



Our mission is to protect and conserve Georgia's natural resources through advocacy, engagement and collaboration.

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**WE ARE GRATEFUL TO THE GENEROUS DONORS WHO SUPPORTED THE  
MISSION ZERO CORRIDOR BLUEPRINTS:**



**Interface<sup>®</sup>**

**THE FUTURE OF HIGHWAYS PROJECT IS THE RESULT OF A  
DESIGN + RESEARCH STUDIO IN THE SCHOOL OF ARCHITECTURE,  
FALL 2014**

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# THE GEORGIA CONSERVANCY BLUEPRINTS PROGRAM

Highways everywhere connect our communities but also create critical divides. This pervasive infrastructure is continuously maintained, rebuilt and expanded, yet thoughtful dialogue on highway impacts and detriments has not occurred. This Mission Zero® Corridor *Blueprints* project examines possible reinvention for the future of highways to have only positive impacts on our communities and our environments.

The Georgia Conservancy's *Blueprints for Successful Communities* program, in partnership with faculty and graduate students in the School of Architecture at the Georgia Institute of Technology and a studio instruction team from Perkins+Will, Architects, in Atlanta, examined

the potential that may exist to transform highway corridors to roadways that have far less degrading environmental impacts. This Georgia Conservancy-sponsored *Blueprints* study focuses on the Ray C. Anderson Memorial Highway, from exits 2 to 18 on Interstate 85 in West Georgia. The project is named Mission Zero Corridor, adopting the namesake of Interface's Mission Zero® initiative to become a zero footprint company by 2020.

Ray Anderson inspired others through his methods of attracting by demonstration and catalyzing change by inspiration. This is the spirit and legacy that live on through the business and philanthropy of his company, Interface, and through the philanthropy of the Ray C. Anderson Foundation.



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### VIEW OF RAY C. ANDERSON MEMORIAL HIGHWAY FROM EXIT 6

Essentially, the Mission Zero Corridor project provides the opportunity to show the world what is possible along a travel corridor, and to elevate the identity of West Georgia by creating brand new economic development and tourism activities through a reinvented corridor.

This project brings together several precious things to Ray; Ray was a Georgia Tech graduate, a previous board trustee for the Georgia Conservancy, and of course the focus on creating restorative and sustainable environments.

#### *Blueprints Process*

*Blueprints for Successful Communities (Blueprints)* is a 20-year-old sustainable community design effort within the

Sustainable Growth program of the Georgia Conservancy. The *Blueprints* model (completed in 38 communities around the state) focuses on local needs, challenges and assets informed by stakeholder engagement. This Design + Research *Blueprints* concentrates on sustainable highway design and a framework that enables this design. This *Blueprints* process did not involve stakeholder engagement beyond interactions with local experts, the Ray C. Anderson Foundation, and select Interface staff, to inform them of the effort and gather their feedback. Instead, this *Blueprints* serves as a research endeavor whose results will inform future traditional *Blueprints*, as highways and roads impact all of our communities, and the lessons learned can be applied to community design across the State of Georgia and nationally.

# WHAT DOES A REGENERATIVE, RESTORATIVE, & SUSTAINABLE HIGHWAY LOOK LIKE?

The *Blueprints* team was asked to examine the 16-mile stretch of Interstate 85 in Troup County, Georgia dedicated to Ray C. Anderson in 2014, in honor of his outstanding achievement and the legacy he left for his hometown of West Point, and for the rest of the world. An interstate highway was used to honor a true environmentalist. But, how can a piece of infrastructure, that is inherently unsustainable and a large catalyst for environmental pollution and degradation, truly begin to commemorate Ray's legacy and his pursuit of sustainability?

That question serves as the design challenge presented to the faculty and students in the Georgia Tech School of Architecture Design + Research studio by the Georgia Conservancy and the Ray C. Anderson Foundation in the fall of 2014. Designing a highway and rethinking the purpose and function of a highway corridor is a tremendous task, in addition to the goal of honoring Ray's legacy and vision. The idea that it should be sustainable, with regenerative and restorative properties, helped to guide the discussion and studio process. Additionally, by narrowing the study area in focus (the 16-mile section of I-85), the team could begin to work on a framework and test its application, before recommending the solutions globally.



## INTERSTATE 85 / RAY C. ANDERSON MEMORIAL HIGHWAY

Throughout the course of an academic semester, the students were asked to explore these questions and address the problems through the lens of urban design. This required interim presentations to the Ray C. Anderson Foundation and selected Interface staff, to integrate their ideas and more intimate knowledge of Ray with the class findings. The studio familiarized themselves with Interface Inc.'s initiative to be environmentally neutral (net zero) by the year 2020, known as Mission Zero 2020. The Mission Zero 2020 framework provides a proven methodology to develop an action plan to tackle the challenge of a sustainable highway vision while injecting a piece of Ray's legacy into his highway.

The Mission Zero 2020 plan served as a model but was modified to address the problems on highways and then determine appropriate solutions and goals that would define the success of the corridor. To understand the depth of the issues, the students were required to holistically examine the varying influences (ecology, culture, and infrastructure) and overlay these with each other to identify conflict points, opportunities, and then to inform a plan of action. The established framework can then direct locations for employing specific technology tactics for improving environmental sustainability, allowing these to change over time through the rapid pace of innovations.



THROUGH A FOCUS ON PEOPLE,  
PLACE AND TECHNOLOGY, THE  
HIGHWAY OF THE FUTURE WILL  
BE NET ZERO, RESTORATIVE,  
GENERATIVE, RESPONSIBLE,  
RESPECTFUL AND INFORMATIVE  
BY 2040.

IN DOING SO, IT WILL SET A NEW  
STANDARD THROUGH  
**THE POWER OF ITS IMPACT.**

# MISSION ZERO CORRIDOR

## BLUEPRINTS REPORT

Ray C. Anderson  
Memorial Highway

EXIT  
2 ↗

# 1 | MISSION ZERO





# AN INDUSTRIALIST TURNED ENVIRONMENTALIST CHAMPIONED THE IDEA OF ECONOMIC PROSPERITY IN HARMONY WITH NATURE

Ray C. Anderson was born and raised in West Point, Georgia. In 1969 he was first introduced to carpet tiles and understood the necessity for this type of modular design in the work place. In 1973, he established the first American, and the world's largest carpet tile manufacturing company, Interface, Inc.

Unfortunately, the carpet industry is particularly hard on natural resources and the environment because of its consumption of water and use of chemical dyes and petroleum. Ray was questioned on the environmental impact of Interface's industrial practices, a thought he hadn't previously considered, but knew he needed to take responsibility for. Ray established a task force within Interface to address the environmental questions put forth by customers, and this group sought to find answers that are not merely related to "compliance."

Finding a way to internalize the environmental costs of his company wouldn't be easy; the industry had functioned in similar ways for many decades. Ray and Interface developed a framework to eliminate their environmental impact but maintain productivity and still turn a profit. This seven-pronged, closed loop system holistically addresses the various components of the manufacturing process without damage to the environment. This Mission Zero framework is a "promise to eliminate any negative impact our company may have on the environment by the year 2020."

# THE POWER OF ONE CHANGE BEGINS WITH EVERY INDIVIDUAL.



**RAY C. ANDERSON**  
(1934-2011)

Ray's focus was on building Interface and making great products, and he was extremely successful at this. Interface became the world's largest carpet tile manufacturing company by 1987 with his leadership.

In 1994, Ray found a book on his desk, *The Ecology of Commerce*, and something clicked. With his company's global reach and manufacturing footprint, he was in a leading position to do something very real and very important towards building a more sustainable world. Corporate sustainability has been realized as an integral part of a business plan, because of Ray's vision. What Ray did seems commonplace now, but 20 years ago it was truly revolutionary.

## Paul Hawken's *The Ecology of Commerce* was Ray's wake up call.

While reading *The Ecology of Commerce*, Ray encountered a life-changing metaphor. In the book, Hawken recounts a situation during World War Two, when the U.S. Coast Guard populated St. Matthew Island in the Bering Sea with 29 reindeer for an emergency food resource. After the war, the

island was abandoned. In the next 19 years, the population exploded to over 6,000 reindeer. Three years later, the population had decreased to only 42 reindeer. The island could not sustain continuous increase in demand by the reindeer, ending in death for a majority of the population.



**ST. MATTHEW ISLAND,  
BERING SEA**



**1944  
29 REINDEER**



**1963  
6000+ REINDEER**



**1966  
42 REINDEER**

**(PRE-EPIPHANY)**

**(POST-EPIPHANY)**

EARLY YEARS	GEORGIA TECH	YOUNG PROFESSIONAL	INTERFACE INC.	MISSION ZERO	AFTER RAY
July 28, 1934, Ray is born to William & Ruth Anderson	1956, Ray graduates from Georgia Tech with highest honors and a degree in industrial engineering	1969, Ray is first introduced to carpet tiles. This would be the innovation to drive his future flooring company, Interface	1973, Interface Inc. is officially established  1983, Interface Inc. goes public & expands its market internationally  1994, Customers begin asking about Interface's environmental policies	<p><b>1994,</b> Mission Zero is born, the 2020 deadline comes soon after</p> <p><b>1998,</b> <u>Mid-Course Correction</u> is published, chronicling Ray's journey to establishing a sustainable company</p> <p><b>2009,</b> <u>Confessions of a Radical Industrialist</u> is published, telling Ray's story of building Interface into a net zero company</p>	<p>August 8, 2011, At the age of 77, Ray passes away from cancer</p> <p>July 30, 2014, Georgia Gov. Nathan Deal signs legislation creating the Ray C. Anderson Memorial Highway in Troup County</p> <p>August 18, 2014, Mission Zero Corridor Design + Research Studio begins at Georgia Tech</p>

**1994**

**Ray reads Ecology Of Commerce and has a spear in the chest moment, a moment when everything became clear**

Ray took the St. Matthew Island situations as a metaphor for our planet and mankind's ever growing need for resources to heart. He often referred to this epiphany as his "spear in the chest" moment.

**PAST**

The earth was home to balanced ecosystems with closed loops allowing all species to thrive.

**PRESENT**

Continuous increase in the use of natural resources has endangered many species and created unbalanced ecosystems.

**FUTURE**

An earth devoid of its vital resources leads to dangerous changes in its climate, habitats and ability to sustain life.

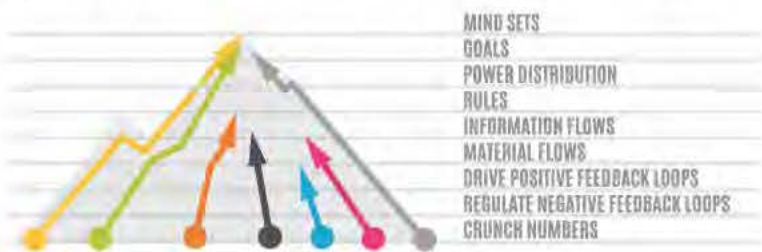
## MISSION ZERO 2020 & INTERFACE

### RAY WAS A REVOLUTIONARY: HE MADE A FRAMEWORK FOR INDUSTRY TO BEGIN A PATH OF NEUTRAL IMPACT TO THE ENVIRONMENT.

Mission Zero is a collection of programs developed to move Interface towards a net zero impact on the environment by 2020. The seven framework areas (at right) focus on specific tasks that will help reduce Interface's environmental footprint and create a more sustainable method of business. These areas are constantly reevaluated to ensure constant success by using the Mount Sustainability chart.








To Interface, Mission Zero means taking the time to understand the natural world and all of its species, and to understand how everything we do, take, make and waste affects nature's balance and, ultimately, our children. From this knowledge, they build processes throughout the business that mimic nature and support the environment, while consistently providing beautiful, high performing products.

### The quest for Mount Sustainability was about systems thinking, using various leverage points, pathways and timelines to achieve net-zero.



These nine leverage points provide incremental tasks to keep constant movement to net zero. Ray knew this would be a hard task and Interface would need a consistent means to measure their success. The leverage points are ordered from the easiest to achieve to the most difficult task at the peak.

## Interface's Mission Zero 2020 Framework

PATH	GOAL / ACTION AS OF YEAR END 2014
 <b>ZERO WASTE</b>	<p>Interface defined waste as any cost that doesn't improve value, including misdirected orders and bad debts.</p> <p><b>WASTE SENT TO LANDFILL DOWN 91% SINCE 1990</b></p>
 <b>BENIGN EMISSIONS</b>	<p>The goal is to release increasingly benign emissions, working up the supply chain.</p> <p><b>NET GREENHOUSE GAS EMISSIONS PER UNIT OF PRODUCT ARE DOWN 73% SINCE 1996</b></p>
 <b>EFFICIENCY &amp; RENEWABLES</b>	<p>Increasing efficiency is like lightening your backpack for the climb up the mountain.</p> <p><b>WATER USED PER UNIT OF PRODUCTION DOWN 17% RENEWABLE ENERGY SOURCES USED: 45%</b></p>
 <b>CLOSED-LOOP RECYCLING</b>	<p>Facilities should function like plants; Interface imitated nature's way of turning waste into useful material.</p> <p><b>RECYCLED &amp; BIO-BASED MATERIALS: 50%</b></p>
 <b>RESOURCE-EFFICIENT TRANSPORT</b>	<p>For Interface, this meant commuting logistics, facility siting, and working with truckers.</p> <p><b>18,044 TREES PLANTED IN 2010 TO OFFSET EMISSIONS FROM BUSINESS AIR TRAVEL AND CAR COMMUTING FOR 640 EMPLOYEES</b></p>
 <b>CHANGING ATTITUDES</b>	<p>Interface defined stakeholders broadly. This aimed to sensitize both customers and employees.</p>
 <b>SPREADING THE WORD</b>	<p>Interface sought to redesign commerce, whether by changing the company, contractors and suppliers, or other businesses.</p>







**INTERFACE'S SUCCESSFUL DRIVE TOWARDS SUSTAINABILITY CHANGED THE WAY INDUSTRIES OPERATED ON A GLOBAL SCALE. RAY PIONEERED THE IDEA THAT BUSINESS COULD THRIVE IN HARMONY WITH THE ENVIRONMENT.**

# MISSION ZERO CORRIDOR

**MISSION ZERO 2020  
CREATED A FRAMEWORK  
FOR TRANSFORMING  
INTERFACE INTO A NET-ZERO,  
RESTORATIVE COMPANY.**

**MISSION ZERO CORRIDOR IS A  
FRAMEWORK FOR HIGHWAYS  
TO REACH THE SAME GOALS.**

## Mission Zero Corridor 2040 Framework for Highways Everywhere

PATH	GOAL
 <b>POLLUTION REMEDIATION</b>	The highway of the future will not only reverse pollution, but will make the world a cleaner, more beautiful place.
 <b>RESOURCE EFFICIENCY</b>	The highway of the future will not only save resources, but generate new resources.
 <b>WILDLIFE CONSERVATION</b>	The highway of the future will not only restore degraded ecosystems, but create new and improved habitats.
 <b>LIFE SAFETY</b>	The highway of the future will not only reduce the number of fatalities associated with them, but become the safest mode of transportation.
 <b>CULTURAL EXCHANGE</b>	The highway of the future will not only reconnect communities, it will become a new venue for social interaction.
 <b>CHANGING ATTITUDES</b>	The highway of the future will not only instill moral awareness, but empower people to be symbiotic with our environment.

**IN THE SAME WAY THAT INTERFACE'S LOCAL MISSION ZERO 2020 IMPACTED INDUSTRY ON A GLOBAL SCALE, MISSION ZERO CORRIDOR AIMS TO BE A LOCAL MODEL FOR SUSTAINABLE HIGHWAYS WITH GLOBAL IMPACTS. BUT FIRST, WE MUST UNDERSTAND HIGHWAYS.**

The framework is a platform for employing strategies at the global and local levels.

## **LEVEL 1: GLOBAL**

### **INTERSTATE HIGHWAYS EVERYWHERE**

1. Understand the issues
2. Create an ideal vision
3. Establish a platform for change

## **LEVEL 2: LOCAL**

### **RAY C. ANDERSON MEMORIAL HIGHWAY**

1. Understand the place
2. Create a vision for this place
3. Determine the best solutions for this place

**MISSION ZERO.  
GLOBAL FUNCTION.  
LOCAL IMPACT.**



# 2 | HIGHWAYS TODAY

HIGHWAY NETWORK IN LOS ANGELES





# A NUMBER OF FLAWS PROVES HIGHWAYS TO BE AN OUTDATED FORM OF TRANSPORTATION, RIPE FOR REDEVELOPMENT.

Some say the last major, widespread innovation in highways was President Dwight D. Eisenhower's enactment of the Federal Highway Administration in 1956. The Federal-Aid Highway Act of 1956 laid the foundation for over 40,000 miles of roads that would link the United States together, allowing for easy transportation of goods and people. As the years have passed, more roads have been built and almost every aspect of life and culture has somehow been affected by highways. The ability to buy Florida oranges in Washington State for a reasonable price or to travel from Atlanta to New York City in less than a day has tremendous impacts on how we live and function.

Nearly 60 years later, some signs may have changed and traffic lanes have been added, but highways look virtually the same. The same flaws that have plagued highways from the beginning have been exacerbated by increased populations and traffic flows. Problem mitigation has only been resolved through the thinking that highways will always look and function as they do now, but this thinking needs to be reevaluated. How can the highway be reimagined to be a safe, sustainable, restorative and a more efficient conduit for transportation?

# THE ARCHEOLOGISTS OF SOME FUTURE AGE WILL STUDY THE FREEWAY TO UNDERSTAND WHO WE WERE.

DAVID BRODSKY, L.A. FREEWAY (1981)

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## A New National Network

The development of the highway offered opportunities for an intelligent, multi-performative system with national breadth. Innovative ideas emerged, basing the new network on landscapes, watersheds, regional topographies, national resources and existing infrastructure networks.

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## The Federal-Aid Highway Act of 1956

The Interstate Highway system, instead of incorporating innovative solutions, was designed to be a frozen, dumb network - driven by standardization, efficiency and cost. The process excluded any information that did not fit into the internal engineering equations, such as the real cost of the automobile transportation and the ramifications it would bring.

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## The Outcome + Potential

The result was a system entirely segregated from its surroundings. This segregation, meant to insulate the system and protect the surroundings, created a sprawling barrier between habitats and communities. Though highways have created insurmountable problems, they now provide a national-scale platform for reinvention and positive change.

# THE HIGHWAY WAS ENGINEERED AS AN INFLEXIBLE, TOTALIZING AND NEUTRALIZING SYSTEM: COMPLETELY SEGREGATED FROM INTERACTION WITH ITS SURROUNDINGS.



**COST OF OPERATING AN AUTOMOBILE**  
CENTS PER MILE

				
2.8¢	2.1¢	1.7¢	1.8¢	1.4¢
ORIGINAL VEHICLE COST DEPRECIATED	MAINTENANCE ACCESSORIES PARTS & TIRES	GAS & OIL (EXCLUDING TAXES)	DAMAGE PARKING & TOLLS	INSURANCE STATE & FEDERAL TAXES
TOTAL COST				COST OF HIGHWAY
11¢ per mile				

## U.S. INTERSTATE HIGHWAY SYSTEM WITH POPULATION

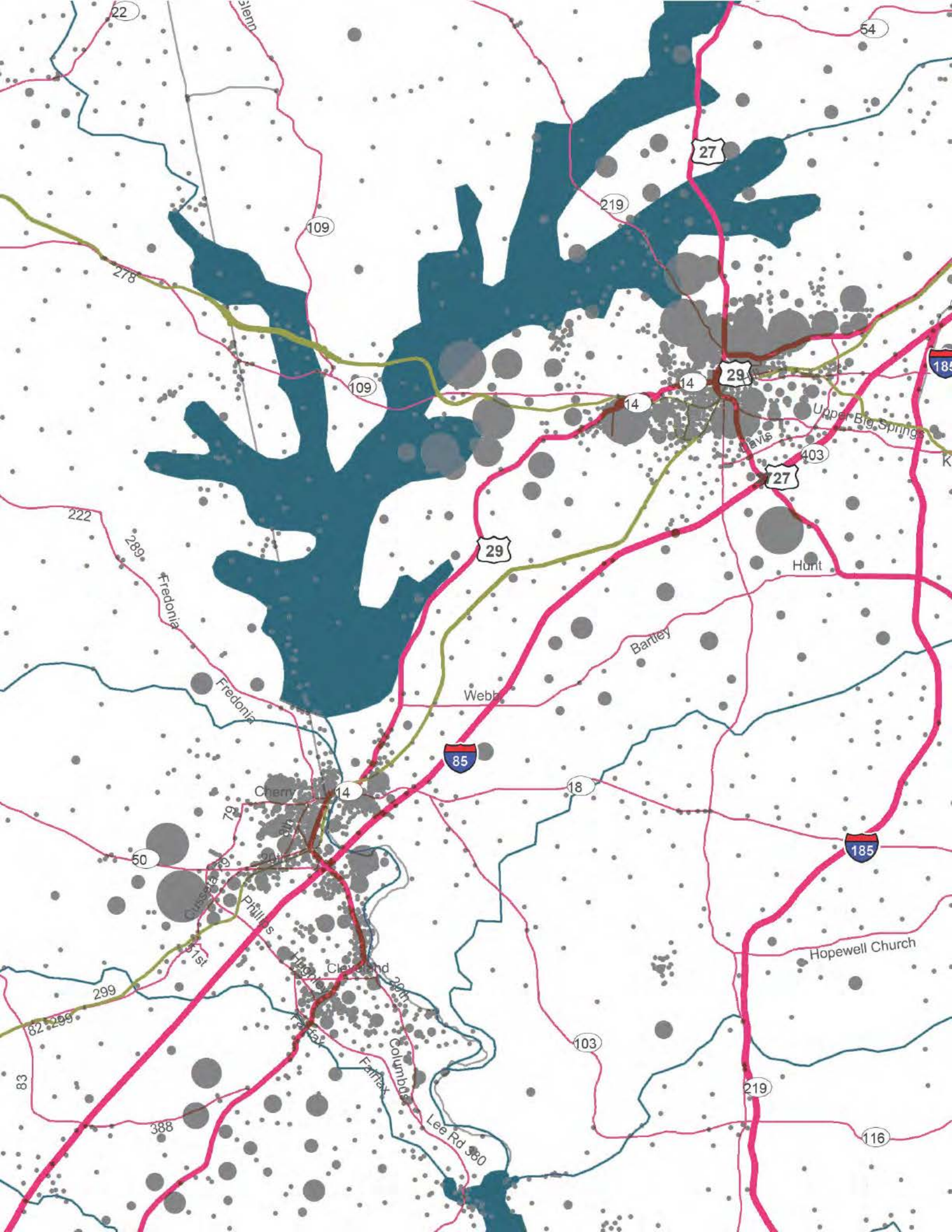


**HIGHWAY ENGINEERS, HAVE, WITH MAGNIFICENT FIDELITY REPEATED ALL THE WORST ERRORS OF THE RAILROAD ERA... INSTEAD OF ADDING A NEW ELEMENT OF FLEXIBILITY AND BREADTH TO A RAILROAD SYSTEM THAT HAD BECOME RIGID IN ITS CONCENTRATION ON INTERCONTINENTAL TRAFFIC... THE HIGHWAY ENGINEERS HAVE LARGELY BEEN DUPLICATING THE RAILROAD SYSTEM.**

--Lewis Mumford, *On Freedom, Highways, and Flexibility*, pg 74

The interstate highway connects and divides people. It connects the same major hubs and negotiates the same geographical conditions as the railroads. The two systems run roughly parallel in many places, but separate enough to preclude multi-modal travel. This is a missed opportunity to expand the breadth of our transportation system.

While infrastructure supports the growth of cities it serves, at a smaller scale, the interstate is unique in its ability to damage the economies of nearby neighborhoods.



# HIGHWAY CONTEXT

## SCALE & EXPERIENCE

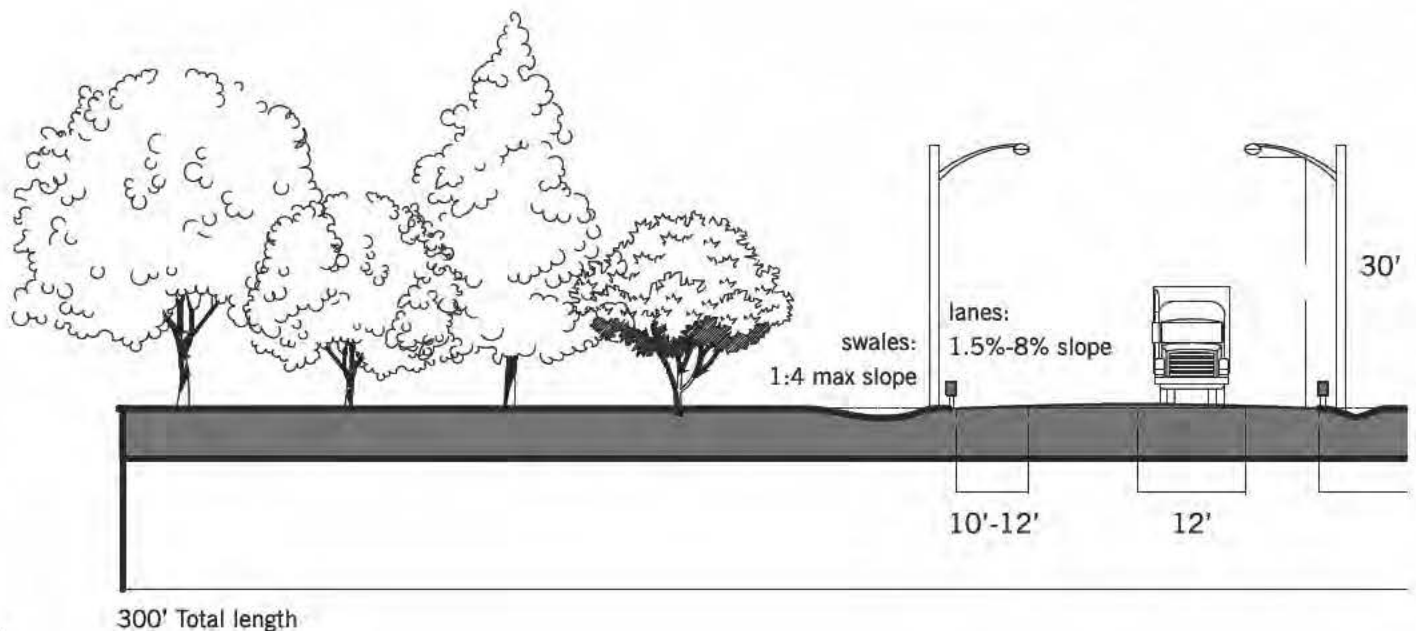
The size and scale of the highway has not changed much since its original design nearly 70 years ago. However, the vehicles that travel upon it and the places it connects have transformed dramatically. Requirements such as the slopes of the roadway and distances required between lanes is uniform across the majority of roadways across the U.S. The layouts of traffic lanes can vary depending on the local geography. This allows for different experiences for motorists and opportunities for innovation.

