

**URBANISM**

From Montreal to Mexico City, transportation corridors generate communities, towns, cities, states and regions. Enabled by its many highways and railroads, the low density urban mega-region proliferates across North America.

**WATER**

Through the proliferation of impervious pavement and the draining of wetlands, urbanization impedes natural water purification processes. Coastal dead-zones expand in North American waters.

**HABITAT**

Development is the most long-lasting form of habitat loss - the presence of pavement and buildings hinders a return to natural conditions. The piecemeal pattern of protected open space cannot reconnect fragmented habitats.

**PRODUCTION**

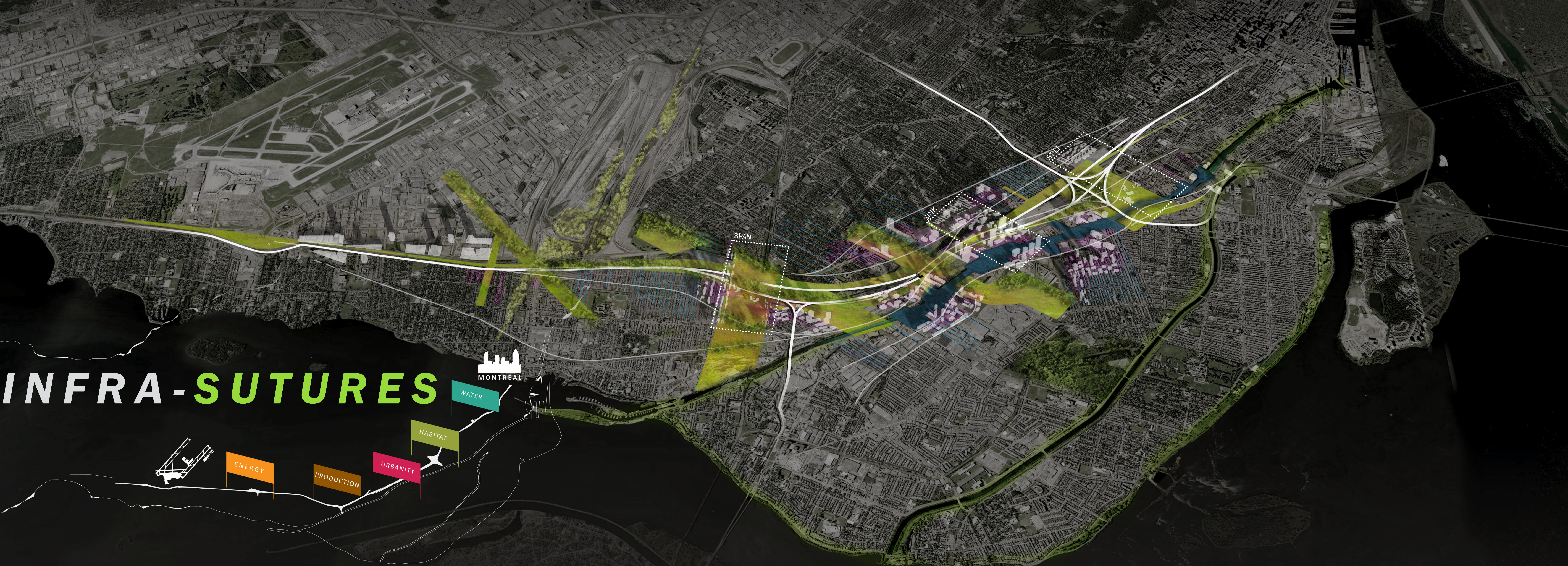
Agricultural and industrial economies rely on an expansive distribution network of rail and highway infrastructure, connecting inland and coastal ports. As the international port closest to North America's industrial heartland, the Port of Montreal represents a hinterland of some 100 million Canadian and American consumers.

