *Green Median* | *Bike Trail* | *Green Median* | *Low-Rise Development*

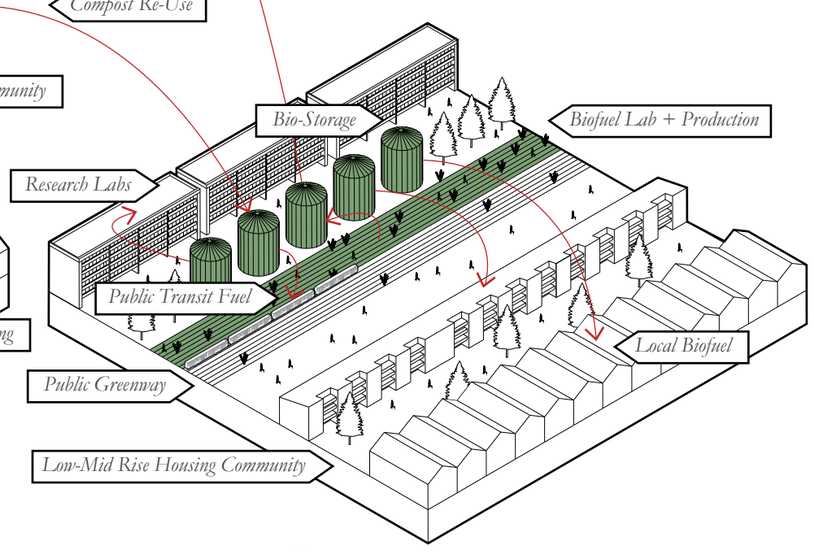
3 Converted Greenway Section

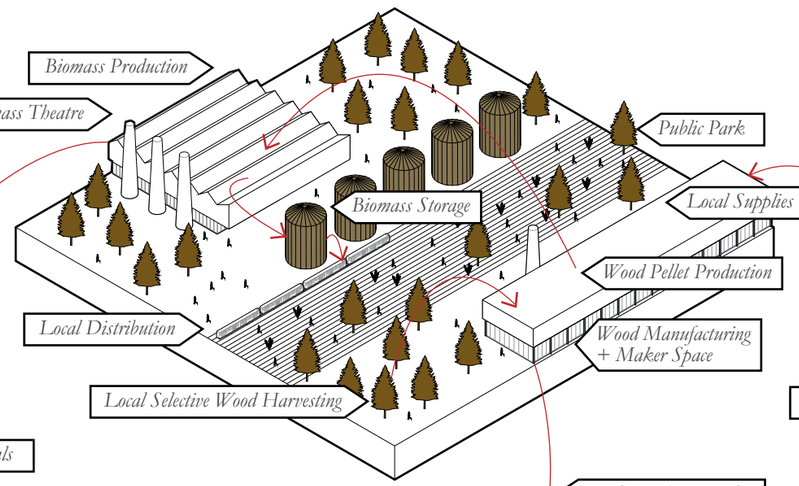


4 Lumber + Biomass Magnet



5 Pedestrian Greenway Section





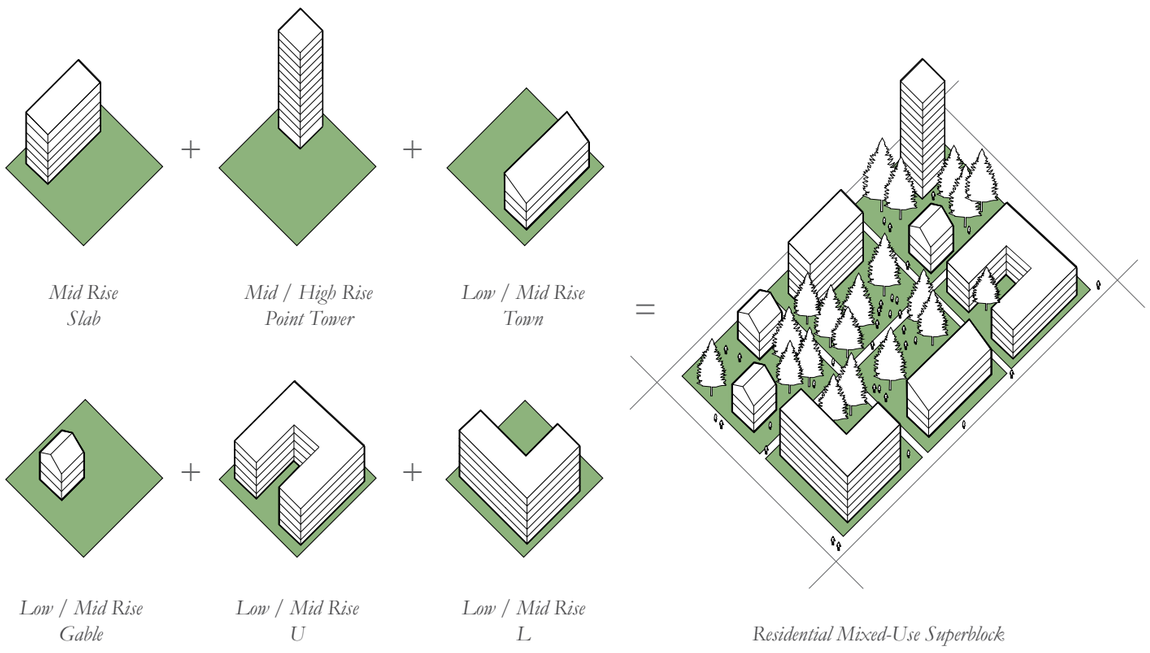
6 Water Magnet

7 Agriculture Magnet

8 Bioremediation + Biofuel Magnet

Public Engagement

Micro—Macro Communities



Community Greenway + Commons

Residential Neighbourhood (Re)development

Community Agriculture Magnet

Rail Yard Park Christmas Market

City Centre at Rail Yard Park