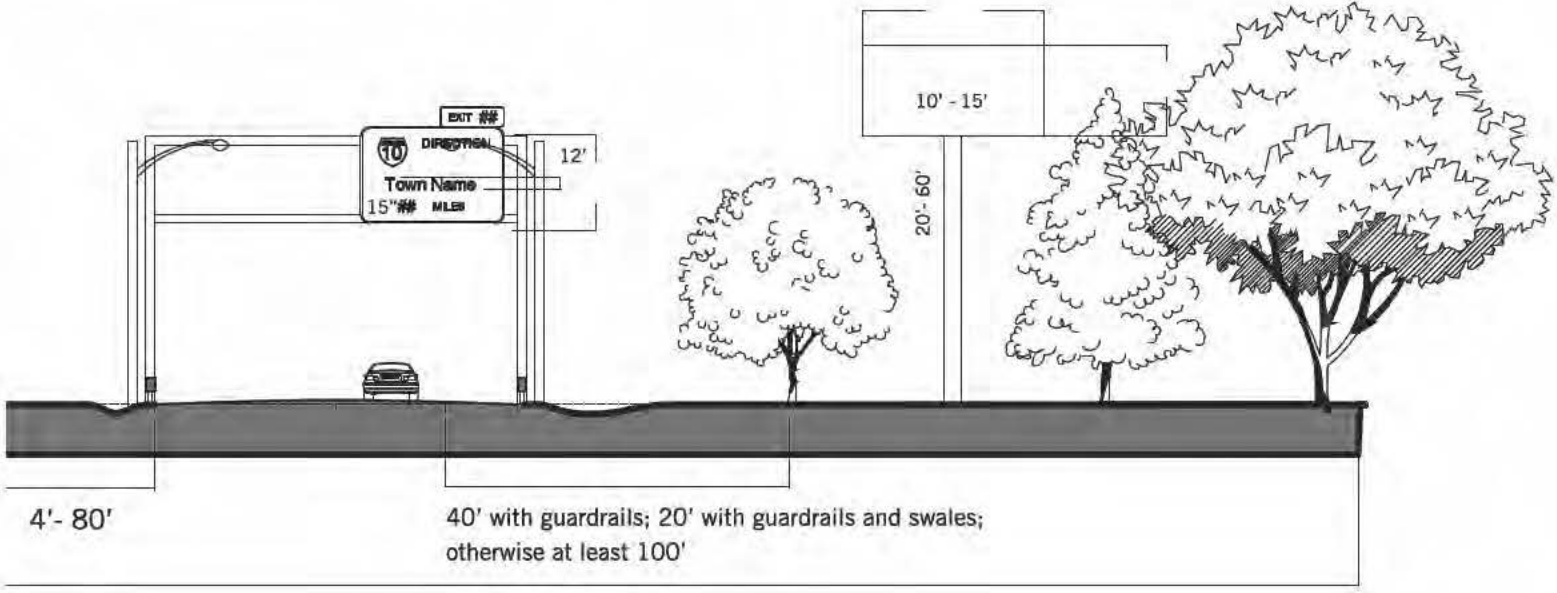
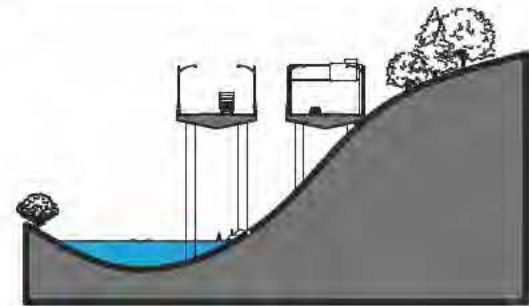
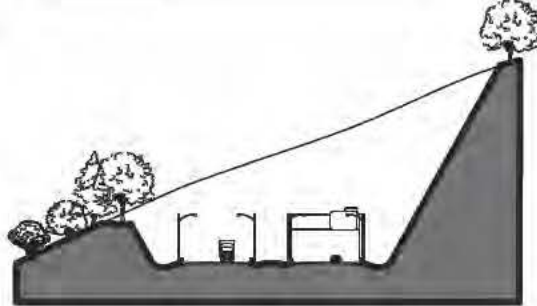
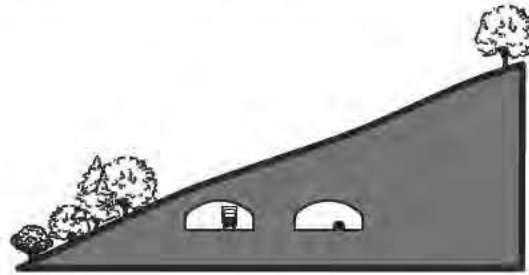
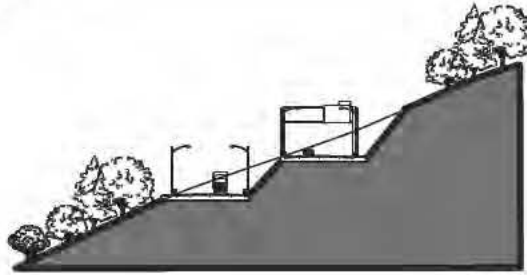
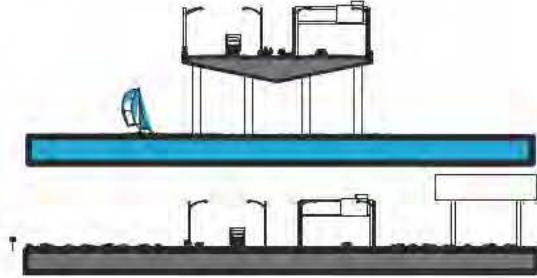
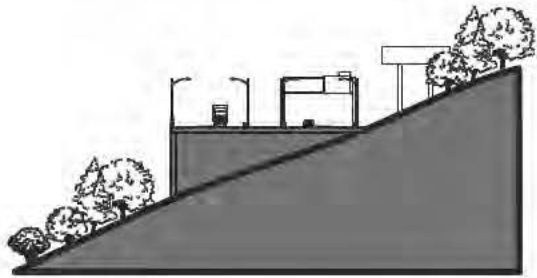
**Together, the united forces of our communication and transportation systems are dynamic elements in the very name we bear—United States.**

-- President Dwight D. Eisenhower  
February 22, 1955

### HIGHWAY DESIGN STANDARDS

Design Speed	Max Slope	Passing Sight Distance	Min Turning Radius	Min Radius without Transition	Transition Length
45 mph	7-12%	1625'	730'	1025'	132'
55 mph	7-12%	1985'	1190'	1531'	161'
65 mph	7-12%	2285'	2138'	2138'	191'
75 mph	5%	2580'	2846'	2846'	220'





HIGHWAYS POLLUTE  
AND DEFILE LAND,  
AIR & WATER.

**HOW DOES THIS AFFECT OUR  
HEALTH, OUR ENVIRONMENT  
AND OUR FUTURE?**



# ANNUALLY ON THE RCA HIGHWAY, **98,532 TONS OF CO<sup>2</sup> IS EMITTED.**

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1 GALLON OF GASOLINE EMITS **19.4 LBS OF CO<sub>2</sub>** INTO THE ATMOSPHERE

1 GALLON OF DIESEL EMITS **22.2 LBS OF CO<sub>2</sub>** INTO THE ATMOSPHERE

AN ACRE OF TREES CAN SEQUESTER **2,689 LBS OF CO<sub>2</sub> PER YEAR**

**73,285 ACRES OF FOREST** NEEDED TO SEQUESTER ALL THE CO<sub>2</sub> EMITTED

THAT IS **114.5 SQUARE MILES** OR ROUGHLY THE AREA OF ATLANTA

# ENVIRONMENTAL POLLUTION

## OF ALL THE UNINTENDED CONSEQUENCES OF THE HIGHWAY SYSTEM, POLLUTION IS THE MOST DETRIMENTAL TO HUMAN HEALTH AND ENVIRONMENTAL SUSTAINABILITY.

THE ISSUE	HIGHWAYS	RAY C. ANDERSON MEMORIAL HIGHWAY
<b>ATMOSPHERE</b> Highways pollute the atmosphere through harmful emissions from vehicles and toxic road materials.	<b>5,424 MILLION</b> TONS OF CO <sub>2</sub> FROM THE U.S. DURING 2009	<b>318 TONS</b> OF EXHAUST ARE EMITTED FROM VEHICLES DAILY ON THE 16 MILE STRETCH OF HIGHWAY
<b>WATER</b> Highways pollute ground water through storm water runoff mixed with toxic chemicals from vehicles, road materials and litter.	<b>64%</b> OF ALL LAKE ACRES IN THE U.S. ARE NOT SAFE FOR FISHING OR SWIMMING	<b>60/100</b> WATER QUALITY RATING IN TROUP COUNTY BY THE U.S. HEALTH INDEX
<b>NOISE</b> Highways emit unhealthy levels of noise and light pollution through the vehicles that travel upon them. (dBA refers to A-weighting of noise levels. Typical speech falls at 60 dBA).	<b>104 MILLION</b> AMERICANS ARE EXPOSED TO OVER 70 dBA OF CONSTANT NOISE DAILY FROM HIGHWAYS	<b>8%</b> HIGHER CHANCE OF HEART DISEASE WITH CONSTANT EXPOSURE TO 70 dBA OF NOISE
<b>WASTE</b> Highways pollute the land through litter and road debris left behind from the people that use them.	<b>\$11.5 BILLION</b> SPENT ON LITTER ABATEMENT IN THE U.S. ANNUALLY	<b>6,729</b> PIECES OF TRASH PER ROADWAY MILE ON AVERAGE IN THE U.S.

Data sourced from the Environmental Protection Agency and Keep America Beautiful

## Though highways enable a variety of pollutants, emissions from vehicle exhaust have the most significant impact on the surrounding environment.

Since 1956, emissions have increased by a factor of five, but the number of cars has barely tripled. The same percentage of Americans are releasing progressively more pollution. (Figures below are based on 2014 data).



### UNITED STATES OF AMERICA

Emissions	1,696 MILLION TONS CO2
Miles of Road Built	4,092,730
Vehicle Miles Traveled	2,968 BILLION
Gallons Consumed	169 BILLION



### STATE OF GEORGIA

Emissions	46 MILLION TONS CO2
Miles of Road Built	125,532
Vehicle Miles Traveled	126 BILLION
Gallons Consumed	4.61 BILLION



### RAY C. ANDERSON MEMORIAL HIGHWAY

Emissions	116,342 TONS CO2
Miles of Road Built	16
Vehicle Miles Traveled	184 MILLION
Gallons Consumed	9.24 MILLION

# ENVIRONMENTAL POLLUTION

## ATMOSPHERE

Exhaust emissions from vehicles has been connected to cancer, neurological, respiratory and reproductive disorders in humans and animals. Asphalt, lane lines and roadway infrastructure emit VOCs during their entire lifetime of use.

### CONVENTIONAL MOTOR VEHICLES GENERATE FIVE TYPES OF POLLUTANTS

**Volatile Organic Compounds (VOCs)** are released from exhaust emissions and 1000s of materials such as paints and plastics. VOCs are known to cause a variety of health problems from cancer to respiratory disorders.

**Hydrocarbons (HCs)** react in the presence of nitrogen oxides to produce ground level ozone, a major component of smog.

**Nitrogen Oxides (NOx)** help create acid rain.

**Carbon Monoxide (CO)** is a colorless, odorless gas that reduces the flow of oxygen in the bloodstream.

**Carbon dioxide (CO<sub>2</sub>)** is a major component of exhaust gases and a green house gas (GHG) that traps heat in the atmosphere, thus causing global warming.

**HIGHWAYS ENABLE POLLUTION OF THE ATMOSPHERE THROUGH EMISSIONS FROM VEHICLES AND ROAD MATERIALS.**

## WATER

When rainwater or melting snow wash off the interstate highway it brings with it a collection of dirt and dust.

**Automotive fluids** such as antifreeze and oil, rubber and metal from tire wear pollute runoff water.

**Heavy metals, solid waste** and a variety of other substances that plague our roadways affect runoff water.

**Road salts** in regions with snow produce high concentrations of sodium and chloride in adjacent water bodies that can kill aquatic species and change water chemistry.

**Fertilizers, Herbicides and Pesticides** can also contaminate ground water and cause extinction of organisms and excessive growth of others, negatively affecting natural ecosystems.



Oil mixing with surface ground water

**POLLUTED RUNOFF WATER ENTERS THE GROUND WATER THAT EVENTUALLY LEADS TO THE WATERSHED, THE RIVERS AND EVENTUALLY TO THE WATER WE DRINK AND SWIM IN**

## NOISE

Highways emit noise pollution through the vehicles that travel upon it. The Federal Highway Administration (FHWA) requires noise mitigation at 67 dB(A).

**Physiological disorders** abound from noise pollution including cardiac, respiratory, neurological disorders, disrupted sleep and psychological disorders including stress.

**Increased heart rate** and an 8% higher chance of Thoracic Aortic Calcification (TAC); which, is a precursor to Heart Disease.

**Interruptions in wildlife** feeding and breeding have been attributed to noise pollution, thus causing natural ecosystems to move or dissolve in existence.

**Decreased property values** are a common consequence of interstate highway noise pollution.

## WASTE

Highways pollute the environment through road debris left behind from the people who use it.

**Life Safety** is compromised with interstate highways littered with solid waste causing motor vehicle crashes.

**Runoff Water Pollution** is attributed to solid waste littered on the highway. Contaminated ground water moves from the watershed to your sink faucet.

**Millions of Dollars** are spent annually to clean up trash littered upon the interstate highway.

25,000 motor vehicle accidents and 100 fatalities are attributed to solid waste littered on the interstate highway annually



Two grizzly bear cubs play with litter (Jason Leo Bantle)

**THE AVERAGE INTERSTATE HIGHWAY TRAFFIC PRODUCES 75 DB(A) WITHIN A 500' RADIUS, FOR MOST PEOPLE, DISCOMFORT STARTS AT 70-80 DB(A)**

**75% OF AMERICANS ADMIT TO LITTERING WITHIN THE LAST 5 YEARS**

HIGHWAYS CONSUME  
ENORMOUS AMOUNTS OF  
MATERIALS, ENERGY, TIME AND  
MONEY.

**WHAT ARE THE FINANCIAL AND  
RESOURCE COSTS INVOLVED?**

TO ADD ANOTHER TRAFFIC LANE  
TO THE 16 MILE STRIP OF HIGHWAY,  
**IT WOULD COST TAX PAYERS AN  
ESTIMATED \$105 MILLION.**

---

\$105 MILLION CAN FINANCE A **23,000 KW PHOTOVOLTAIC ARRAY**

THE **AVERAGE U.S. HOME USES 10,000 KWS** PER YEAR

THIS CAN POTENTIALLY **POWER 4,260 HOUSES** INDEFINITELY

OR GENERATE **\$7.9 MILLION IN REVENUE** ANNUALLY

# RESOURCE SQUANDERING

## HIGHWAYS ARE WASTEFUL OF TIME, SPACE, AND NATURAL RESOURCES. IN PARTICULAR, THE WORLD'S FINITE PETROLEUM RESOURCES ARE SIGNIFICANTLY EXPENDED ON HIGHWAYS, FROM ASPHALT ROAD SURFACES TO FUEL FOR VEHICLES.

THE ISSUE	HIGHWAYS	RAY C. ANDERSON MEMORIAL HIGHWAY
<p><b>MAINTENANCE &amp; CONGESTION</b></p> <p>Highways squander our time &amp; money through road operations &amp; maintenance requirements, traffic congestion and prolonged travel times to destinations.</p> <p>How can highways be re-imagined so that they are free from intensive maintenance while also better serving their users with less traffic delays?</p>	<p><b>\$29 BILLION</b> SPENT BY THE U.S. IN ROAD MAINTENANCE DURING 2011</p> <p><b>5.5 BILLION</b> HOURS COLLECTIVELY LOST IN THE U.S. DUE TO TRAFFIC DELAYS ANNUALLY</p>	<p><b>\$105 MILLION</b> TO ADD ANOTHER LANE OF TRAFFIC TO THE 16 MILE STRETCH OF HIGHWAY</p> <p><b>\$37.6 MILLION</b> WORTH OF FUEL IS SPENT ON THE 16 MILE STRETCH OF HIGHWAY ANNUALLY</p>
<p><b>ENERGY &amp; RESOURCES</b></p> <p>Highways squander natural resources through over utilization of non-renewable sources of energy.</p> <p>The future fuel sources for transportation are slowly changing. What if highways not only provided the route of travel, but also the energy to move people and goods from point A to point B?</p>	<p><b>93%</b> OF ALL ENERGY USED IN TRANSPORTATION IS PROVIDED BY FOSSIL FUELS</p> <p><b>67%</b> OF ALL PETROLEUM CONSUMED BY THE U.S. IS IN THE TRANSPORTATION SECTOR</p>	<p><b>9.24 MILLION</b> GALLONS OF FUEL ARE BURNED ON THE 16 MILE STRETCH OF HIGHWAY ANNUALLY</p> <p><b>3.2%</b> OF THE TOTAL U.S. PETROLEUM CONSUMPTION IS USED IN GEORGIA</p>

Data sourced from the U.S. Department of Transportation, the Georgia Department of Transportation, the Federal Highway Administration, the 2012 Urban Mobility Report, the U.S. Energy Information Administration



## TIME & MONEY

Highways squander our time and money through road maintenance requirements, traffic congestion and the time it takes to travel to a destination.

**Road Maintenance** is a constant occurrence on interstate highways. This is both costly (over 14 billion dollars in taxes in one year) and a source of traffic congestion as well.

**Traffic & Congestion** waste numerous hours and millions of gallons of fuel annually. Inefficient roadways cause travel times to increase and ameliorate chances of motor vehicle accidents.

**THE AVERAGE COMMUTER LOSES \$818 DUE TO CONGESTION ANNUALLY. THIS NUMBER IS EXPECTED TO INCREASE TO \$1,232 IN 2020.**

## ENERGY

Highways squander natural resources through utilizing non-renewable sources of energy.

**Road Lighting** consumed 274 billion kWh of electricity annually or about 21% of the energy consumed by the commercial sector that includes commercial and institutional buildings as well as public streets and highways.

**Use of Non-renewable resources** released 2.1 billion tons of CO2 into the atmosphere by burning millions of gallons of fossil fuels and mixing millions of yards of asphalt road topping.

Typical asphalt road topping consists of coarse aggregates, bituminous mix that is cutback with petroleum distillates and laid at 175 - 225 degrees Fahrenheit.

**Asphalt roads last a maximum of 15-20 years.**

**THE AVERAGE COMMUTER LOSES \$818 DUE TO CONGESTION ANNUALLY, THIS NUMBER IS EXPECTED TO INCREASE TO \$1,232 IN 2020**

HIGHWAYS FUNDAMENTALLY  
ALTER AND DEGRADE NATURAL  
ECOSYSTEMS.

**HOW DOES WILDLIFE COPE  
WITH THE INTERSTATE  
HIGHWAY?**

# MOTOR VEHICLE COLLISIONS ARE THE NUMBER ONE THREAT TO WILDLIFE.

---

**CARNIVORES ARE PARTICULARLY VULNERABLE** WHEN CROSSING  
HIGHWAYS. WITH LESS CARNIVORES, **THE NATURAL ECOSYSTEMS**  
**BECOME UNBALANCED**  
**OVERPOPULATION CAN DESTROY HABITATS**  
AND CAUSE **SPECIES TO BECOME EXTINCT**

# HABITAT DEGRADATION

## HIGHWAYS FUNDAMENTALLY ALTER LANDSCAPES AND HABITATS. ECOSYSTEM AND HABITAT DEGRADATION HAVE HARMFUL EFFECTS ON BOTH HUMANS AND ANIMALS.

### THE ISSUE

#### ECOSYSTEMS & HABITATS

Highways degrade habitats and disrupt ecosystems through dividing and removing local flora and fauna.

Ecosystems function with the ability to replenish the resources that have been used. This is achieved through closed loop systems that do not require outside inputs to exist. A food chain is part of an ecosystem, where herbivores consume plants to survive and the carnivores prey on the herbivores; which, keeps populations in check and prevents deforestation of vegetation. How can highways become more sensitive to the natural environment by restoring lost ecosystems and maintaining existing ones?

### HIGHWAYS

**NO. 1**  
THREAT TO ANIMAL MORTALITY IS  
MOTOR VEHICLE COLLISIONS

**1 IN 100,000**  
SPECIES OF ORGANISMS BECOME  
EXTINCT EVERY YEAR DUE TO  
HUMANS

### RAY C. ANDERSON MEMORIAL HIGHWAY

**130**  
VEHICLE COLLISIONS WITH DEER IN  
TROUP COUNTY ANNUALLY

**6**  
ENDANGERED ANIMAL SPECIES  
RESIDE ALONG THE 16 MILE STRETCH  
OF HIGHWAY

Data sourced from the Federal Highway Administration and the U.S. Fish and Wildlife Service

## Dividing ecosystems results in fragmented and endangered species.

All species and habitats are important to maintain healthy ecosystems, which is the basis of sustainability.



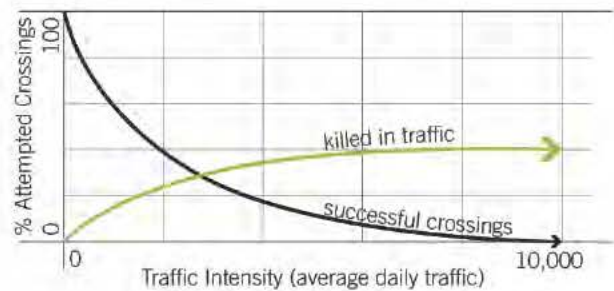
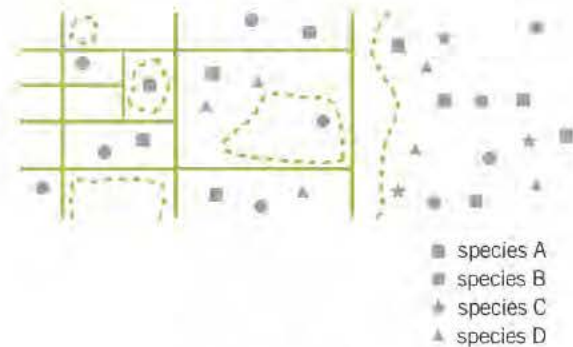
fragmentation

As more and more roads are added, habitats become increasingly fragmented. This limits species diversity and species health. As habitats get smaller, species that are isolated have a weaker gene pool and limited resources.



mortality

Traffic causes the deaths of many animals, whether they live in nearby habitats or are attempting to migrate. As the roads increase in size and traffic, the number of animal fatalities increases.



THE MAJORITY OF TRAFFIC  
FATALITIES OCCUR ON  
HIGHWAYS.

**WHAT CAN BE DONE TO  
PRESERVE WELFARE AND  
SAFETY ALONG HIGHWAYS?**

# ANNUAL PROPERTY DAMAGE FROM MOTOR VEHICLE ACCIDENTS **TOTALS MORE THAN \$277 BILLION IN THE US.**

---

THAT IS **\$873.81 PER PERSON** IN THE US.

THAT IS PROPORTIONALLY **\$60.3 MILLION** IN TROUP COUNTY ALONE.

\$60 MILLION CAN INSTALL AND OPERATE

**340 LIGHT POLES FOR 248 YEARS**

HIGHWAY LIGHTING **SAVES PROPERTY & SAVES LIVES**

# SAFETY HAZARDS

## HIGHWAYS HAVE BEEN ENGINEERED FOR THE SAFETY AND EFFICIENCY OF THE USER, YET THE MAJORITY OF FATAL VEHICULAR ACCIDENTS OCCUR ON THESE ROADWAYS.

THE ISSUE	HIGHWAYS	RAY C. ANDERSON MEMORIAL HIGHWAY
<p><b>BEHAVIORS</b></p> <p>Highways threaten life through influencing behaviors such as speeding, sleeping, reckless driving and loss of concentration.</p> <p>The way a highway is designed can affect its perception by motorists. Long straight stretches of road promote speeding and boredom. How can highway design be influenced to provide the right ratio of interest while keeping drivers focused on the task at hand?</p>	<p><b>5.3%</b> INCREASE OF ROADWAY FATALITIES IN THE U.S. SINCE 2011</p> <p><b>33,561</b> FATALITIES DUE TO MOTOR VEHICLE ACCIDENTS DURING 2012 IN THE U.S.</p>	<p><b>16</b> FATALITIES IN MOTOR VEHICLE ACCIDENTS ON THE 16 MILE STRETCH OF HIGHWAY IN 2006</p> <p><b>1,192</b> FATALITIES IN MOTOR VEHICLE ACCIDENTS DURING 2012 IN GEORGIA</p>
<p><b>ROAD CONDITIONS</b></p> <p>Highways threaten life by having dangerous driving conditions like road debris, standing water, insufficient lighting and inadequate information.</p> <p>A safe road is free of obstacles and is easily navigable to all its users. Ensuring that these qualities apply to all roads is another challenge. How can highways be designed to easily eliminate obstacles and provide consistent navigability with safety?</p>	<p><b>\$277 BILLION</b> WORTH OF PROPERTY DAMAGE ANNUALLY IN THE U.S. DUE TO MOTOR VEHICLE ACCIDENTS</p> <p><b>14%</b> OF ALL FATAL ACCIDENTS INVOLVING FIXED OBJECTS OCCUR ON HIGHWAYS</p>	<p><b>6,847</b> MOTOR VEHICLE ACCIDENTS IN TROUP COUNTY DURING 2006</p> <p><b>2,111</b> PEOPLE INJURED IN TROUP COUNTY MOTOR VEHICLE ACCIDENTS DURING 2006</p>

Data sourced from the U.S. Department of Transportation, the Georgia Department of Transportation, and the Federal Highway Administration



## BEHAVIORS

Highways threaten life through influencing behaviors such as speeding, sleeping, reckless driving and loss of concentration. Death rate on U.S. roads has decreased by nearly half since 1975, 2012 was the lowest it has ever been.