**ENERGY**

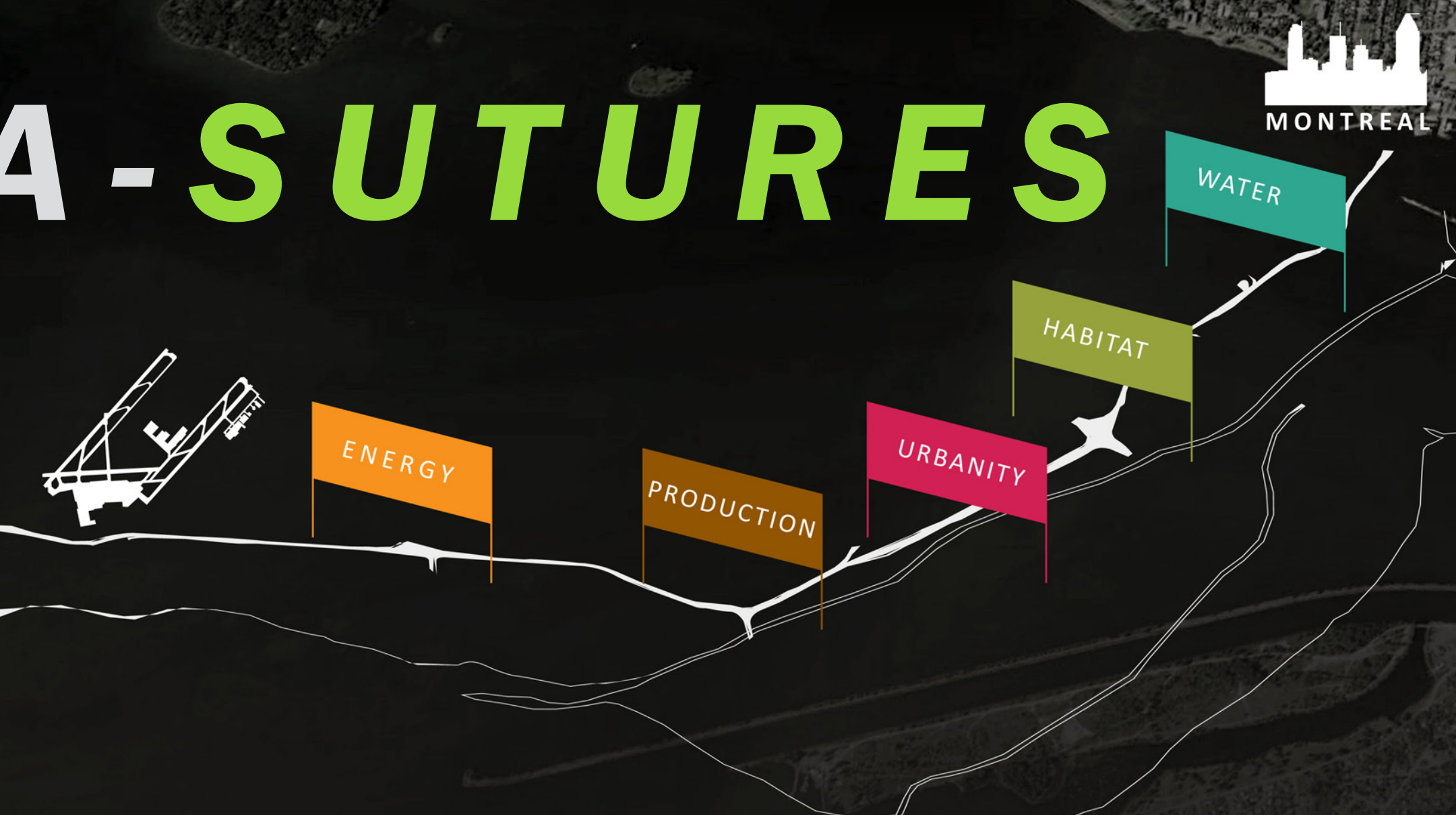
North America produces one-fourth of global energy supply and consumes 50 percent of the world's commercial energy. As highways have enabled the proliferation of low-density urbanization across the continent, energy infrastructures have grown in both magnitude and complexity.

**REGIONAL INFRA-SUTURE STRATEGY**

As infrastructures across the continent are on the verge of collapse, highways are in a pivotal position to alter the North American landscape. Transit infrastructure can be transformed into multifunctional "infra-sutures" that engage local and regional landscapes.



# INFRA-SUTURE



Montreal is a city of design. This may not be the first impression when arriving from Trudeau International Airport and driving to the city center. What is apparent are the highways, canals and freight lines that made the city a critical component of North American Industrial trade. These specifically designed linear infrastructure systems are the dominant element in the landscape, yet they generally fulfill only a singular function. As a consequence the urbanity, hydrology, ecology, creativity and energy of the city are sublimated. Transit infrastructure built Montreal, but left it wounded. Streams are buried and flood plains paved. Open and urban spaces are dehumanized, disconnected, and dissonant, with the image of the city and the surrounding environment.

The site is a microcosm of the nationwide infrastructure network, where a new story can unfold about healing the wound caused by linear rail, highway and canal systems that currently divide the city. Highways, railroads and canals designed for the efficient movement of people and goods are one of the largest open space systems in North America. As this infrastructure begins reach the end of its design life a new opportunity exists to create a system of infra-sutures that stitch together the urban landscape. Infra-sutures generate sustainable urbanism, support productive economies, enable alternative energies, restore natural hydrology and reconnect habitats.



VIEW FROM NEW HIGHWAY

	TRANSIT	WATER	HABITAT	URBANISM	PRODUCTION + ENERGY
CHALLENGES	 Transportation right-of-ways divide the city	 Streams are buried and high levels of impermeability increase flood risks	 Open spaces are fragmented and unusable as habitat	 Residential neighborhoods remain divided by transit systems	 Low density industry occupies large tracts of land
STRATEGIES	 Alternate routes minimize traffic, while consolidated highway and rail lanes shift, sink, and silt according to adjacencies	 Wetlands, upland green and lowland blue streets minimize runoff and purify water. Lachine canal expands and softens strategically	 New open spaces stitch together neighborhoods, improve air quality, sequester carbon and provide continuous habitat	 Urban density increases along the expanded waterfront and new open space.	 Vertically stacked industry develops along the rail. As pilings for the new highway are constructed, geothermal plants provide energy for new development