**Motor Vehicle Fatalities:** 65% were passenger vehicle occupants, 14% pedestrians, 14% motorcyclists, 2% bicyclists, 2% large truck occupants

**Excessive Speed** is a factor in 30% of all motor vehicle accidents on interstate highways, in 2012 10,219 people died from speed

**Alcohol Consumption** was a factor in 59% of fatal motor vehicle accidents

**Texting While Driving** is a factor in 13% of motor vehicle accidents with drivers ages 18-20.

**Internet Surfing While Driving** occurs at a rate of 1 in 5 drivers of all ages.

**In 2012, 33,561 people died in motor vehicle accidents costing \$277 billion dollars in the U.S.**

**IN 2012, 1,192 PEOPLE DIED IN MOTOR VEHICLE ACCIDENTS IN GEORGIA, THIS IS 12 PEOPLE FOR EVERY 100,000 PEOPLE**

## ROAD CONDITIONS

Highways threaten life through producing dangerous conditions consisting of traffic congestion, road debris and lack of light. The state of Georgia cleans the litter from the interstate highways 6 times a year and costs \$17 million dollars annually.

**Lack of Light** hides objects and potential hazards in the road way. 51% of motor vehicle crashes occur at night.

**Road Debris** from littering, automotive parts, improperly tied down objects on motor vehicles and loose vegetation cause drivers to avoid such objects, sometimes without sufficient area or time.

**Traffic Congestion** from accidents, road construction or heavy volume increases your chances of having an accident

**IN 2012, 14% OF ALL FATAL MOTOR VEHICLE CRASHES INVOLVING FIXED OBJECTS IN THE U.S. OCCURRED ON INTERSTATE HIGHWAYS.**

HIGHWAYS DISCONNECT  
COMMUNITIES AND STRIP  
PLACES OF CULTURE.

**WHAT ISSUES DOES A LACK  
OF SOCIAL INTERACTION  
CREATE?**

# MOST CARS TRAVEL ON THIS 16 MILE STRETCH OF HIGHWAY **WITHOUT STOPPING.**

---

THESE TRAVELERS DO **NOT CONTRIBUTE** TO THE **LOCAL ECONOMY**

TROUP COUNTY HAS TO DEAL WITH THEIR

**POLLUTION WITHOUT COMPENSATION**

FOR THOSE MOTORISTS THAT DO STOP, **MOST NEVER MAKE IT PAST**

**A GAS STATION OR FAST FOOD RESTAURANT**

HIGHWAYS & CITIES BECOME **STRANGERS, RARELY INTERACTING.**

# PLACE-LESSNESS

## HIGHWAYS DISCONNECT COMMUNITIES AND STRIP PLACES OF CULTURE. SOCIAL INTERACTIONS ARE CRITICAL TO OUR HAPPINESS AND ECONOMIC WELL-BEING.

### THE ISSUE

#### PLACE-LESSNESS

Highways dampen social interactions by disregarding local culture and contributing to the place-lessness of our communities.

Social interactions are key to instilling and maintaining culture. Efforts to become more efficient have put culture & place in the back seat. How can a highway reinvigorate local culture while maintaining efficient transportation?

### HIGHWAYS

**37.3/100**  
US RANK ON THE HAPPINESS INDEX CONDUCTED BY THE HAPPY PLANET INDEX

**34TH**  
IS GEORGIA'S RANK AMONG OTHER U.S. STATES IN HAPPINESS

### RAY C. ANDERSON MEMORIAL HIGHWAY

**MOST**  
CARS TRAVEL ON THE 16 MILE STRETCH OF HIGHWAY WITHOUT STOPPING

**A FEW**  
MOTORISTS MAKE IT PAST A GAS STATION OR FAST FOOD RESTAURANT

#### SELECTIVENESS

Highways dampen social interactions through prioritization of automotive users.

Everyone pays taxes but not everyone can use the highway. For those without the ability to travel on it, how can the highway be designed to allow equal access?

**MOST**  
CYCLISTS & PEDESTRIANS FEEL THREATENED BY MOTORISTS

**12%**  
OF ALL TRIPS IN THE U.S. ARE TRAVELED BY WALKING OR BICYCLING

**6%**  
OF TROUP COUNTY DOES NOT HAVE A REGISTERED MOTOR VEHICLE

**16%**  
OF TROUP COUNTY RESIDENTS CARPOOL TO WORK

Data sourced from the Happy Planet Happiness Index, the Georgia Department of Transportation, Wallet Hub, and the National Highway Traffic Safety Administration

# SELECTIVENESS

Highways prevent social interactions through by-passing local culture.

**Urban Sprawl** was influenced by automobile adoption, people moved away from the cities and the interstate highway allowed the cities to be avoided entirely.

**Social Interactions** between cities and the highway are strained and competing. Lost revenue from travelers slip out of the hands of the businesses in the cities causing decline.

**Exclusivity** of the interstate highway prevents people without a vehicle or access to the interstate highway from using it even though we all help to maintain the system.

**HIGHWAYS AFFECT SOCIAL INTERACTIONS THROUGH BEING SELECTIVE OF ITS USERS.**

# 3 | LOCAL CONTEXT



# A SMALL COMMUNITY WITH RICH HISTORY AND TREMENDOUS OPPORTUNITY

Troup County has always been a hub for trade and commerce. From the early days with Indian trading posts on Grayson's Trail to the major industries of the present era, location and direct routes of travel have provided Troup County an advantage. Between the cities of Columbus and West Point resides the natural fall line from the Piedmont to the southern plains. On the fall line the Chattahoochee River conform to the topography with water falls and is unnavigable for boats and barges. This made West Point the southern port for river transit from the north up to Atlanta; Columbus served as the northern port for river transit to the Gulf of Mexico. In 1847, the Atlanta LaGrange railroad was established, allowing for the movement of goods and people, significantly increasing commerce for LaGrange. The tracks would be extended to West Point in 1854, completing the Atlanta-West Point Railroad.

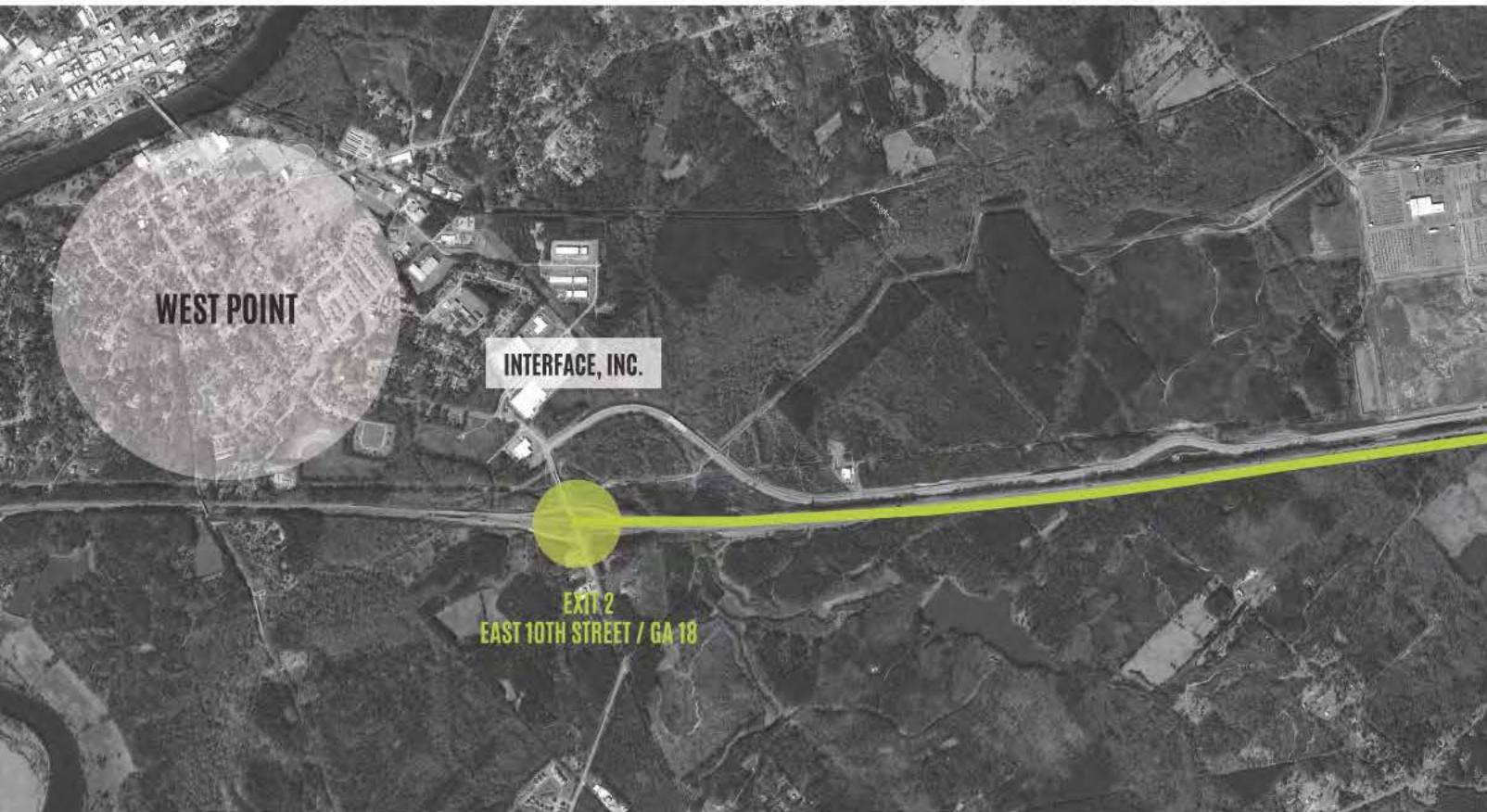
Despite the devastating effects of the Civil War to the south, reconstruction allowed Troup County to rebuild with new technology that allowed river travel to be more reliable and safer as well. By the 1890s, improved rails shadowed the river as a transportation conduit and steamboat stops dwindled on this section of the Chattahoochee River. Droughts and agricultural threats hit Georgian economy in the early 20th century, but World War Two industrialization brought prosperity to Troup County. This would last until the 1960s when industry sought to maximize project by utilizing automation, relocating jobs overseas to take advantage of low-cost labor. This change increased unemployment and resulted in a decline in population. In the 1960s and 1970s, many factories and mills in Troup County sought efficiency through automation and cheap labor, cutting employment rates. In 1977, Interstate 85 connected Atlanta to Alabama and crossed through Troup County. The advent of the interstate highway spurred economic growth in the late 1970s, and has influenced continuous growth. In 2006, Kia Motors began building their automotive manufacturing plant, bringing jobs as well as cultural influences.

## THE STUDY AREA IN CONTEXT

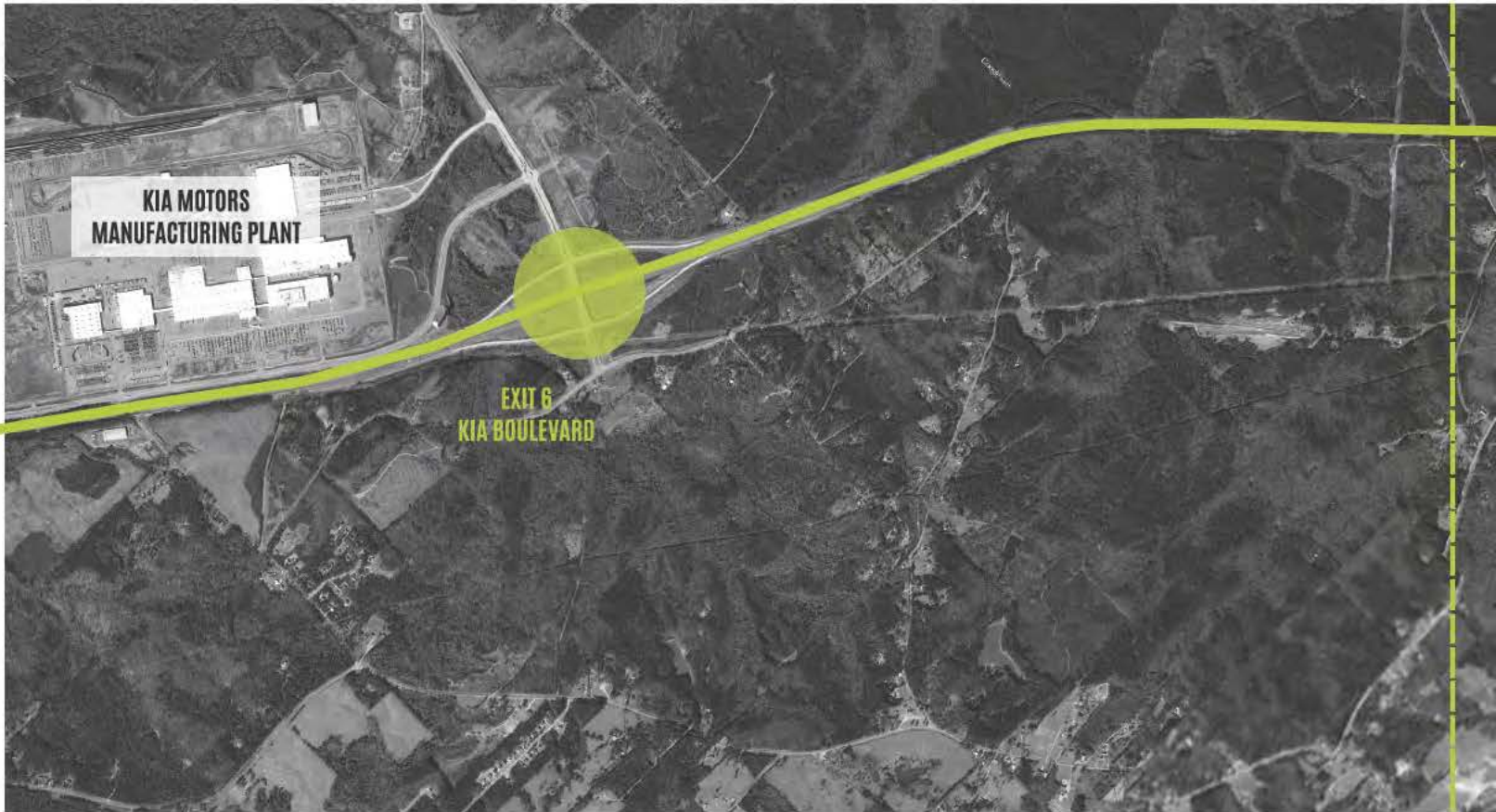
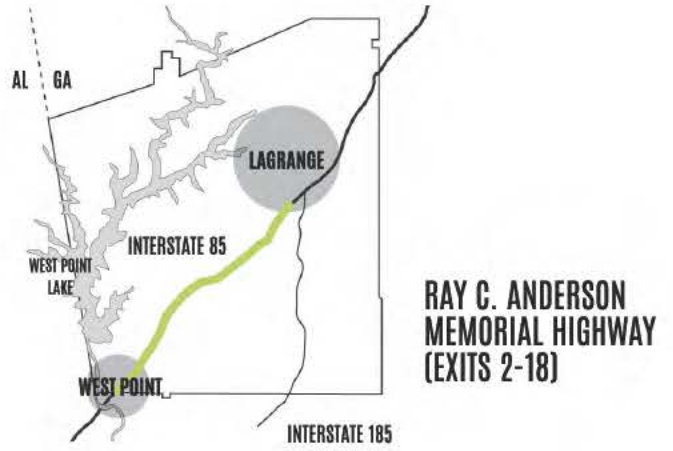
# THE RAY C. ANDERSON MEMORIAL HIGHWAY MILES 1-6



THE STATE OF  
GEORGIA

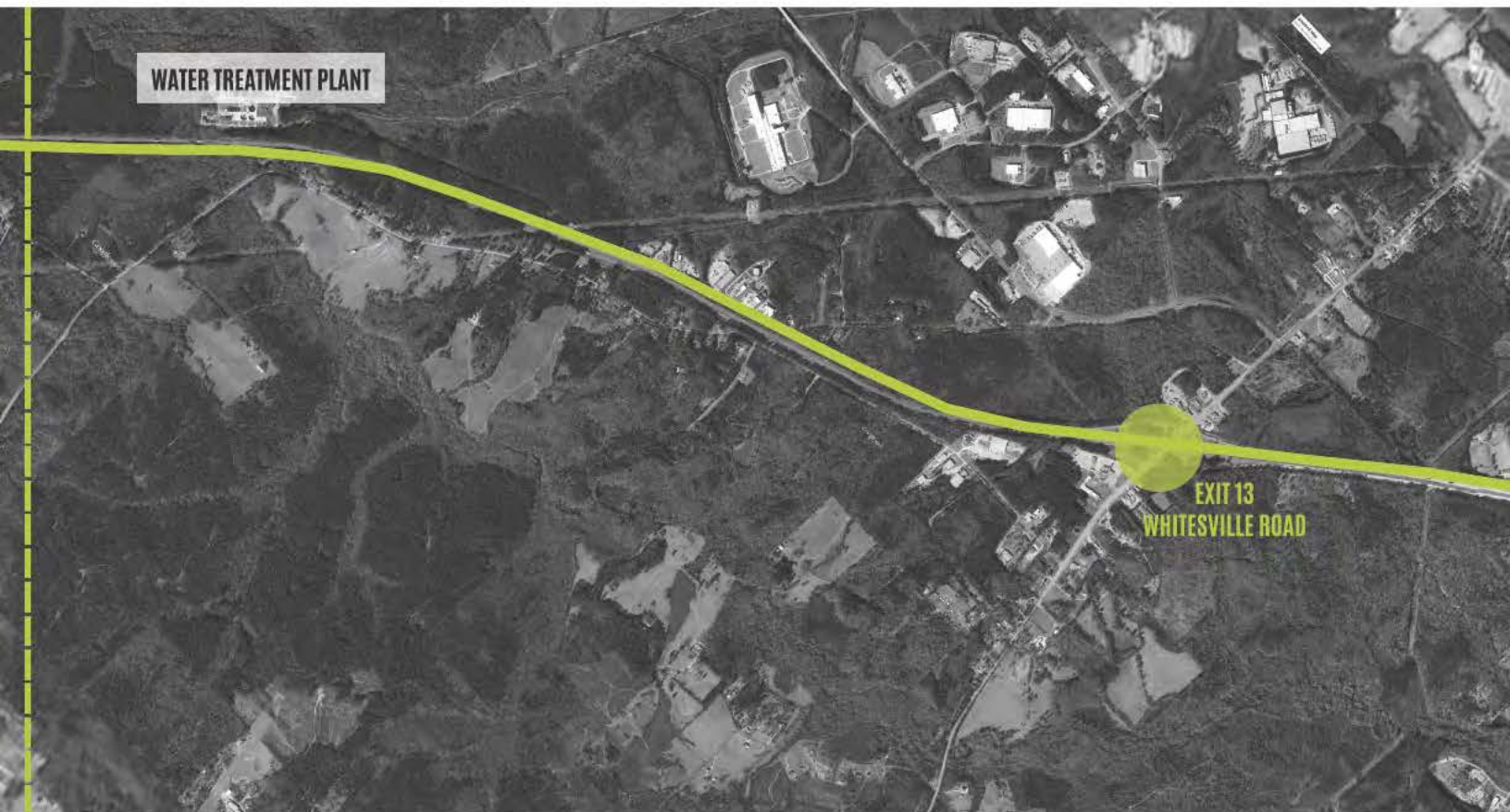






## THE STUDY AREA IN CONTEXT

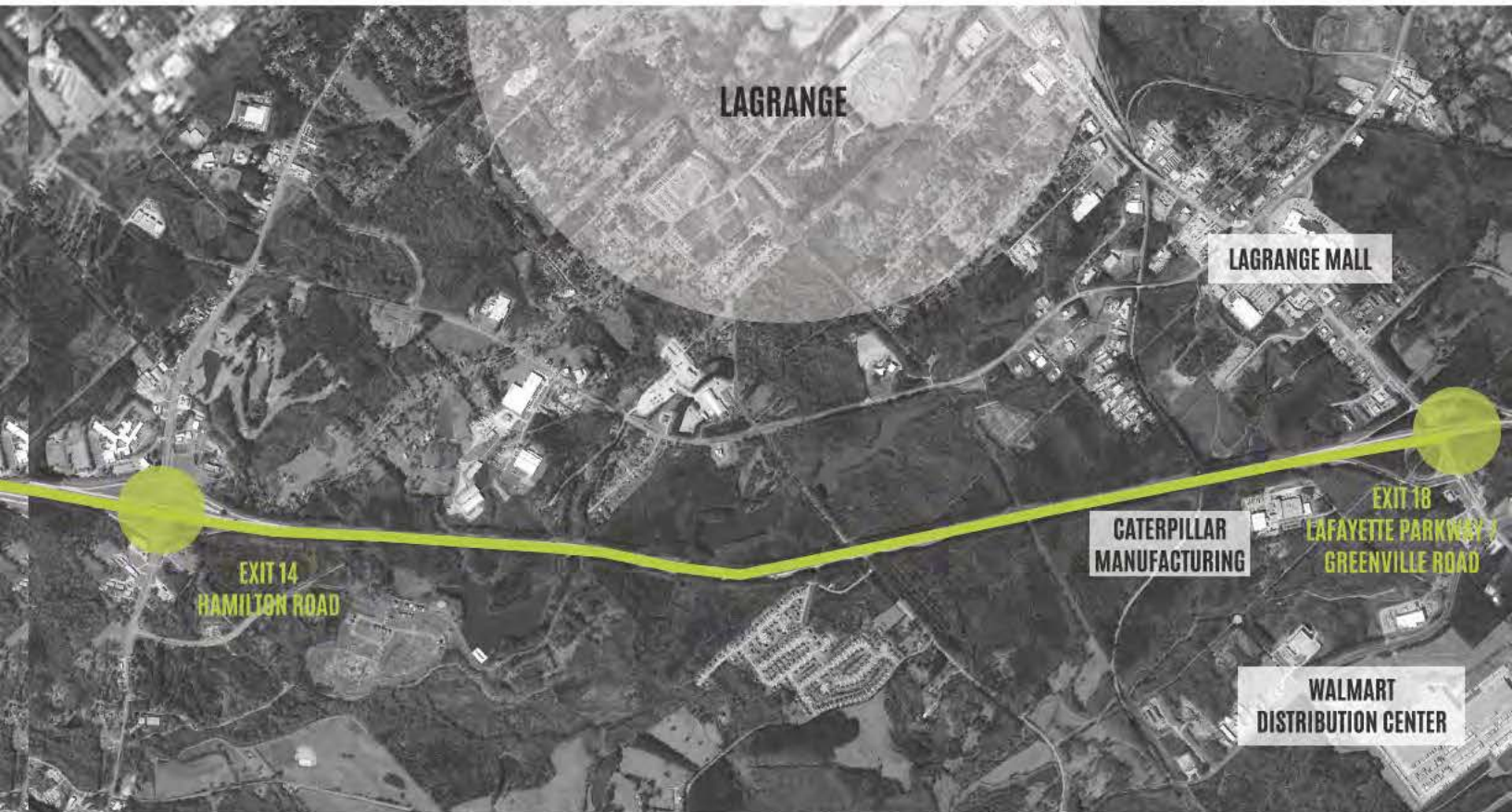
# THE RAY C. ANDERSON MEMORIAL HIGHWAY MILES 7-16



# TROUP COUNTY IS A SMALL PLACE WITH BIG INDUSTRY AND AN ABUNDANCE OF OPPORTUNITIES.

**\$2,470,774,000**  
IN MANUFACTURER SHIPMENTS IN  
TROUP COUNTY IN 2007

Troup County was settled in 1827 with LaGrange incorporated as the county seat. After the turn of the century, Troup County was a center for the textile industry, a strong economic force that has continued to sustain the area. The county is now home to a variety of industries, primarily manufacturing and distribution, and continues to grow this commerce. This industry demanded better transportation, and Interstate 85 was constructed to better enable the transport of the various goods from Troup County. Not only is the county within close proximity to some of the fastest growing cities in the southeast, but it is also within a network of railroads and interstate highways and near an international airport. Notably, KIA Motors located a manufacturing plant in West Point in 2009 and is a large employer of nearby residents. Shipments of new automobiles reinforces the importance of railroad and highway transportation infrastructures.



## GEORGIA PIEDMONT

The Georgia Piedmont stretches through the middle of Georgia; beginning from the southern most slopes of the Appalachian Mountains and ending at the Fall Line; which, marks the beginning of the Coastal Plains that roll to the Atlantic Ocean.

The Georgia Piedmont is subdivided into 5 smaller eco-regions. Troup County is located in the Southern Outer Piedmont; which, is defined by dissected, irregular plains with primarily Pine-based forest mixed with a few hardwoods. The streams of this region are typically low to moderate in gradient with cobble, gravel, and sandy substrates.

**THE LOCATION OF TROUP COUNTY NEAR THE FALL LINE AND WITHIN THE PIEDMONT IS AN IDEAL LOCATION FOR TRADING.**

### MOUNTAIN GEORGIA

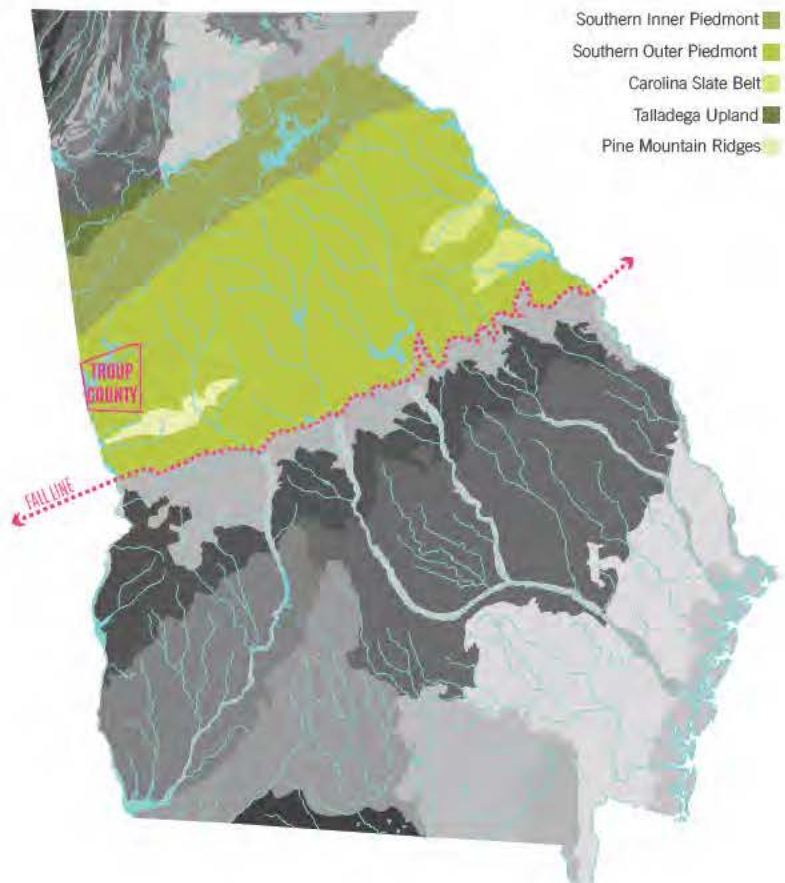
The area of Georgia with the highest elevation and contains the tail end of the Appalachian Mountain Chain.

### THE FALL LINE

The Fall Line is a 20 mile geological boundary that separates two ecosystems and marks the point where rivers become much narrower, making navigation more difficult.

### COASTAL GEORGIA

The area of Georgia that slopes gently to the Atlantic Ocean. It is a very flat, very hot region of Georgia.



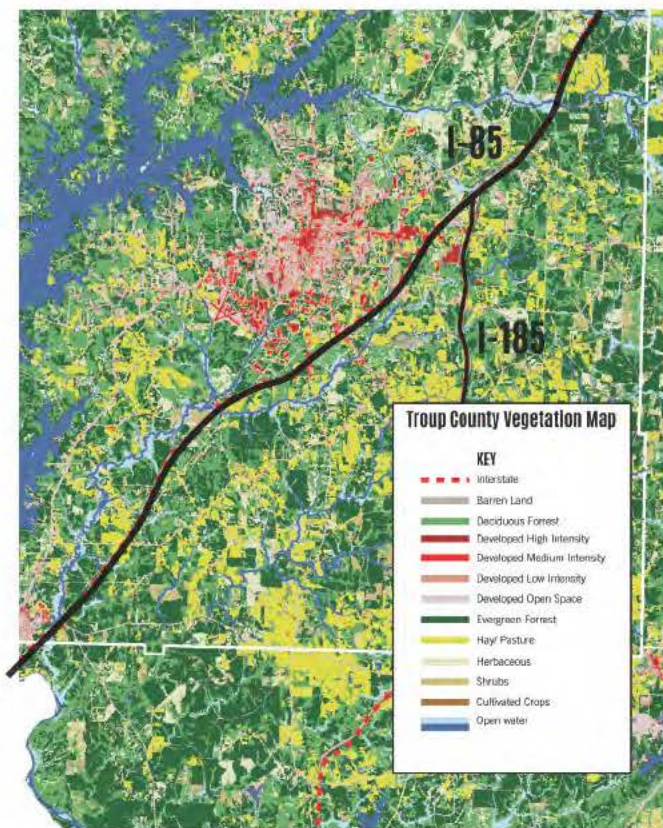
# HABITATS AND VEGETATION

## CURRENT SITUATION

Interstate highways have a major impact on ecological systems. They affect physical topography, contaminate the soil, divide and increase the mortality of the natural fauna and flora.

Collisions with motor vehicles are sometimes the number one threat to a species living near a roadway. Once the numbers of natural predators, like cougars, are reduced, populations of their prey, like deer, skyrocket and cause an increased danger to motorists by being on the roads.

Once an animal dies on the road, other scavenging animals will be drawn to it, putting more animals, and consequently, humans, at risk.

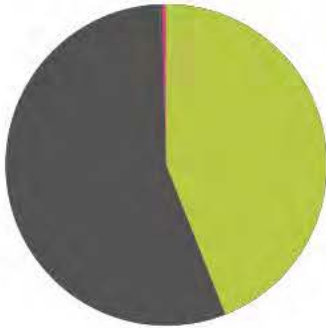


## ENDANGERED SPECIES ALONG THE RAY C. ANDERSON MEMORIAL HIGHWAY



# LAND

The State of GA is 59,430 sq mi



**0.4%** of GA is covered in roads and interstates

**44%** of the flora and fauna are affected by roads

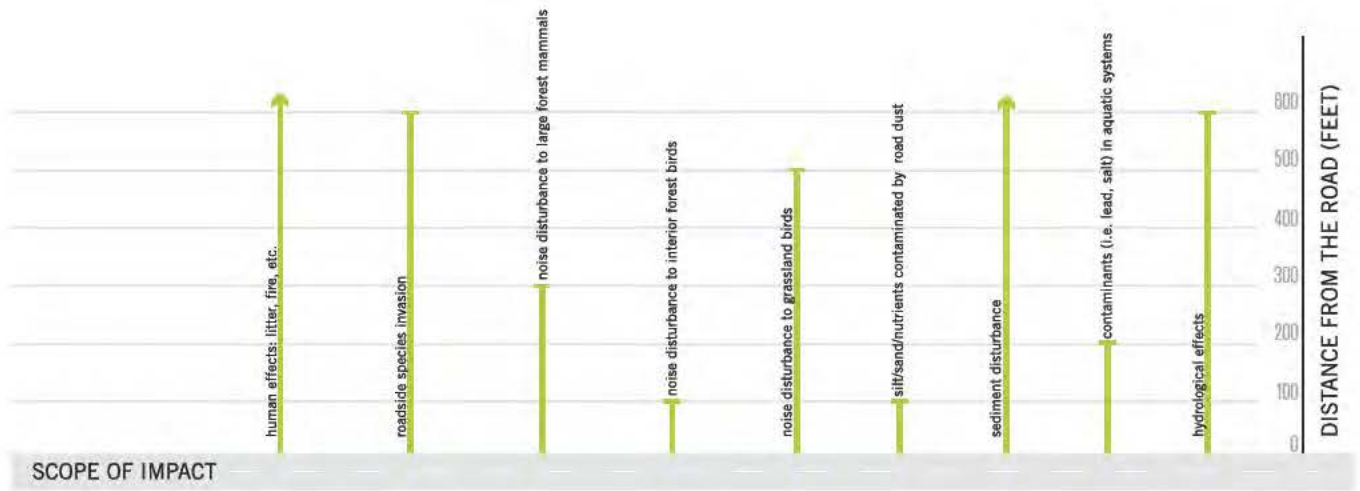
**The 0.4% of the Georgia footprint that are roads affect 44% of the flora and fauna.**

## BEFORE INTERSTATE 85



## AFTER INTERSTATE 85





**SOUTHERN OUTER PIEDMONT - LAYERS**

- Loblolly & Short-Leaf Pine Forests
- Deep Saprolite & Red, Clayey Soils
- Metamorphic & Igneous Rocks  
(Typically Granite & Schist)



# USE AND REGULATION

Preservation of the aquifers is vital in maintaining all other sources of surface water on the planet. Aquifers are our main source of fresh water, with a small percentage also coming from melting ice caps. Not all aquifers are replenishable, which means at a point not too far in the future, more and more will start to become depleted. Depletion of aquifers can also result in the collapse of the land above, leading to the sinking of building foundations, roads, etc., with which comes many other issues. Needless to say, it is important that we not forget about our local aquifers, because they ultimately sustain life on earth.

Troup County is within the Middle Chattahoochee-Lake Harding Watershed - and the Chattahoochee River is the main river in Troup County. Long Cane Creek branches off as a tributary, watering the adjacent terrain. Troup County lies within the Middle Chattahoochee-Lake Harding Watershed. Water runoff drains into the Chattahoochee river and then into the Gulf of Mexico.

With the construction of Interstate 85 in the 1950s, issues regarding water pollution began to arise. Before the 1970s, there existed almost no aquatic life in the Chattahoochee River due to the amount of untreated wastewater being dumped into it by municipal and industrial facilities. The environmental movement during the 1970s, however, led to the regulation of such acts of pollution and the Environmental Protection Agency has passed multiple laws over the years to protect Georgia's water sources, with the most notable being the Clean Water Act of 1972. Today, the Chattahoochee Riverkeeper works to preserve the aquatic habitats that have since been restored. Along with the Clean Water Act, the laws that affect the waterways within the Middle Chattahoochee watershed include the following:

## The Georgia Water Quality Control Act

"The water quality standards include a designated use for each water body, which describes and defines the maximum levels of pollutants that may exist in the water, and an "anti-degradation" statement, which prohibits high quality waters from being degraded."

## Georgia's Erosion and Sedimentation Control Act

This act was "passed in 1975 with the goal of implementing a statewide program to protect Georgia's waters from soil erosion and sediment deposition, primarily originating from land disturbing activities (clearing, grading, and other construction-related activities)."

## Metropolitan River Protection Act

Passed in 1973, this act's main purpose was "to provide special protection to the Chattahoochee River based on the growing threats to the quality of this drinking water supply source."

### GEORGIA AQUIFERS



- Paleozoic Rock Aquifer
- Troup County
- Crystallin-Rock Aquifer
- Cretaceous Aquifer
- Floridian Aquifer

### WATERSHED

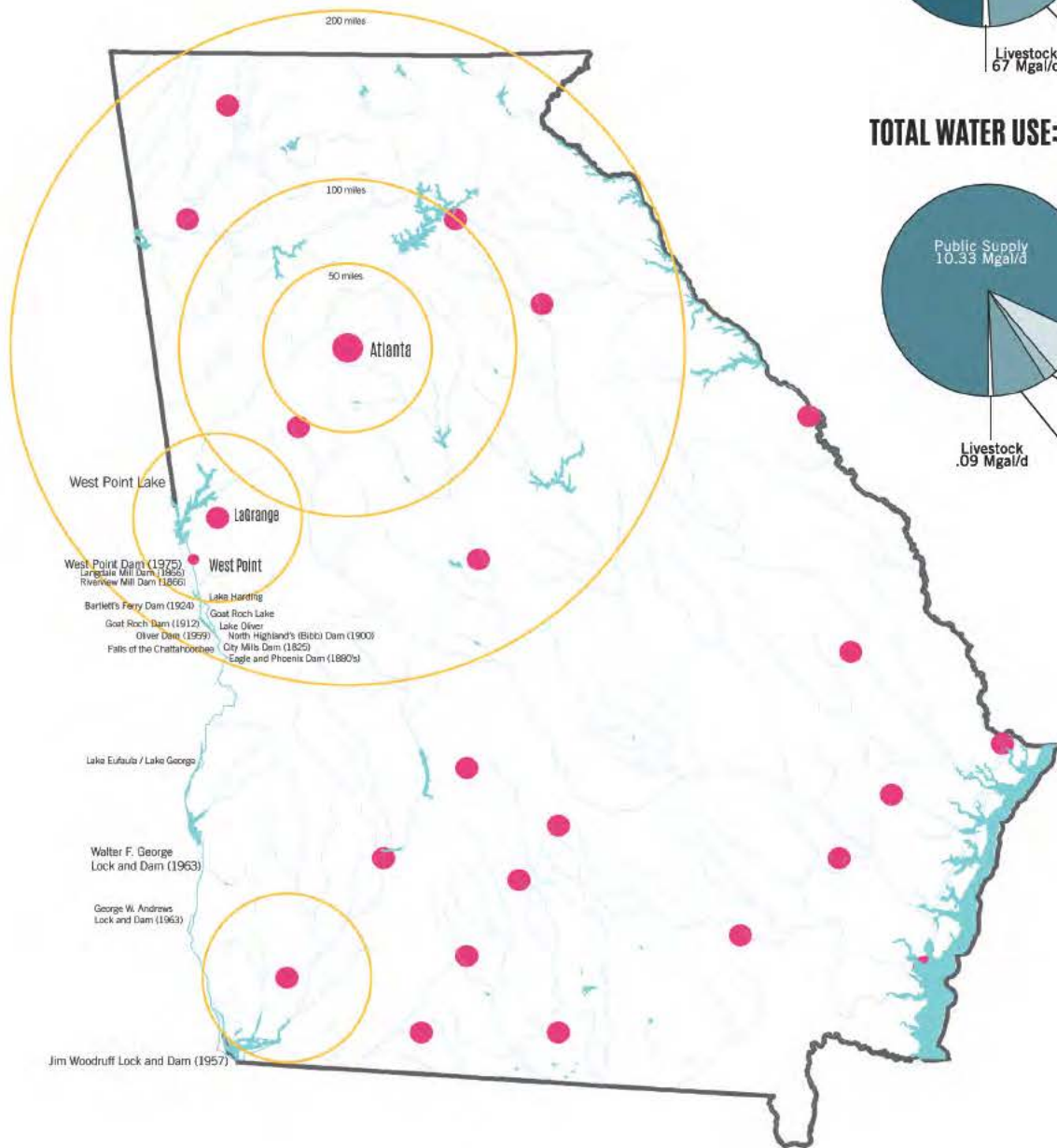


- Middle Chattahoochee - Lake Harding Watershed (extends into Alabama)

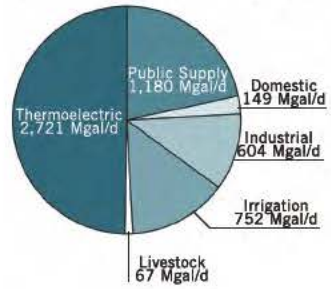


# WATER FEATURES & URBAN CENTERS

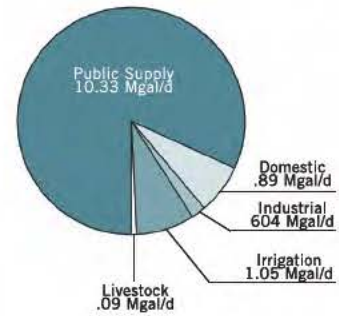
-  State Boundary
-  Water Features
-  Urban Centers
-  Distance Radius



## TOTAL WATER USE: GEORGIA



## TOTAL WATER USE: TROUP CO.



# RIVER DAMS

## WEST POINT LAKE

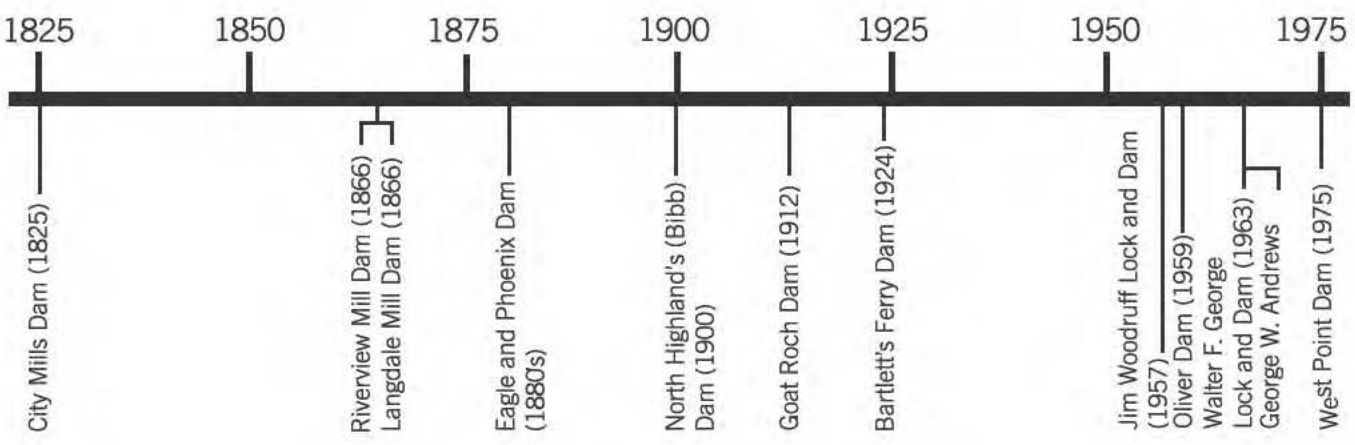
The Chattahoochee River valley is prone to flooding during times of great rainfall. West Point, being on the river, suffered flooding from the beginning. To combat the flooding at times, West Point raised all of its sidewalks five feet above the ground.

In 1961 Troup County experienced a devastating flood. The damage finally influenced Congress to let the Army Core of Engineers to design a hydroelectric dam that would prevent flooding and create electricity at the same time. In 1975, the project was completed. The dam also created a small lake that the community could use for recreation.



FORMING WEST POINT LAKE, 1974

### TIMELINE OF DAMS ON THE CHATTAHOOCHEE





**WEST POINT DAM, 2014**



**WEST POINT DAM, 1975**

# LAGRANGE & WEST POINT

Troup County has two cities, LaGrange and West Point, along with a smaller town Hogansville to the northeast. West Point was established in 1831 along the Chattahoochee River as a port city. LaGrange grew from a settlement along Grayson's Indian trail in 1824. Hogansville was established in 1870 at the crossroads of U.S. highway 100 and the Atlanta-Westpoint Railroad.

LaGrange is the seat of the Troup County and has the largest population. Both West Point and LaGrange were burned down during the Civil War then rebuilt after. Both cities expanded during times of prosperity and made it through times of hardship. LaGrange was the result of the Muscogee Indians

ceding the land to the Englishmen. It is located in the middle of Troup county, and it thrived in throughout the 19th century from mills located throughout Troup County creating a stable economic town.

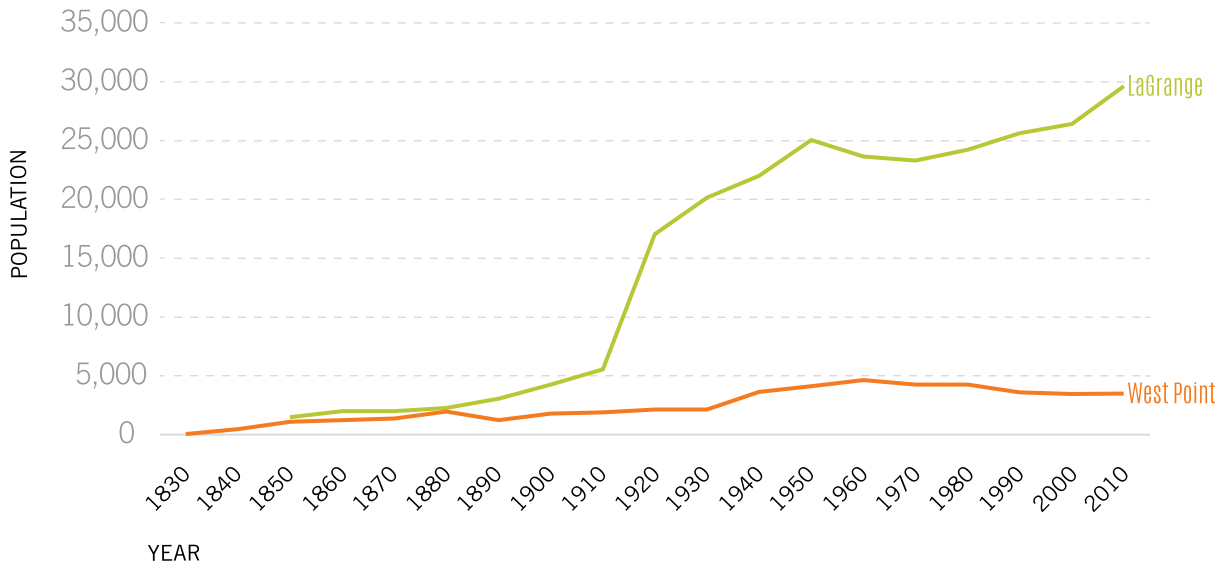
West Point was a trading post for the Indians in the 1800s. Soon after it was ceded to the English, and the town began to form around the Chattahoochee River. The river supplied rich soils for farm land. In 1849, the extension of the Atlanta and LaGrange Railroad was constructed in West Point boosting the economy.

## LAGRANGE, GEORGIA



Downtown LaGrange, 1928: Photo by Stanley Hutchinson

## City Population Growth in Troup County from 1790 - 2010



## WEST POINT, GEORGIA



Downtown West Point, 1920

# INDUSTRY & COMMERCE

From the beginning, Troup County has been a place of commerce. Starting with Indian trading posts along Grayson's Trail to commerce along the Chattahoochee River and Atlanta-West Point railway. After the British found that cotton grew very well in Georgia, Troup County embraced this new industry with mills and plantations.

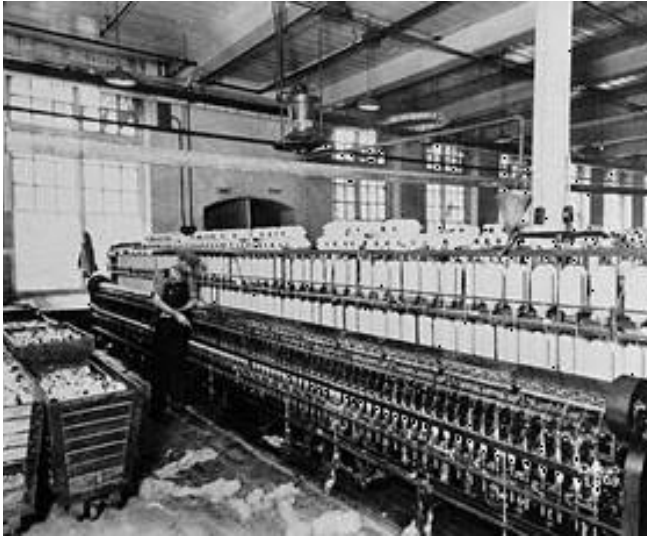
In the 1910s, the boll weevil destroyed the Georgia cotton industry. This sent Georgia and Troup County into an early depression that would only be eradicated with the industrialization for the WWII war effort in the 1940s. After the war, many companies established factories and offices in Georgia providing many local residents with jobs and new opportunities. In the 1960s, the threat of automation

and low-cost labor overseas led many companies to lay off employees.

However, the construction of the interstate highway in the late 1970s brought new industry and commerce began to once again grow. In 2003, Troup County's largest mill, West Point Stevens, closed its doors, putting many people out of work and threatening their livelihood. In 2006, Kia Motors agreed to build a manufacturing plant in West Point; which, created many new jobs and continues to keep the local economy strong.

## COTTON MILLS, 1900





**COTTON MILLS, 1900**

Five large rail lines owned the Atlanta Terminal, one of which was the Atlanta-West Point. The Montgomery-West Point line converged with the Atlanta-West Point where barges could no longer travel up the Chattahoochee.

Commerce heavily depended on these trade routes and Sherman took full advantage of this vulnerability.

During the Civil War, Sherman burned miles of this rail road, starting in Atlanta and then outside West Point, isolating the troops from gaining supplies.

Post war, the route was reconstructed following a time of heavy industry. The lines loose passengers after the depression era, never to return after.

Today, the rail is used only for commercial freight and both Interface Carpet and KIA use the rail daily for transport of goods.



**COTTON MILLS, 1910**

## RAILROADS

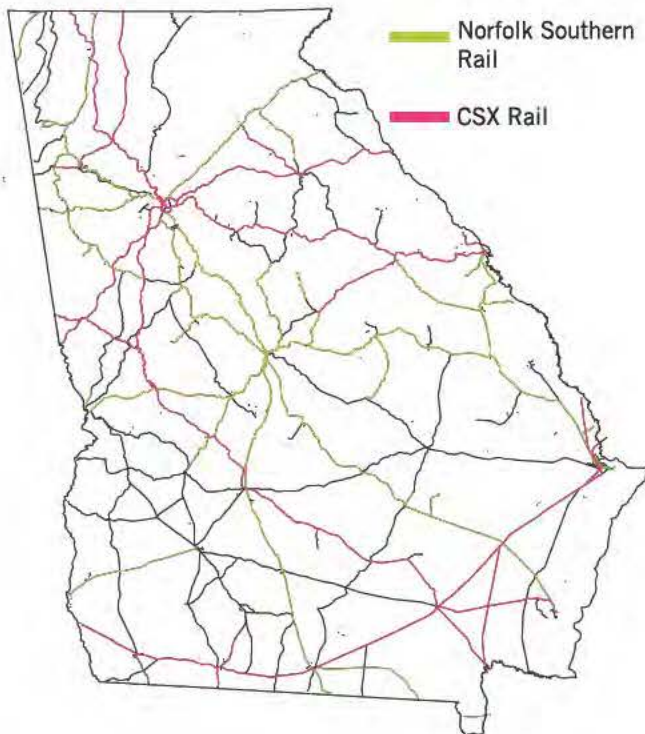
The first railroad in Troup County was the Atlanta-LaGrange line that was finished in 1847. Another section extending the tracks to West Point would be finished in 1854. This extension would also connect the system to Montgomery, AL.

The railroads provided industry with an efficient means to move product and for people to travel. In the 1900s the trains started to move into decline with the adoption of the automobile and eventually the interstate highway.

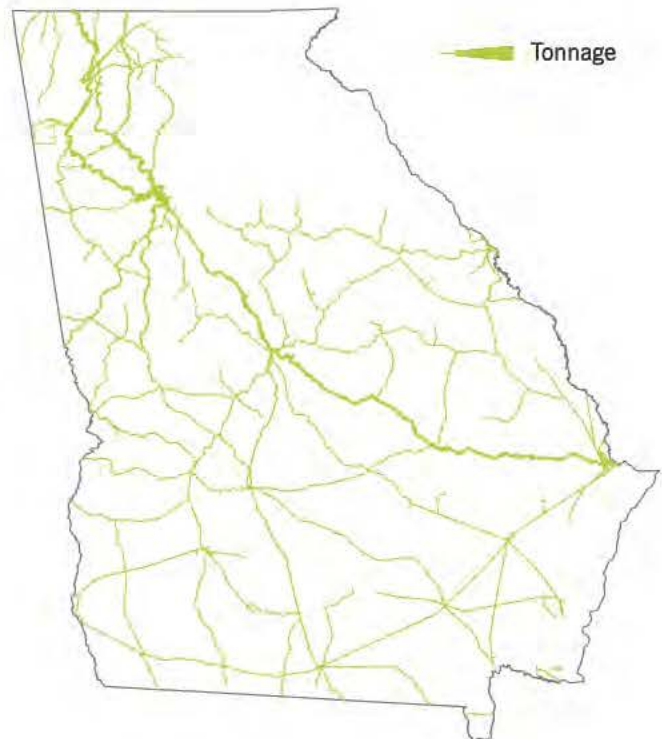
**“Last year, STX completed an expansion project on Kia’s rail line, which enables the automaker to produce and ship out more vehicles... Through the project, STX reinvested \$180,000 into the local community for services such as housing, food, and fuel.”**

-- Progressive Railroading

### Commercial Rails

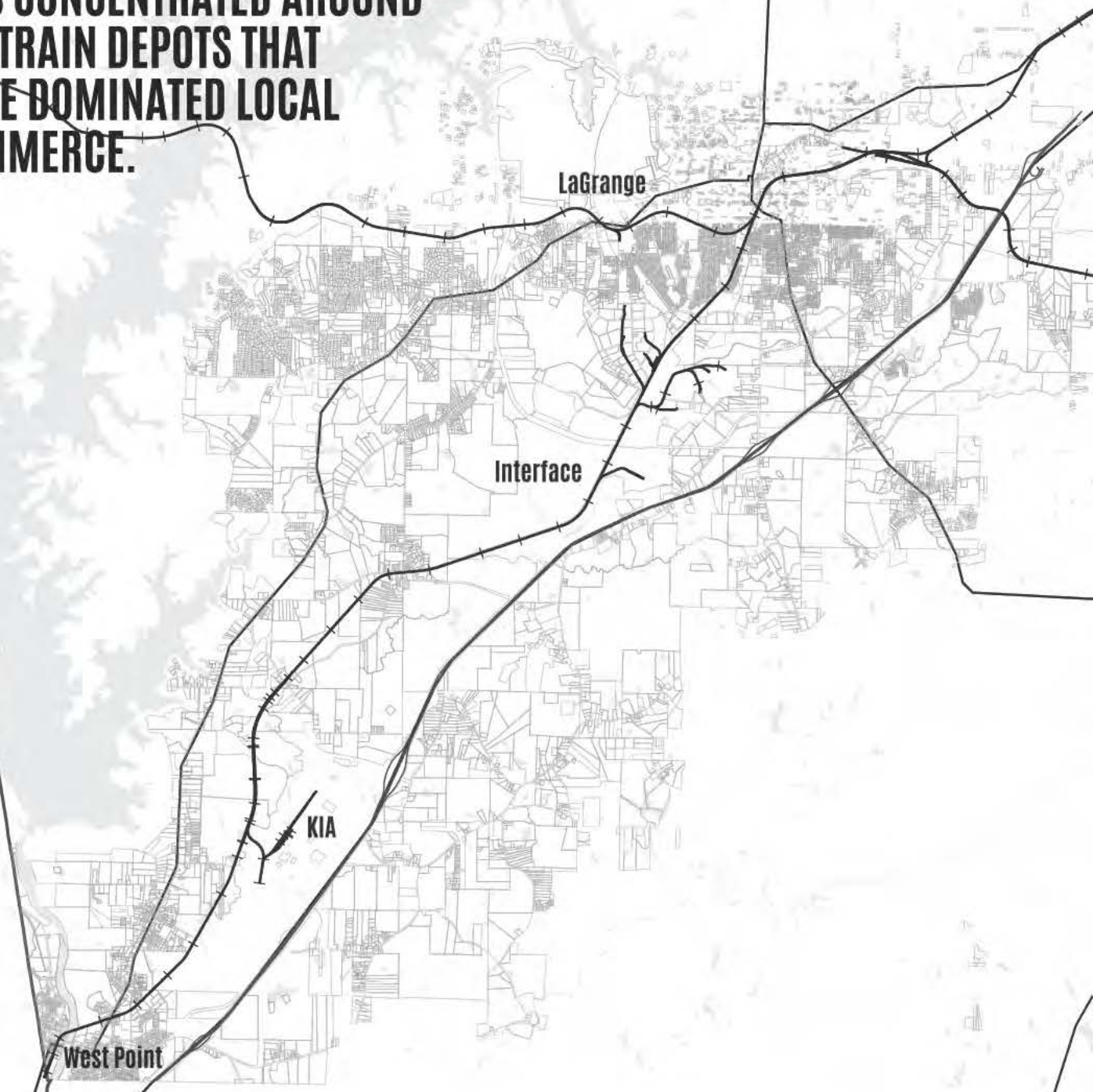


### Freight Mass





**TOWN GROWTH AND DENSITY  
WAS CONCENTRATED AROUND  
THE TRAIN DEPOTS THAT  
ONCE DOMINATED LOCAL  
COMMERCE.**



# 4 | VISION FOR THE FUTURE



# THE POTENTIAL FOR HIGHWAYS IS FAR GREATER THAN SIMPLY THE CONDUIT OF CARS & TRUCKS THEY HAVE BECOME THUS FAR

Highways may have problems associated with them but they have allowed us to grow our economy, allowed goods and trade to occur, allowed people to be mobile, connected places far and near. In essence, they are the backbone of our infrastructure and we cannot get rid of them.

In their current state, we should be concerned about the future of our infrastructure systems and how they are conceived and built. However, challenges provide room for distinct and unique solutions. We can collectively imagine a better future. This begins with setting goals about how to improve our highways to serve communities and our environments better. Our vision for highways suggests a global series of solutions and tactics that can be employed locally, on any corridor worldwide. This is the path to the highway of the future, highways that will seek to understand, restore and positively influence their context to enhance our quality of life.

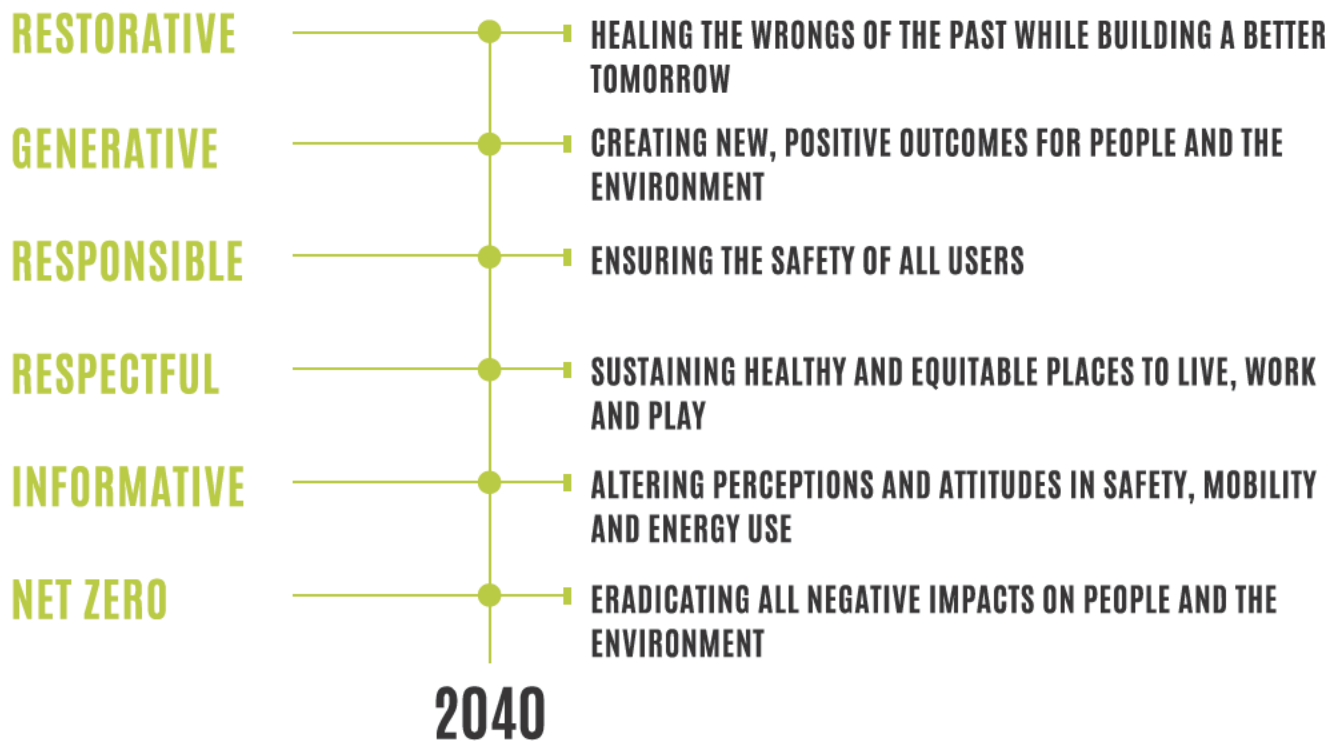
## THE GOAL

# IT IS THE ASPIRATION OF MISSION ZERO CORRIDOR TO USE HIGHWAYS AS A TOOL FOR CHANGE.

When we look at the legacy that Ray Anderson left for us, we can see a vision, a powerful vision that changed his business, Interface, and his entire industry. Mission Zero strives to bring human activities and natural systems into a balance on which future generations can thrive.







The Mission Zero Corridor allows us to see highways, and infrastructure in general, through Ray Anderson's lens. A lens that can see highways operating at their full potential, well beyond the prevalent view that highways are simply conduits of cars and trucks.

Mission Zero Corridor will be the first sustainable highway, serving as a replicable model worldwide through a focus on people, place and technology. The sustainable highway will be restorative, generative, responsible, respectful, informative and net zero.



**MISSION ZERO 2020 CREATED A FRAMEWORK THAT CATALYZED POWERFUL CHANGES IN THE BUSINESS INDUSTRY AT A GLOBAL SCALE.**

**MISSION ZERO CORRIDOR IS A FRAMEWORK FOR HIGHWAYS TO REACH THE SAME GOALS.**

<b>PROBLEM</b>		<b>PATH</b>
<b>ENVIRONMENTAL POLLUTION</b>	→	 <b>POLLUTION REMEDIATION</b>
<b>RESOURCE SQUANDERING</b>	→	 <b>RESOURCE EFFICIENCY</b>
<b>HABITAT DEGRADATION</b>	→	 <b>WILDLIFE CONSERVATION</b>
<b>SAFETY HAZARDS</b>	→	 <b>LIFE SAFETY</b>
<b>SOCIAL RAMIFICATIONS</b>	→	 <b>CULTURAL EXCHANGE</b>
<b>LACK OF AWARENESS</b>	→	 <b>CHANGING ATTITUDES</b>

# A VISION TOWARDS THE HIGHWAY OF THE FUTURE.

Highways should not be merely connectors of distant places, they should reconnect the very systems they have fragmented – the social and ecological frameworks that they sit within. In the future, highways will not only be more efficient and safer, they will also play a vital role to unify and improve our communities and our natural environments.

## Global Vision This Vision Can Be Applied to Highways Everywhere

---

### Unify

#### Reconnecting people and natural systems

Highways will heal the wrongs of the past while building a better tomorrow through the restoration of social and ecological systems. The highway of the future will, mile by mile, reconnect, enhance and restore our existing communities to stimulate cultural exchange, economic

productivity and local identity. The highway of the future will, mile by mile, replenish and revive our natural habitats, replant native varieties and generate new ecosystems to safeguard our plant and animal species.

### Restore

#### Achieving net-zero

Highways will eradicate all negative impacts on people and the environment through corridor wide tactical solutions. The highway of the future will, mile by mile, produce more energy than it consumes, and provide for the infrastructure of sustainable transportation to secure the longevity of our

resources. The highway of the future will, mile by mile, sequester all forms of pollution it creates, and reuse all of the resources it interacts with to ensure the survival of our ecosystems.

### Catalyze

#### Catalyzing local and global change

Highways will create new, positive impacts for people and the environment by promoting responsible development. The highway of the future will, mile by mile, allow for new development patterns that cultivate reciprocity between natural, social and built environments to ensure responsible

growth patterns. The highway of the future will, mile by mile create vital connections within communities to turn space into place.

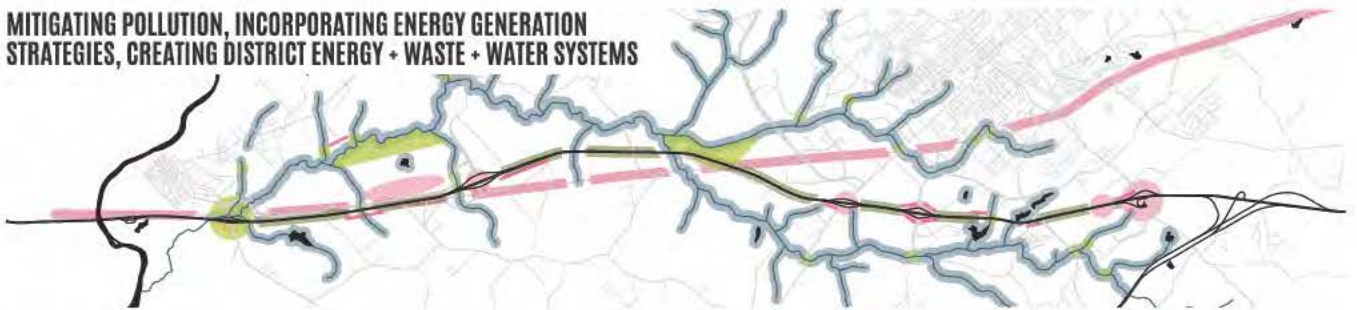
**WE STRIVE TO ACHIEVE THIS  
VISION BY WEAVING DYNAMIC  
RELATIONSHIPS BETWEEN THE  
INFRASTRUCTURAL, ECOLOGICAL  
AND SOCIAL SYSTEMS.**

## **Local Vision** **Applying The Global Vision To This Corridor**

**CREEK RESTORATION, PROTECTING HABITAT, RECONNECTING FRAGMENTED AREAS,  
DEVELOPING PARKS & GREENSPACES, INCORPORATING WILDLIFE CROSSINGS**



**MITIGATING POLLUTION, INCORPORATING ENERGY GENERATION  
STRATEGIES, CREATING DISTRICT ENERGY + WASTE + WATER SYSTEMS**



**IDENTIFYING NON-SENSITIVE DEVELOPABLE PARCELS, REPURPOSING WASTE SPACE,  
CREATING DISTRICT NETWORKS, ENHANCING CORRIDORS, CREATING IDENTITY & PLACE**



# GLOBAL TACTICS

**THE APPLIED FRAMEWORK SHOULD BE RESPONSIVE TO LOCAL ENVIRONMENTS. EXAMPLE TACTICS WILL WORK BEST WHEN CONTEXTUALLY APPLIED.**

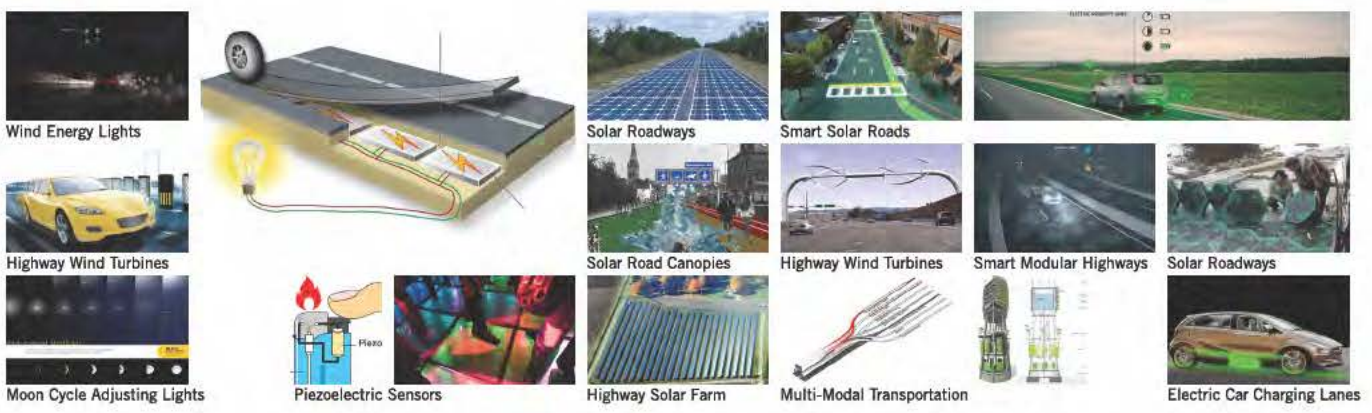
The Mission Zero Corridor exemplifies how a highway can achieve sustainability by fully addressing every area of the designed framework. The application of this framework can be across highways and road networks globally. This catalog of global tactics can assist in efforts to address the various framework categories.

These pages contain example technologies developed by designers, scientists, engineers, and others around the world. We do not take credit for these ideas, but want to showcase the possibilities that may exist for furthering the Mission Zero Corridor goals. More information on these sources can be found on the Georgia Conservancy website at [www.gaconservancy.org](http://www.gaconservancy.org).

## Pollution Remediation



## Resource Efficiency







## Wildlife Conservation



Wildlife bridges



Park Infill



Interstate Planting



Habitat for Urban Wildlife



Ningbo Eco-Corridor



Earth Berms



Wildlife Detectors



Highway Storm Water Filter



Eco Storm Water Runoff



Wildlife Reflectors



Repurposed Billboards



Interstate Landscapes



Smart Landscaping



## Life Safety



Smart Lane Markers



Driverless Cars



Volvo Road Magnets



Textured Ground Markers



Changing Road Appearance



Glowing Traffic Lines



Road Train



Interactive Ambient Light



Textured Asphalt



Typical Guardrail



Information Systems



Elevated Walkways



Pedestrian Cross Walk



## Cultural Exchange



Park + Jog



Art Installations



ChonGae Canal Restoration



Bridging the Divide



Velo-City



Green Walls



Art Infrastructure



Smart Billboards



Art Installations

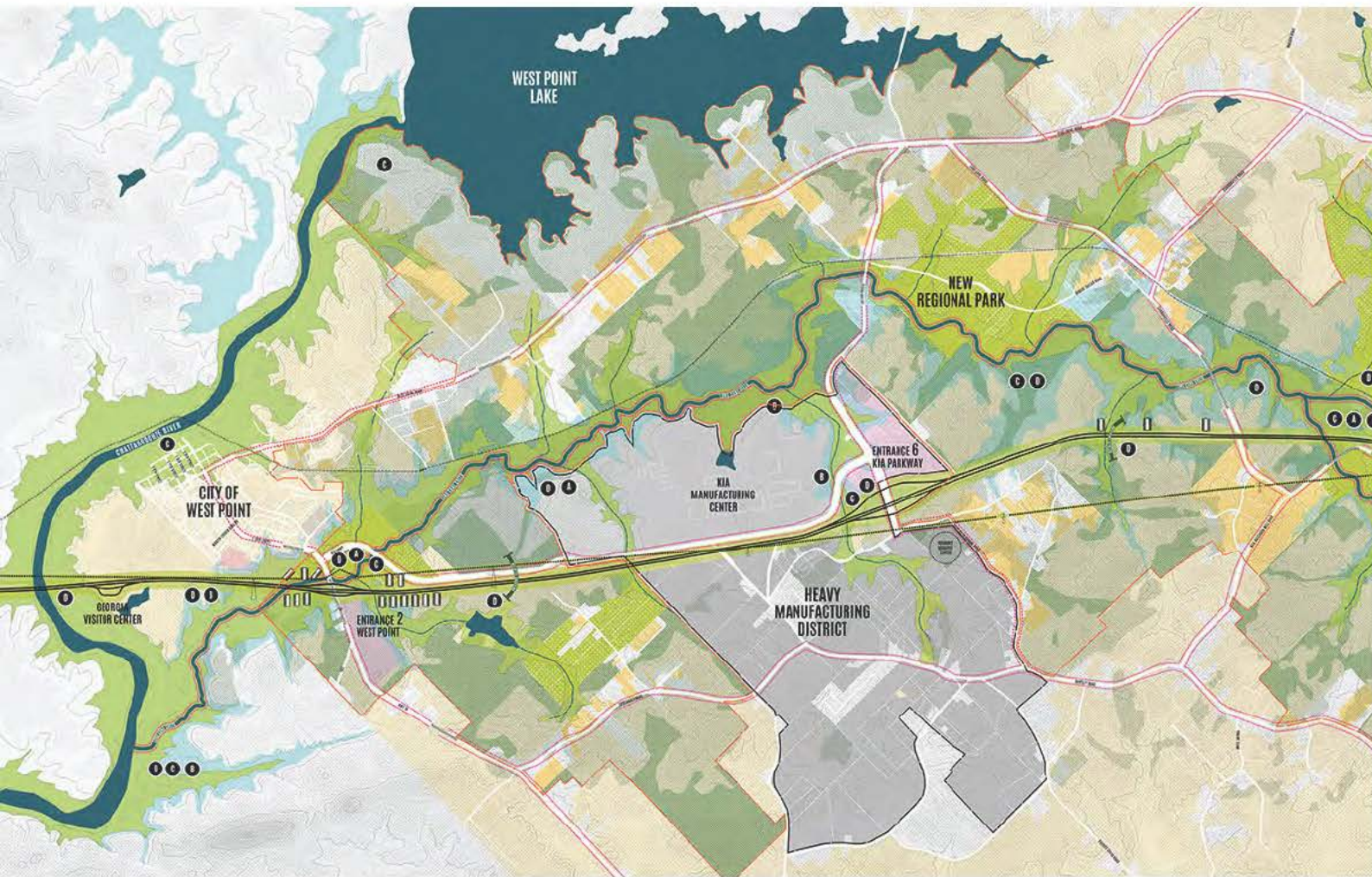



Pedestrian Bridge

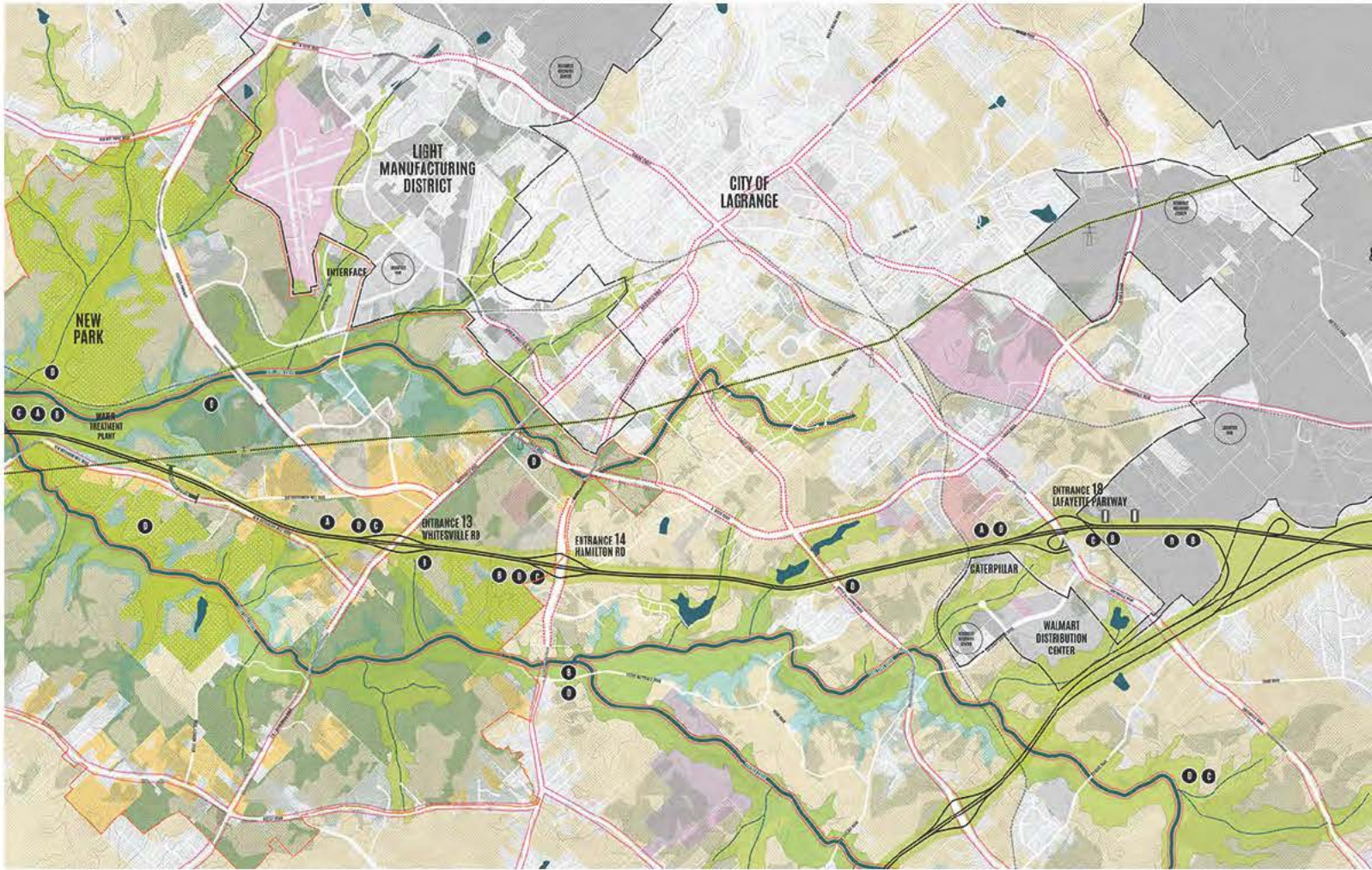







Cultural Greenway

# RAY C. ANDERSON VISION FRAMEWORK MAP



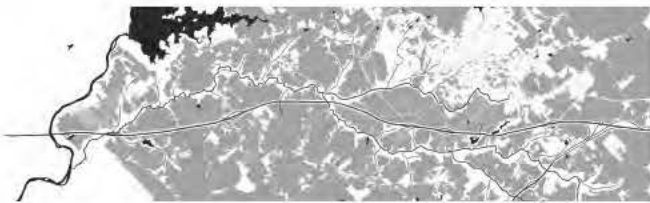
- A** Centers
- B** Ray Gates
- C** Landmarks
- D** Signs
-  Existing Signs
- R** Resource Recovery Center
- L** Logistics Hub



- |   |                              |   |                               |
|---|------------------------------|---|-------------------------------|
|  | Local Roads                  |  | Developable Land - General    |
|  | Rural Corridors              |  | Developable Land - Sensitive  |
|  | Elastic Corridors            |  | Developable Land - Industrial |
|  | Resilient Corridors          |  | Existing Industrial Land      |
|  | Creek / Local Road Interface |  | Wasted Space                  |
|  | Wildlife Crossings           |  | Parks                         |
|  | Highways                     |  | Conservation Forest           |
|  | Railroad                     |  | Existing Tree Canopy          |
|  | Creeks                       |  | Water                         |
|   |                              |  | Floodplain                    |

## GLOBAL STRATEGIES APPLIED TO THE MISSION ZERO CORRIDOR SHOW HOW HIGHWAYS CAN BE A TOOL FOR CHANGE.

The Mission Zero Corridor *Blueprints* team determined specific areas to leverage these eight opportunities to solve problems. It was important to test these ideas, so the team calculated how much space could be reclaimed for sustainable uses, how much algae it would take to offset highway emissions, the shapes of swales that will collect and clean polluted runoff, and where to plant trees to make the pedestrian experience of the surrounding roads more friendly.



### [1] Responsible Development

Highways everywhere divide communities and promote sprawling, unsustainable land development patterns. Mission Zero Corridor reconnects communities by promoting responsible development patterns.



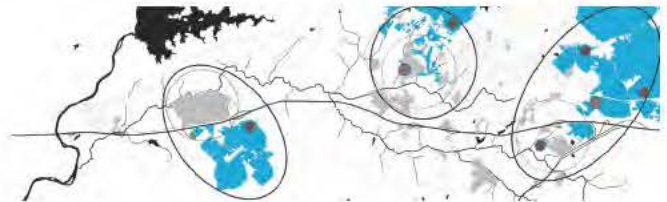
### [2] Repurpose Waste Space

Highways everywhere create inaccessible and underutilized spaces, while simultaneously wasting enormous amounts of resources. Mission Zero Corridor repurposes wasted spaces into places for new forms of resource generation and social interaction.



### [3] Conservation and Ecologically Sensitive Development

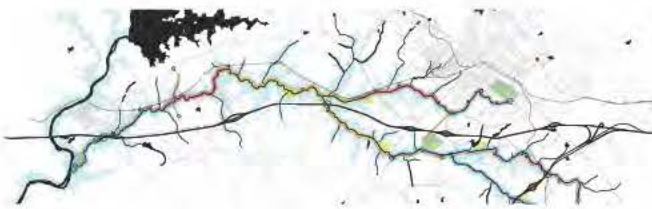
Highways everywhere destroy natural habitats and fragment and endanger local species. Mission Zero Corridor conserves and protects special habitats and reconnects fragmented areas.



### [4] Responsible Industrial Development

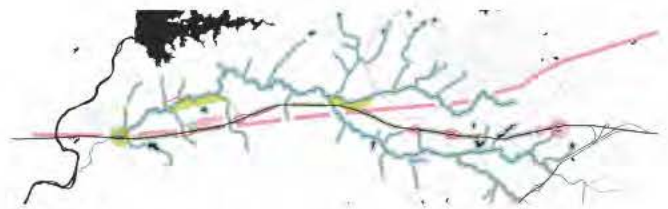
Highways everywhere enable sprawling industrial development patterns. Mission Zero Corridor promotes responsible and sustainable industrial development patterns.

# THE HIGHWAY OF THE FUTURE WILL INSTILL RESPONSIBLE AND SENSITIVE LAND DEVELOPMENT PATTERNS, RESTORE DEGRADED ECOSYSTEMS, AND LEVERAGE LOCAL IDENTITY.



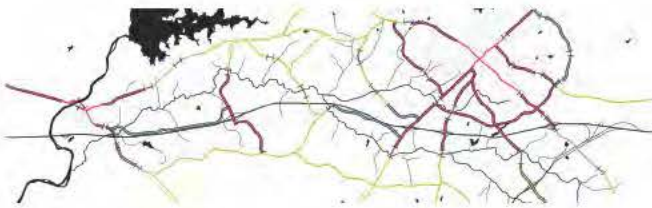
## [5] Ecosystem Restoration

Highways everywhere degrade and divide local ecosystems. Mission Zero Corridor restores and enhances degraded ecosystems.



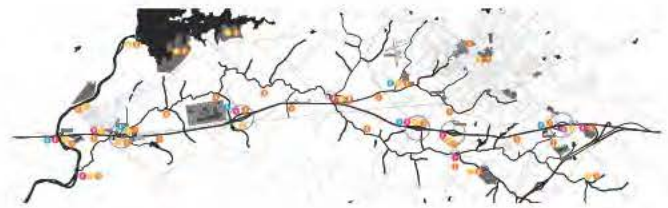
## [6] Pollution Remediation

Highways everywhere pollute and defile land, air and water. Mission Zero Corridor will mitigate and reverse the negative effects of pollutants.



## [7] Corridors

Highways everywhere use local corridors to connect to local communities. Mission Zero Corridor promotes thoroughfares that encourage connectivity and responsible development patterns.



## [8] Identity

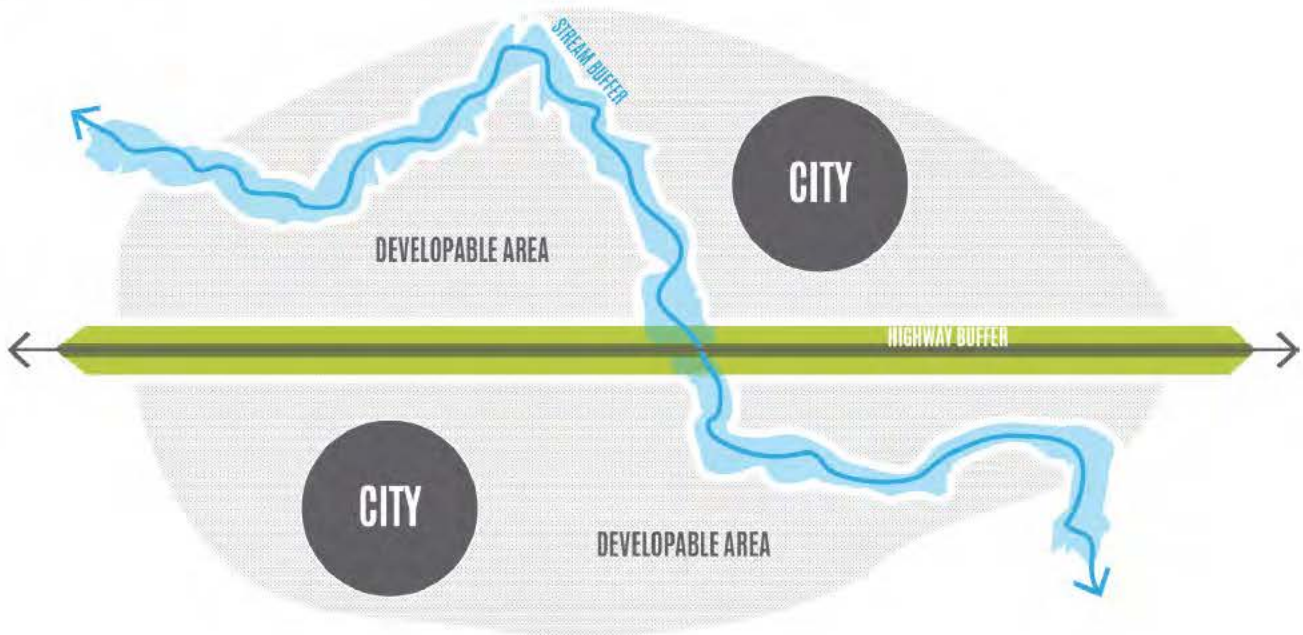
Highways everywhere promote place-lessness as well as degrade the identities and cultures of local communities. Mission Zero Corridor celebrates local identity, culture and fosters a new sense of place.

# [1] RESPONSIBLE DEVELOPMENT

HIGHWAYS EVERYWHERE DIVIDE COMMUNITIES AND PROMOTE SPRAWLING, UNSUSTAINABLE LAND DEVELOPMENT PATTERNS.

**MISSION ZERO CORRIDOR RECONNECTS COMMUNITIES BY PROMOTING RESPONSIBLE DEVELOPMENT PATTERNS.**

## THE CONCEPT



## STRATEGIES FOR IDENTIFYING DEVELOPABLE LAND

1. IDENTIFY RESILIENT PARCELS
2. IDENTIFY HIGHWAY ADJACENT SENSITIVE PARCELS
3. IDENTIFY WATER ADJACENT SENSITIVE PARCELS

1. RESILIENT PARCELS



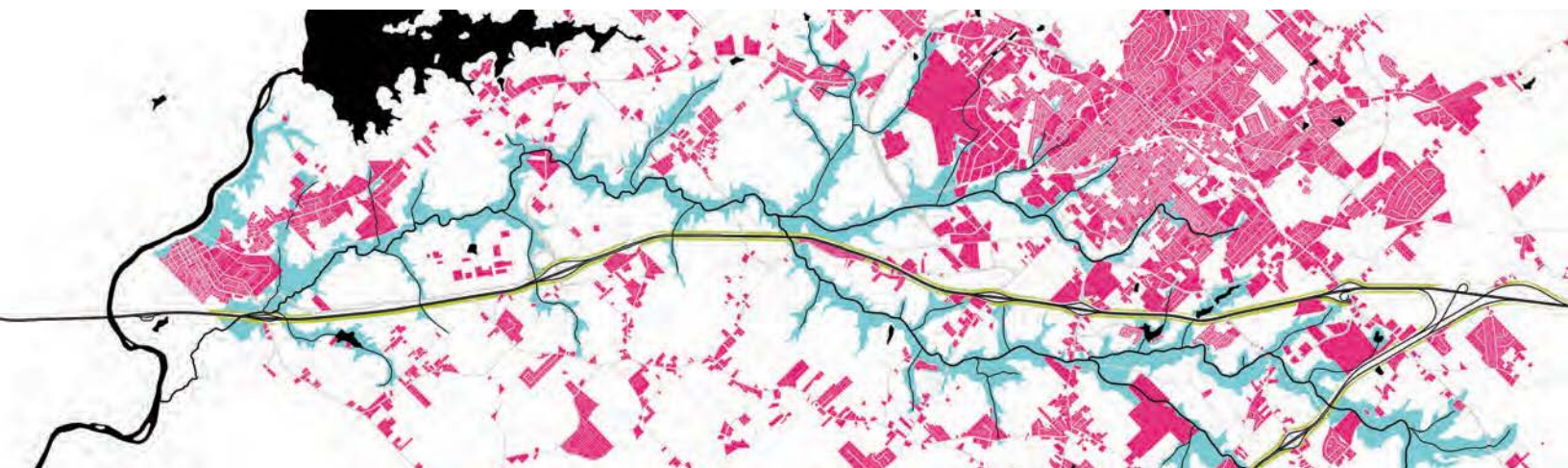
2. HIGHWAY ADJACENT SENSITIVE PARCELS



3. WATER ADJACENT SENSITIVE PARCELS



## PARCEL COMPOSITE



# RESPONSIBLE DEVELOPMENT







**DEVELOPABLE LAND**

## [2] REPURPOSE WASTE SPACE

HIGHWAYS EVERYWHERE CREATE INACCESSIBLE AND UNDERUTILIZED SPACES, WHILE SIMULTANEOUSLY WASTING ENORMOUS AMOUNTS OF RESOURCES. **MISSION ZERO CORRIDOR REPURPOSES WASTED SPACES INTO PLACES FOR NEW FORMS OF RESOURCE GENERATION AND SOCIAL INTERACTION.**

### TYPES OF WASTED SPACE

#### PUBLIC LAND/EASEMENTS

1. HIGHWAY CORRIDOR ADJACENT (BUFFERS, MEDIANS, INTERCHANGE, ENTRANCES)
- 

#### PUBLIC LAND/EASEMENTS

2. INFRASTRUCTURE CORRIDOR ADJACENT (RAILROADS, POWER LINES)
- 

#### PARCEL-BASED

3. UNDERUTILIZED DEVELOPED AND UNDEVELOPED LAND (KIA, AIRPORT, QUARRY, LANDFILL, WALMART)

## INTERVENTION OPPORTUNITIES

### Pollution Remediation



Algae Phytoremediation

### Social Interaction



Cemetery

### Resource Generation



Solar Panels



Bioswales



Trails



Solar Art



Recycling Center



Recreation Space



Incineration Plant

# REPURPOSE WASTE SPACE



**PUBLIC LAND/EASEMENTS**

-  HIGHWAY CORRIDOR ADJACENT
-  INFRASTRUCTURE CORRIDOR ADJACENT

**PARCEL BASED**

-  UNDERUTILIZED DEVELOPED LAND
-  UNDERUTILIZED UNDEVELOPED LAND



**ADDITIONAL DEVELOPABLE LAND**

# [3] CONSERVATION AND ECOLOGICALLY SENSITIVE DEVELOPMENT

HIGHWAYS EVERYWHERE DESTROY NATURAL HABITATS AND FRAGMENT AND ENDANGER LOCAL SPECIES. **MISSION ZERO CORRIDOR CONSERVES AND PROTECTS SPECIAL HABITATS AND RECONNECTS FRAGMENTED AREAS.**

## STRATEGIES FOR IDENTIFYING SENSITIVE DEVELOPMENT

1. Use developable parcels as the base
2. Identify old growth forest

1. DEVELOPABLE PARCELS BASE



2. IDENTIFY OLD GROWTH FOREST



SENSITIVE PARCELS



## TACTICS FOR USING SENSITIVE PARCELS

CONSERVATION FORESTRY



SENSITIVE DEVELOPMENT



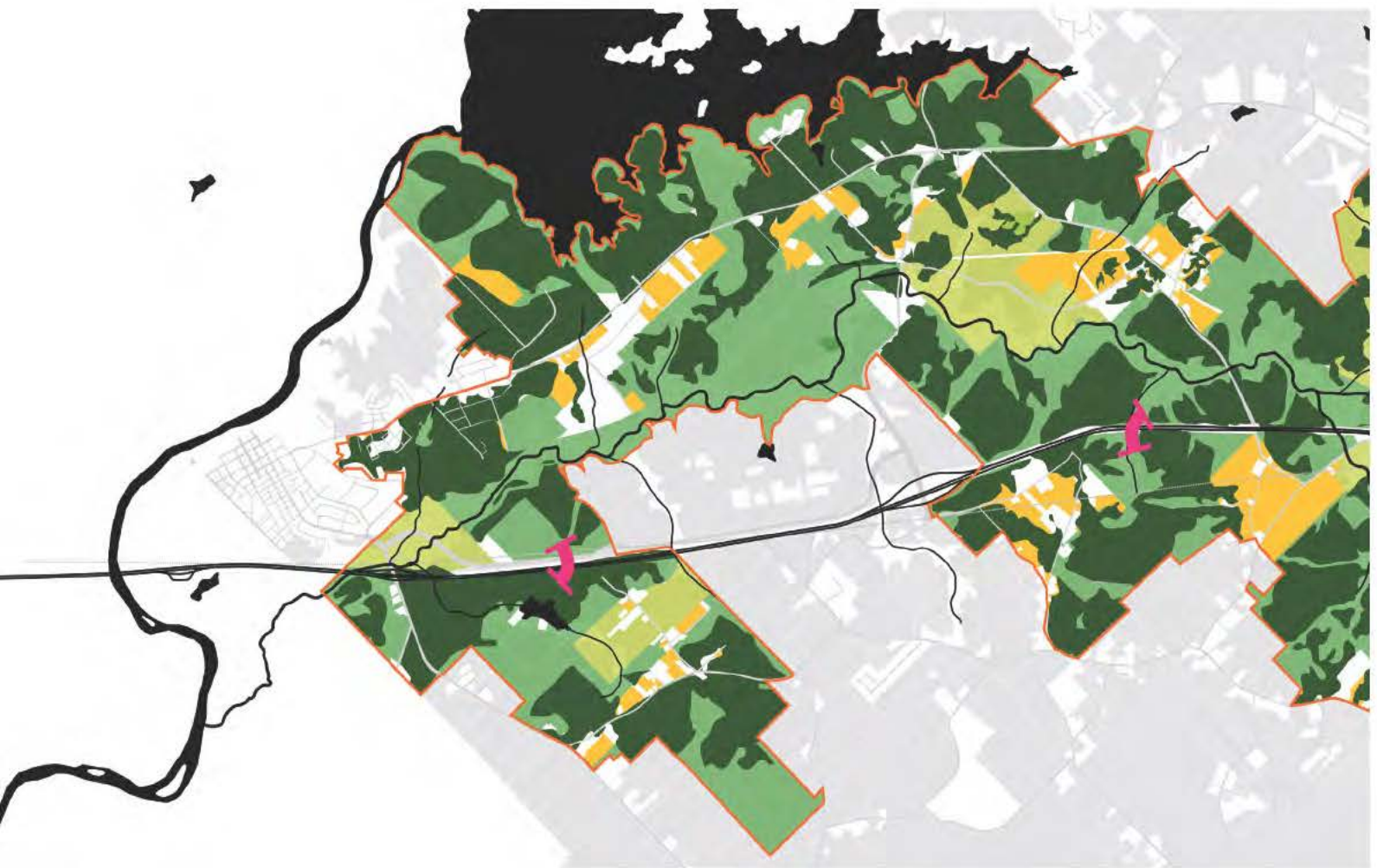
PARKS AND GREENSPACE



WILDLIFE CROSSINGS

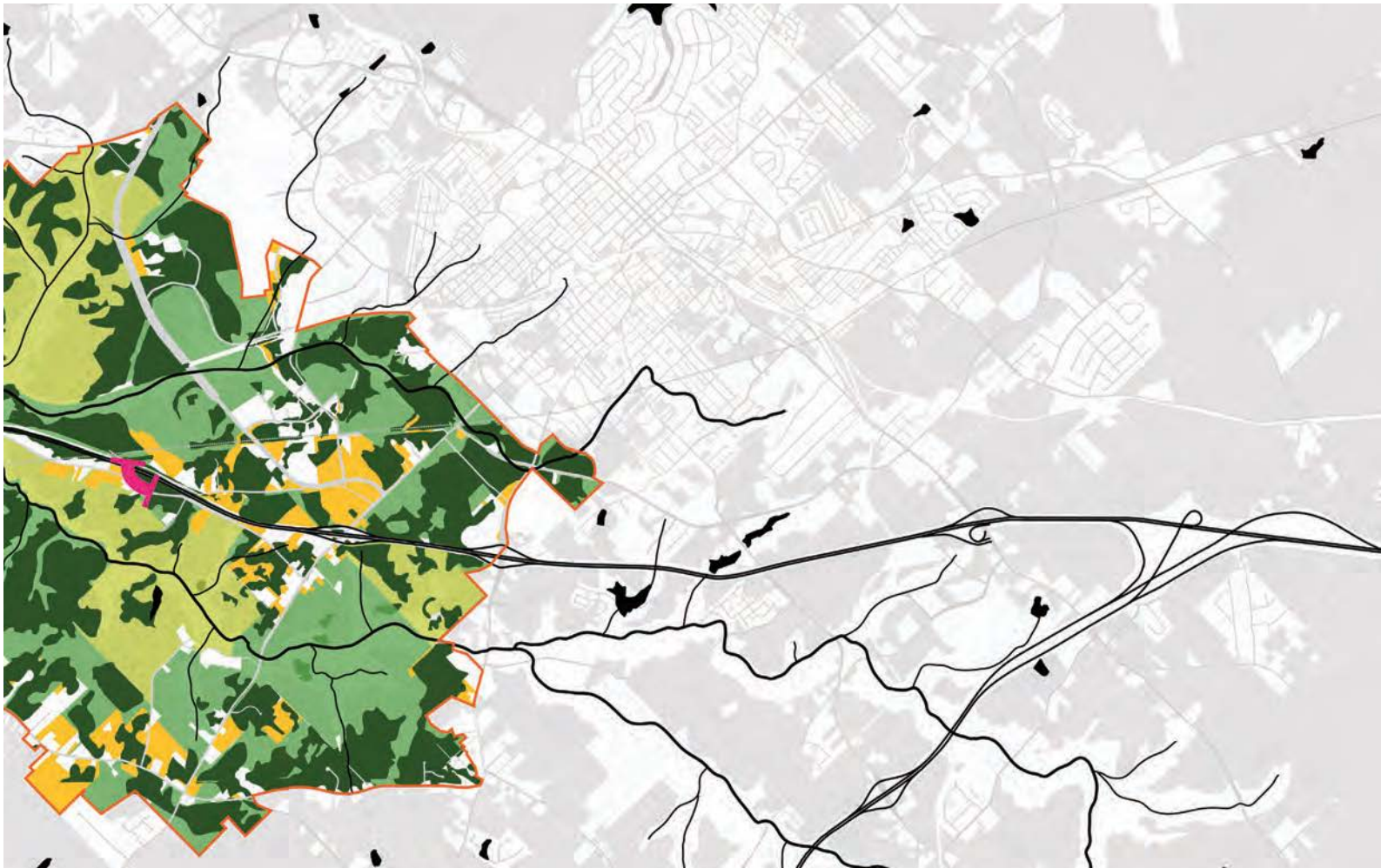


# CONSERVATION AND ECOLOGICALLY SENSITIVE DEVELOPMENT



-  SENSITIVE DEVELOPMENT
-  CONSERVATION FORESTRY
-  PARKS & GREEN SPACES
-  WILDLIFE CROSSINGS





**REPURPOSED WASTE SPACE**

# [4] RESPONSIBLE INDUSTRIAL DEVELOPMENT

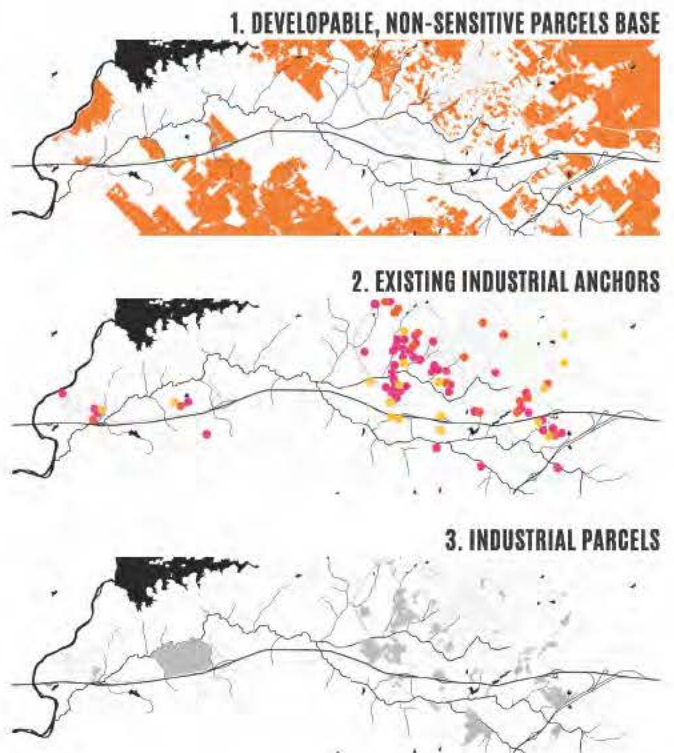
HIGHWAYS EVERYWHERE ENCOURAGE SPRAWLING INDUSTRIAL DEVELOPMENT PATTERNS. **MISSION ZERO CORRIDOR PROMOTES RESPONSIBLE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT PATTERNS.**

## STRATEGIES FOR IDENTIFYING FUTURE INDUSTRIAL LAND

1. Use developable, non-sensitive parcels as the base
2. Identify existing industrial anchors
3. Identify industrial parcels

## TACTICS

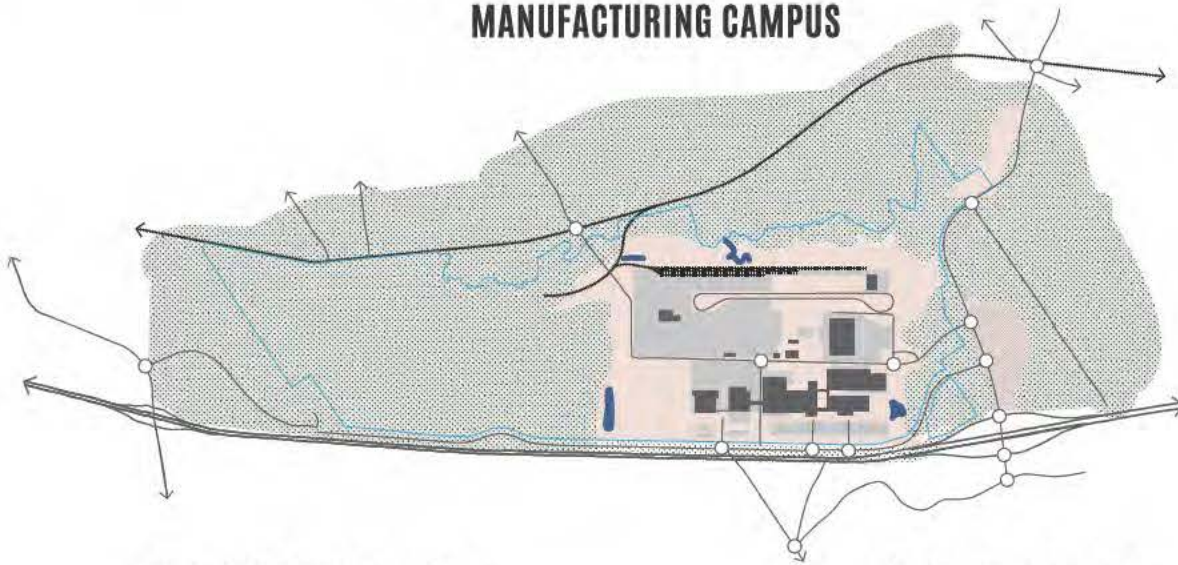
By locating industrial parks in places where there is already existing infrastructure, and around similar intensity industrial uses, there is the potential to allow for increased shared resources between companies, such as utilities, recycling, parking decks, and social and communal amenities.



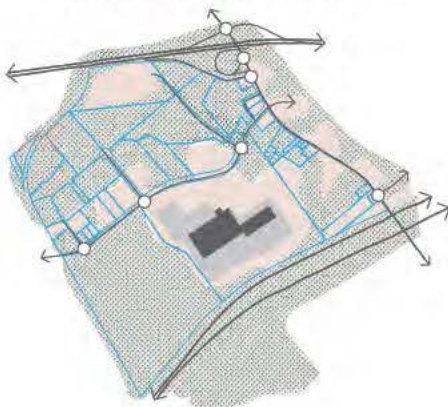
## TYPES OF INDUSTRIAL DEVELOPMENT

1. MANUFACTURING CAMPUSES
2. INDUSTRIAL PARKS
3. DISTRIBUTION CENTERS

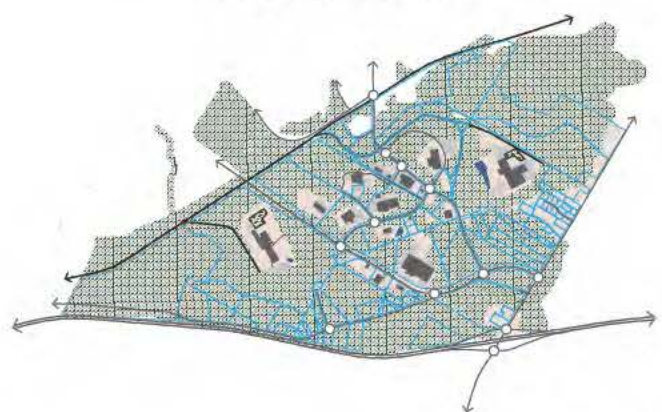
**MANUFACTURING CAMPUS**



**DISTRIBUTION CENTER**



**INDUSTRIAL PARK**



# RESPONSIBLE INDUSTRIAL DEVELOPMENT



- Existing Industrial Parcel
- Future Industrial Parcel
- Resource Recovery Center
- Logistics Hub



**INDUSTRIAL DISTRICT VISION**

# [5] ECOSYSTEM RESTORATION

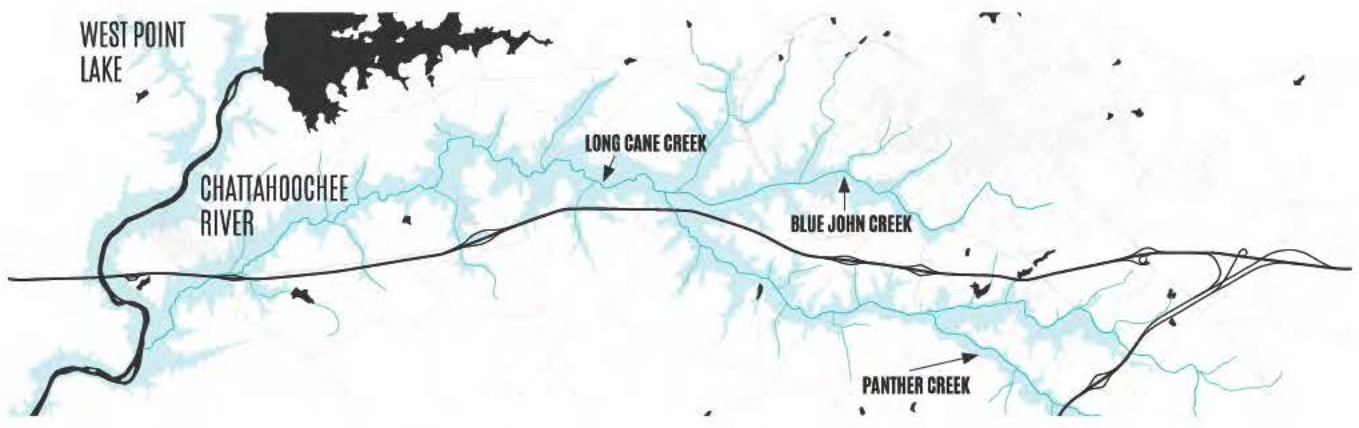
HIGHWAYS EVERYWHERE DEGRADE AND DIVIDE LOCAL ECOSYSTEMS. **MISSION ZERO CORRIDOR RESTORES AND ENHANCES DEGRADED ECOSYSTEMS.**

### TYPES OF DEVELOPMENT - CREEK INTERFACES

1. Developed Zones
2. Conservation Zones
3. Industrial Zones

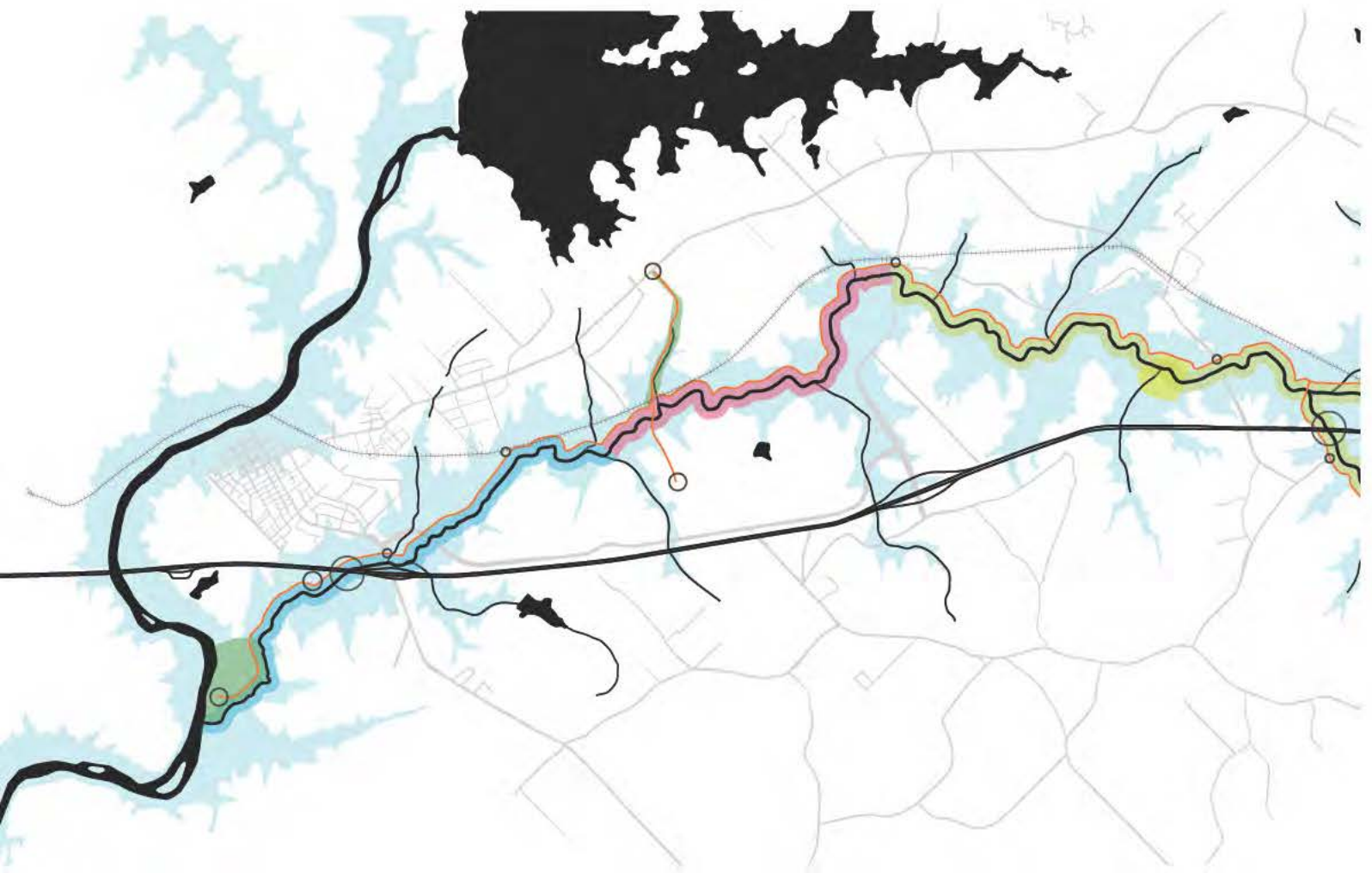
### STRATEGIES & TACTICS FOR CREEK RESTORATION

1. **POLLUTION REMEDIATION**
  - Restore natural wetlands
  - Develop new wetlands
  - Slow-spread-soak
2. **CONSERVATION**
  - Designate conservation land
  - Protect natural ecosystems
  - Restore degraded ecosystems
3. **PUBLIC ACCESS**
  - Public trails along creek bed
  - Public parks at trail heads
  - Control public access



-  CREEKS + TRIBUTARIES
-  LAKES + RIVERS
-  FLOODPLAIN

# ECOSYSTEM RESTORATION



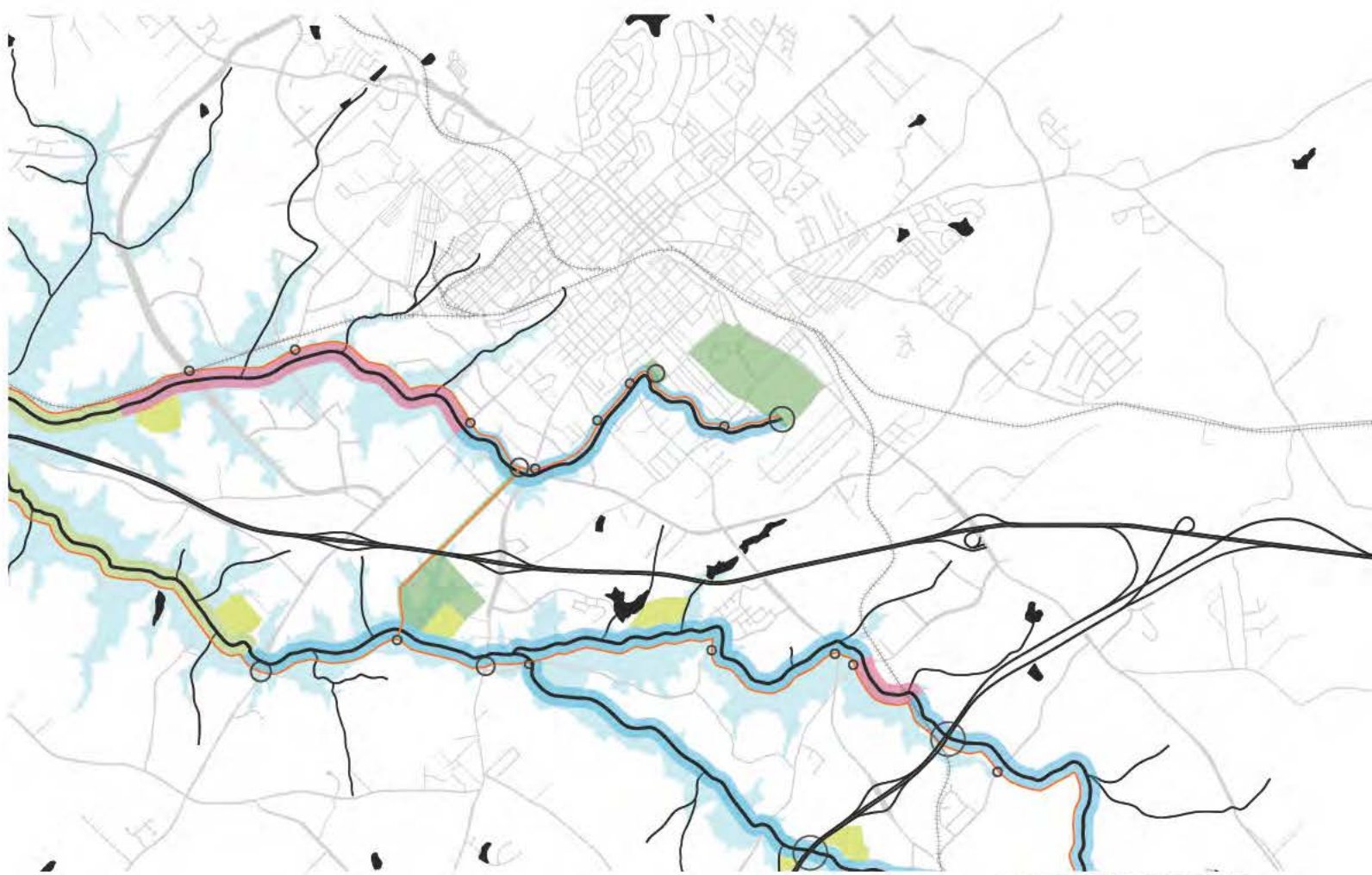
## INTERFACE ZONES

- DEVELOPED AREA
- CONSERVATION AREA
- INDUSTRIAL AREA

## OTHER FEATURES

- WETLANDS
- HIGHWAY INTERSECTION





**RESTORATION VISION**

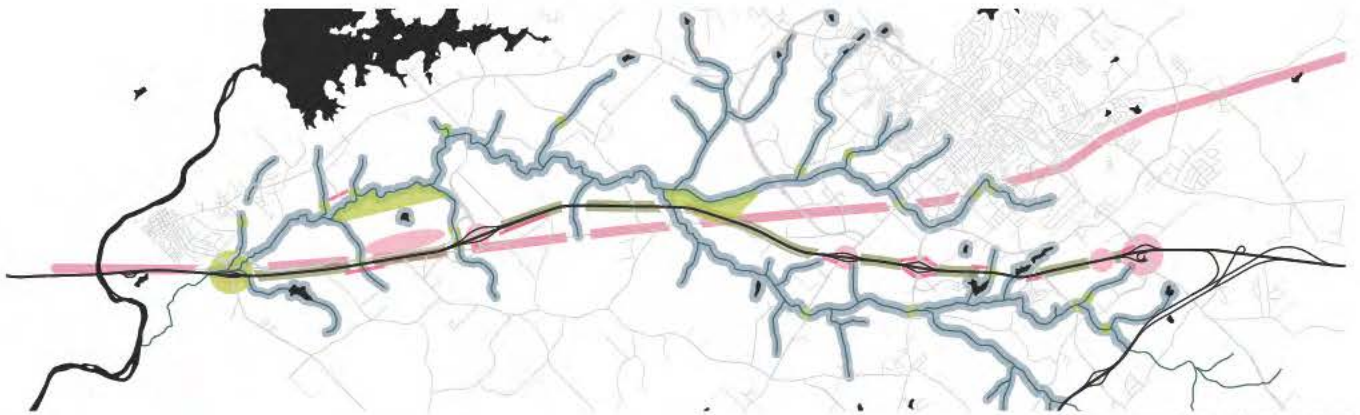
-  MAJOR TRAIL ACCESS
-  MINOR TRAIL ACCESS
-  TRAIL PATH
-  PARKS

## [6] POLLUTION REMEDIATION

HIGHWAYS EVERYWHERE POLLUTE AND DEFILE LAND, AIR AND WATER. **MISSION ZERO CORRIDOR WILL MITIGATE AND REVERSE THE NEGATIVE EFFECTS OF POLLUTANTS.**

### TYPES OF POLLUTION SOURCES AND STRATEGIES FOR REMEDIATION

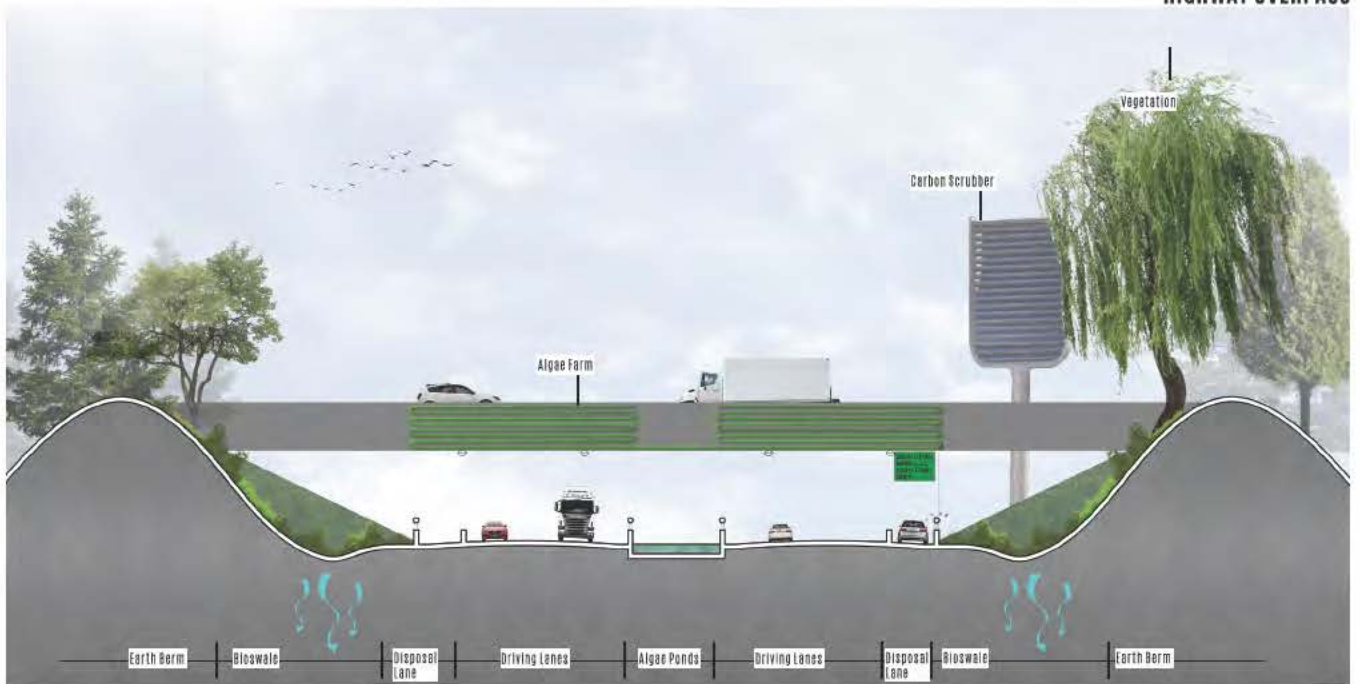
1. **Magnetic Field**  
Reduce exposure
2. **Litter**  
Trash collection and recycling
3. **Light**  
Driver responsive lighting
4. **Noise**  
Sound barriers
5. **Air**  
Carbon sequestration
6. **Water**  
Water filtration  
Water quality monitoring  
Water source protection



**CURRENT POLLUTION SOURCES**

- MAGNETIC POLLUTION** POWER LINES
- LIGHT POLLUTION** TOWN CENTERS
- WATER POLLUTION** CREEKS
- LITTER, NOISE, AIR AND WATER POLLUTION** HIGHWAY & RAILROAD CORRIDORS

**HIGHWAY OVERPASS**



# POLLUTION REMEDIATION



-  WATER FILTRATION
-  WATER PROTECTION
-  CARBON SEQUESTRATION

-  SOUND BARRIERS
-  DRIVER RESPONSIVE LIGHTING
-  REDUCE MAGNETIC EXPOSURE



**REMEDIATION OPPORTUNITIES**

# [7] CORRIDORS

HIGHWAYS EVERYWHERE USE LOCAL CORRIDORS TO CONNECT TO LOCAL COMMUNITIES. **MISSION ZERO CORRIDOR PROMOTES THOROUGHFARES THAT ENCOURAGE CONNECTIVITY AND RESPONSIBLE DEVELOPMENT PATTERNS.**

### TYPES OF CORRIDORS

1. RURAL CORRIDORS
2. ELASTIC CORRIDORS
3. RESILIENT CORRIDORS

### STRATEGIES & TACTICS FOR CORRIDORS

#### 1. PRESERVE RURAL CORRIDORS

- Water management
- Access
- Land conservation
- Resource generation

#### 2. ENHANCE ELASTIC CORRIDORS

- Water management
- Access
- Responsible development
- Identity / placemaking

#### 3. CULTIVATE RESILIENT CORRIDORS

- Water management
- Access
- Responsible development
- Identity / placemaking

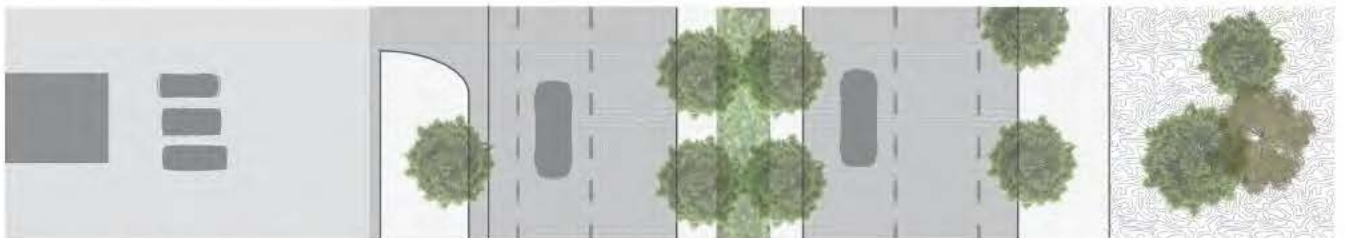


**WATER MANAGEMENT:** STORMWATER MEDIANS

**ACCESS:** BIKE LANES, CONTINUOUS SIDEWALKS

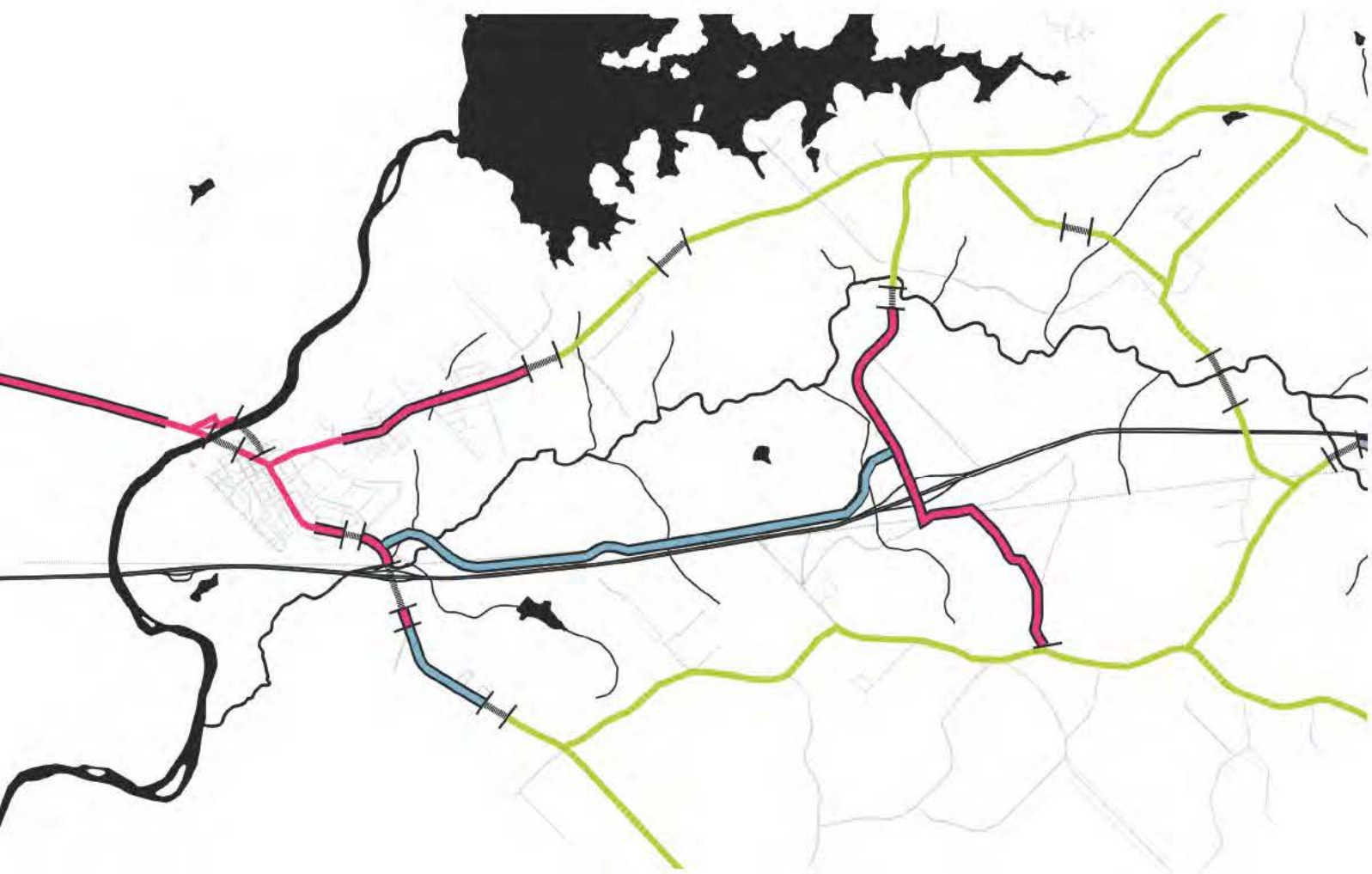
**RESPONSIBLE DEVELOPMENT:** DENSE ACTIVE WALKABLE DEVELOPMENT PATTERNS

**IDENTITY / PLACEMAKING:** ENCOURAGING LOCAL BUSINESSES, SIGNAGE/ART/LANDMARKS, SOCIAL SPACES



Typical Elastic Zero Section

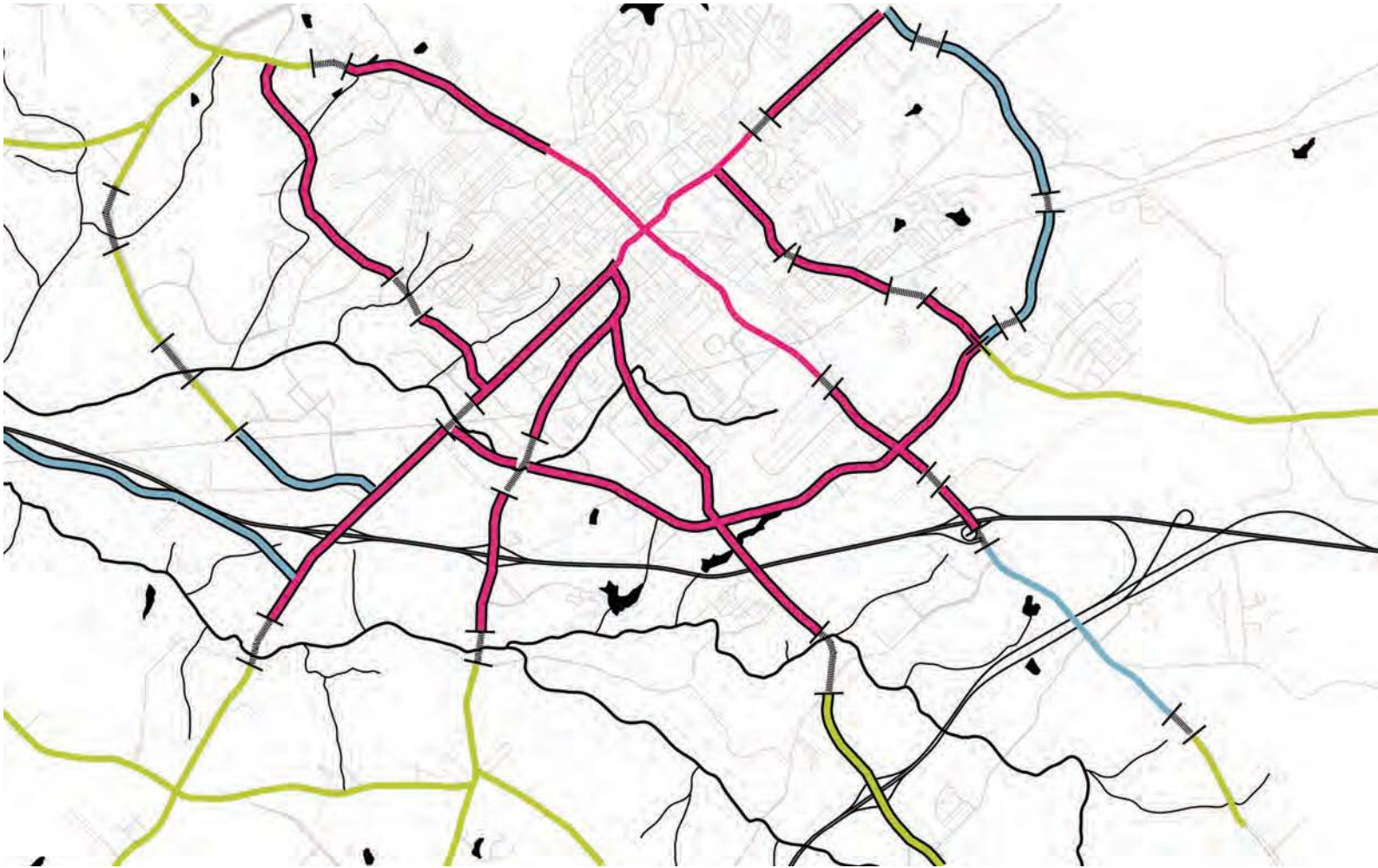
# CORRIDORS



-  RESILIENT
-  ELASTIC
-  RURAL

-  STREAM INTERFACE
-  CORRIDOR CHANGING





**CORRIDORS VISION**

# [8] IDENTITY

HIGHWAYS EVERYWHERE PROMOTE PLACE-LESSNESS AS WELL AS DEGRADE THE IDENTITIES AND CULTURES OF LOCAL COMMUNITIES.

MISSION ZERO CORRIDOR CELEBRATES LOCAL IDENTITY, CULTURE AND FOSTERS A NEW SENSE OF PLACE.

## TYPES OF IDENTITY OPPORTUNITIES

- 1. ENTRANCES
- 2. BILLBOARDS & SIGNS
- 3. INSTITUTIONS
- 4. LOCAL FEATURES
- 5. INFRASTRUCTURE CORRIDORS

## STRATEGIES & TACTICS FOR IDENTITY

- 1. **CENTERS**  
DESTINATIONS

---

- 2. **RAY GATES**  
PERFORMATIVE AND COMMEMORATIVE MARKERS

---

- 3. **LANDMARKS**  
IDENTITY MARKERS

---

- 4. **SIGNS**  
INFORMATION AND IDENTITY AWARENESS

---




# INTERVENTION OPPORTUNITIES

Entrances

Billboards & Existing Signs

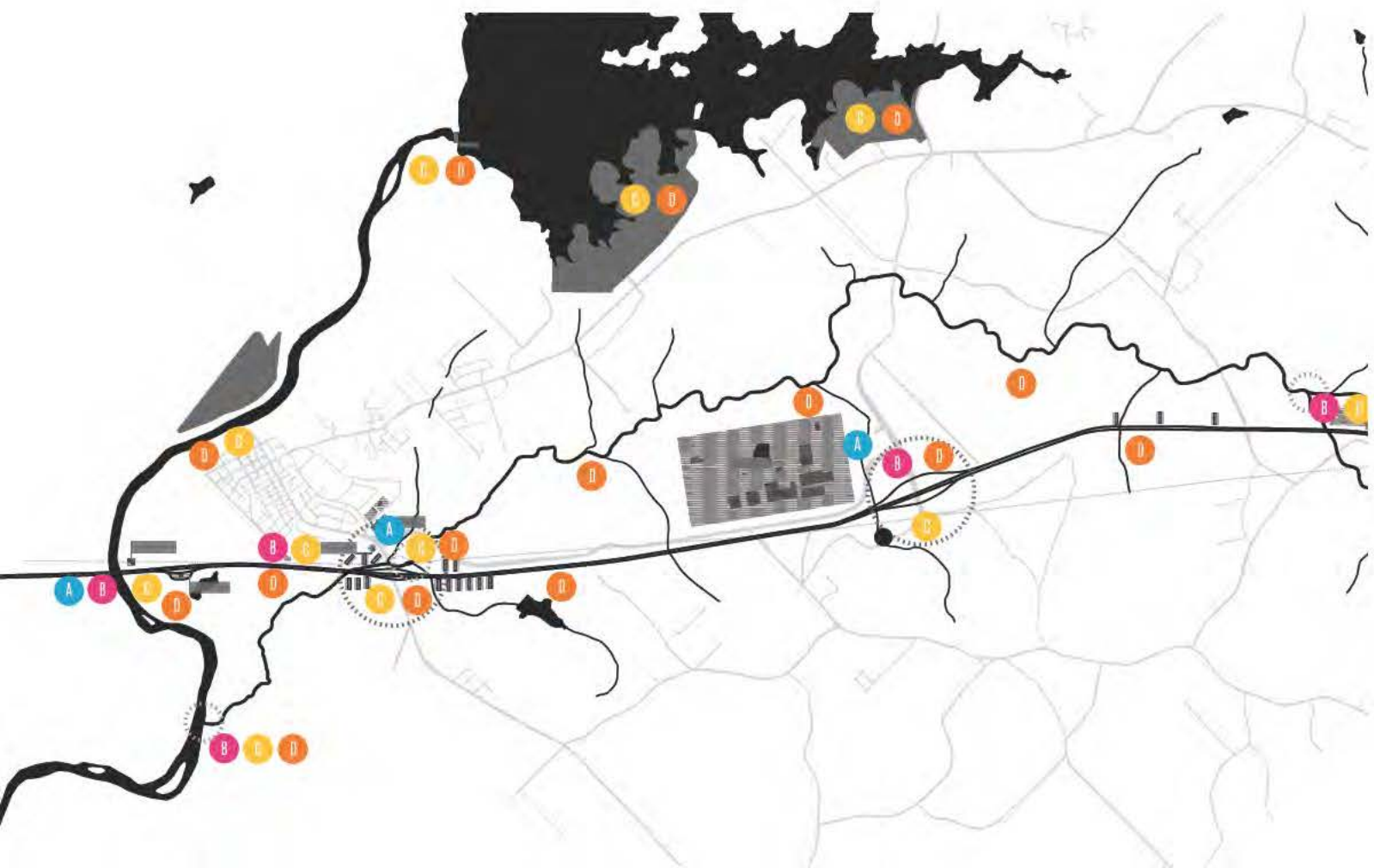
Institutions

Local Features

Infrastructure



# IDENTITY

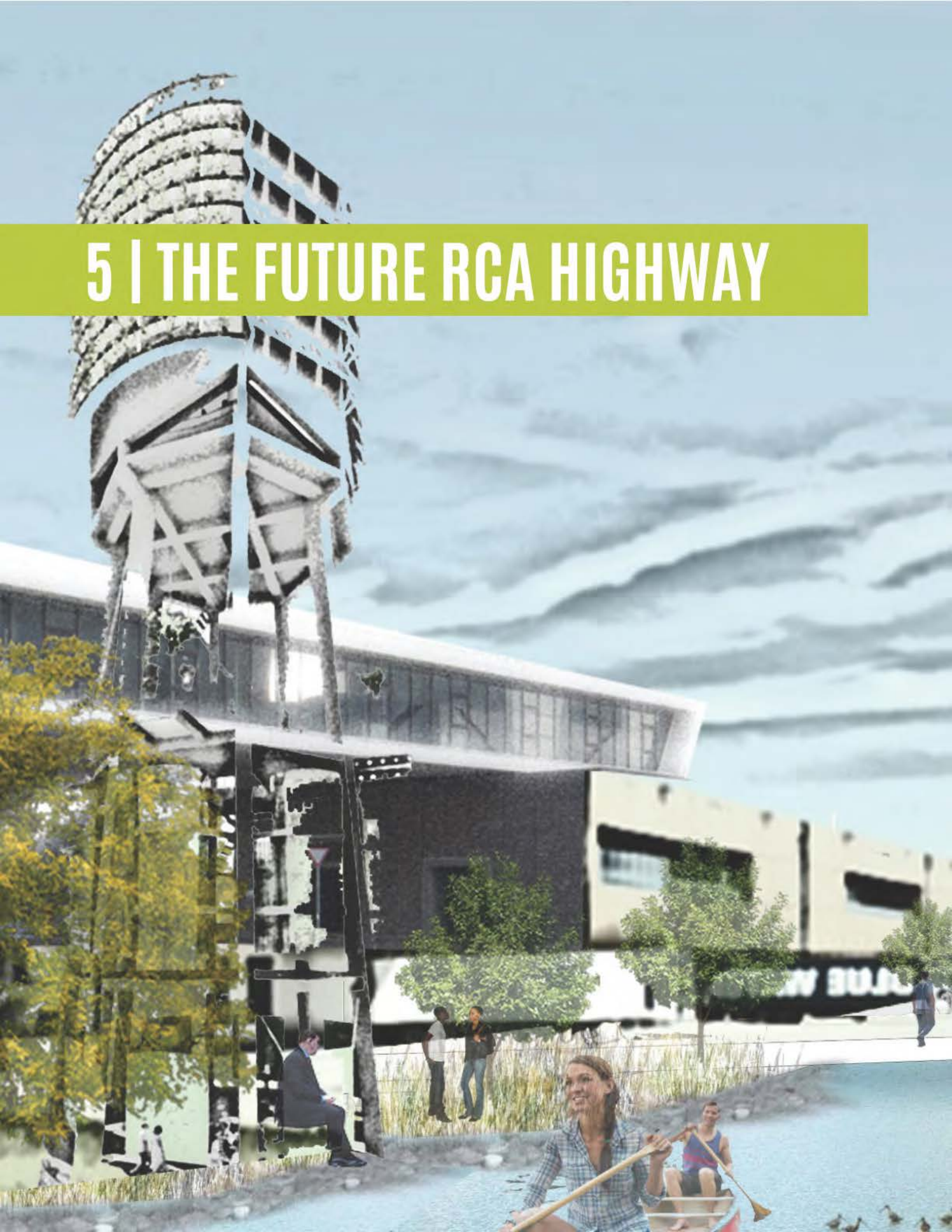


- CENTERS
- RAY GATES
- LANDMARKS
- SIGNS



**IDENTITY VISION**

# 5 | THE FUTURE RCA HIGHWAY



# UNIFY RESTORE CATALYZE

After identifying challenges and developing appropriate strategies for global and local application, the Blueprints studio team tested the strategies for application on the Ray C. Anderson Memorial Corridor. These tactics addressed the strategies in varying ways, but all within the framework of pollution remediation, resource efficiency, wildlife conservation, life safety, cultural exchange and changing attitudes. The pieces are employed in the vision map in a way that weaves the highway back into its natural environment.

These projects include:

- Community Highway Development
- LaGrange Community Eco-Park
- Wildlife Conservation
- Eco-Industrial District
- Kia Motors Industrial Zone
- Long Cane Water Discovery Park
- Sustainable Highway Design
- Troup County Air Tram
- Ray Gates and Legacy Center

# MISSION ZERO CORRIDOR VISION MAP

RAY GATES & LEGACY CENTER



Legacy Center  
Exit Ray Gate



KIA INDUSTRIAL MOTORS ZONE



TROUP COUNTY AIR TRAM



WILDLIFE CONSERVATION CROSSING



LONG CANE WATER DISC



ECO-INDUSTRIAL DEVELOPMENT



INTERFACE INC. ECO-PARK



Water Discovery Park

Future Development

Wildlife + Pedestrian Passage

Stream Crossing Park

Wetland Park

Interface Corp. Eco Park (Incineration and Recycling Center)  
Entry Over Gate



WATER DISCOVERY PARK



COMMUNITY-HIGHWAY DEVELOPMENT



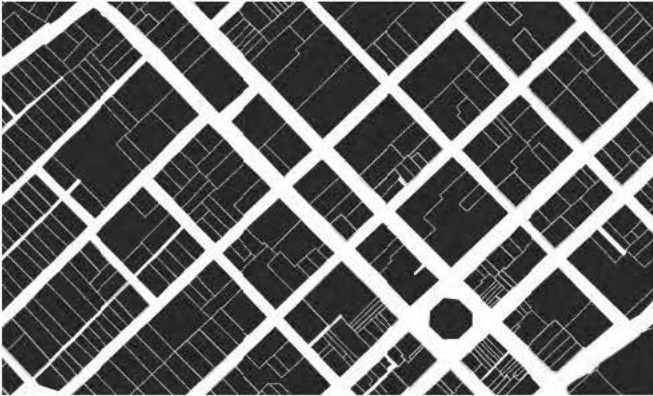
SUSTAINABLE HIGHWAY DESIGN

# COMMUNITY HIGHWAY DEVELOPMENT

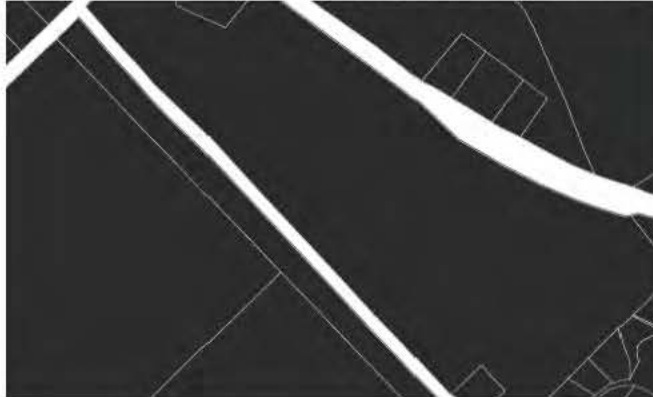
To better integrate the highway in the communities, the patterns of development need to reflect local priorities. First, locations of urban growth should be identified - what is consistent with comprehensive plans and population projections. Once locations are selected, the urban fabric should be designed to be dense between arterial connections to create character areas. Land uses should then be laid according to appropriate adjacencies, and communities can be connected through pedestrian trails and future parks.



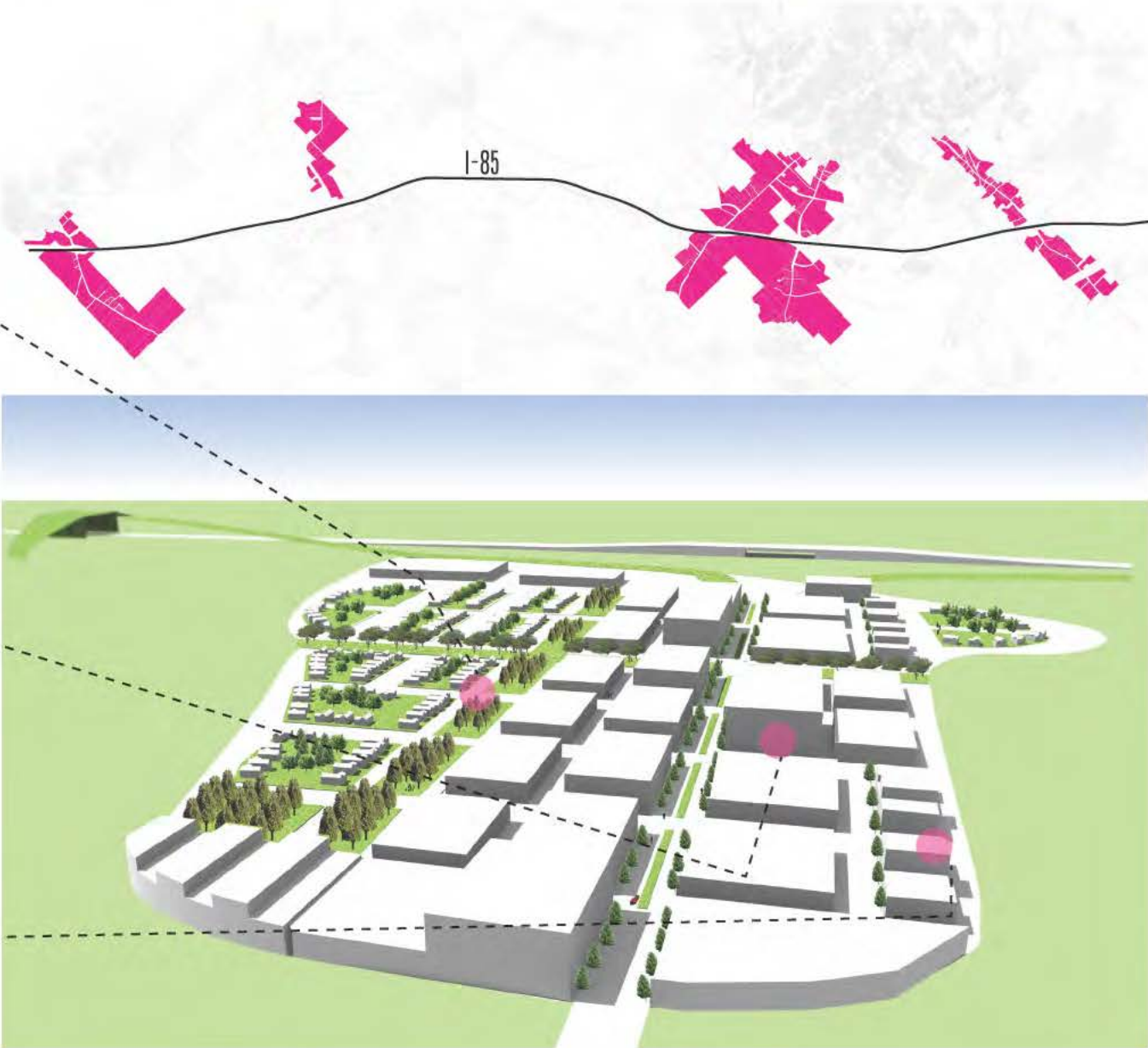
**DOWNTOWN LAGRANGE**



**SUBURBS OF LAGRANGE**



**HIGHWAYS DIVIDE COMMUNITIES AND CREATE BARRIERS FOR LOCAL TRAVEL. MISSION ZERO CORRIDOR WEAVES THE INTERSTATE HIGHWAY.**



# COMMUNITY HIGHWAY DEVELOPMENT

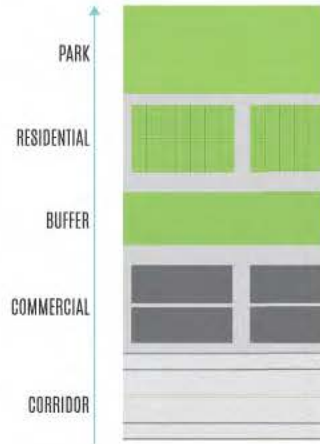
PEDESTRIAN COMMERCIAL



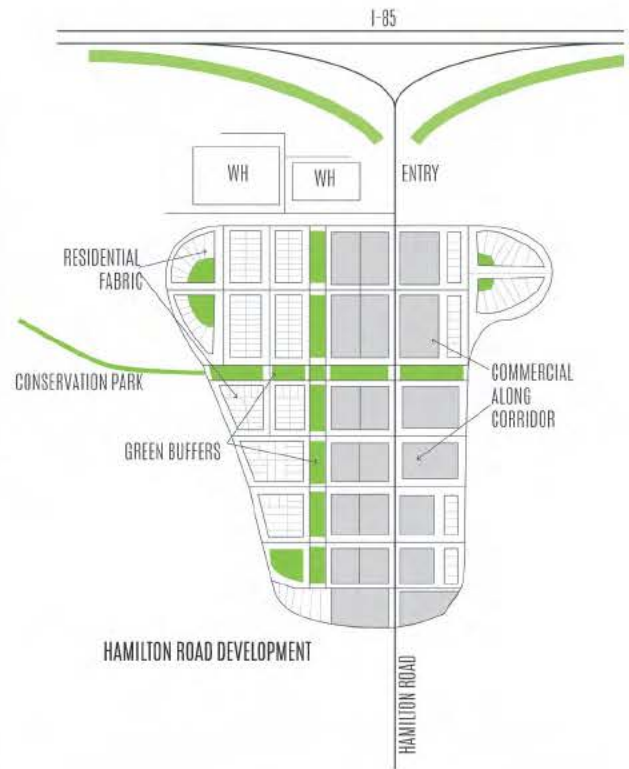
	Residential	Commercial	Warehouse	Industrial	Parks/Wildlife
Residential	●	●	●	●	●
Commercial	●	●	●	●	●
Warehouse	●	●	●	●	●
Industrial	●	●	●	●	●
Parks/Wildlife	●	●	●	●	●

● Vital Adjacency  
 ● N/A  
 ● Avoid Adjacency

ADJACENCIES



LAYERS OF DEVELOPMENT



HAMILTON ROAD DEVELOPMENT

RESIDENTIAL AND GREEN BUFFER



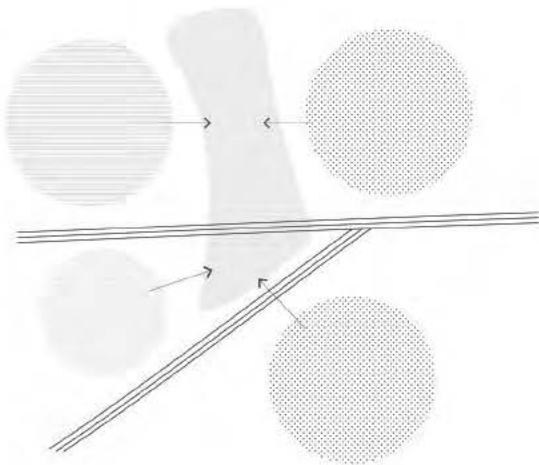
## [2] REPURPOSE WASTED SPACE

# LAGRANGE COMMUNITY ECO-PARK

### STRATEGIES

To continue to weave the highway with its surroundings, parks can be created to preserve natural resources but allow for community spaces as well. First, underutilized space along the highway should be identified, and that space should be one that can unify different surrounding developments (related to the community development tactic). The space can be interactive and educational for users by addressing waste management, recycling, and clean energy through various technologies. Of course, this space should also provide areas for community recreation and gathering, and provide opportunities within the space to give back to the community, perhaps through energy capture or gardening.

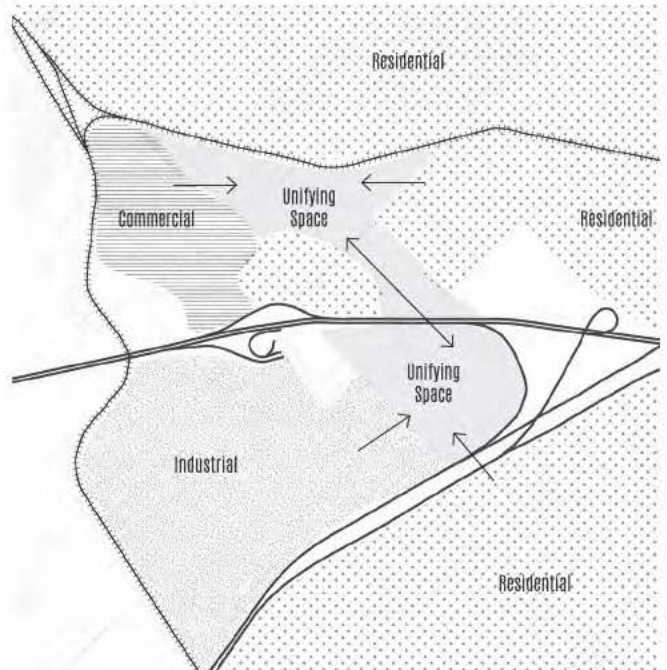
### CONCEPT



### COMMUNITY GARDEN



### CONCEPT IN CONTEXT



**HIGHWAYS CREATE AREAS OF UNSAFE AND NEGLECTED SPACE. MISSION ZERO CORRIDOR INNOVATES USABLE SPACES WITH SUSTAINABLE DEVELOPMENT AND PROMOTES EQUAL ACCESS FOR ALL.**

**LANDFILL ECO-PARK**



# LAGRANGE COMMUNITY ECO-PARK





Incineration Plant



## Recycling and Turning Waste into Energy

Sweden has implemented this waste-to-energy method along with encouraging people to recycle and now the amount of waste they send to landfills is almost non-existent (less than 1%) and the energy produced is enough to provide electricity for cities with populations of close to 100,000 people.

The amount of waste Sweden was producing proved to not provide adequate enough for the capacity needed for the incineration plant, so Sweden started importing waste from surrounding countries. These countries pay for Sweden to take their waste, so Sweden is not only profiting through the energy produced but also financially.

Another plus, the smoke given off through the smoke stack of the plant is essentially non-toxic to the environment (99.9% non-toxic) due to all of the filtering that occurs before the smoke enters into the atmosphere. Waste collected through filtering can be recycled in various ways or sequestered so as to have little negative impact.

Community Garden



Solar Panel Field



Park over highway



Recycling Center



Ecology Park



# WILDLIFE CONSERVATION

## STRATEGIES

As highlighted in previous chapters, roads decrease habitat amount and quality, increase mortality due to wildlife-vehicle collisions (road kill), prevent access to resources on the other side of the road, and subdivide wildlife populations into smaller and more vulnerable sub-populations (fragmentation). Habitat fragmentation can lead to extinction or extirpation if a population's gene pool is restricted enough.

In order to address the risks posed by highways to natural habitats and native species, wildlife bridges are proposed along the highway to allow for a natural crossing - only for wildlife - across the highway. Wildlife crossings are a practice in habitat conservation, allowing connections or reconnections between habitats, combating habitat fragmentation. They also assist in avoiding collisions between vehicles and animals, which in addition to killing or injuring wildlife may cause injury to humans and property damage. Bridges are proposed as opposed to an alternative tunnel primarily to create a visual element over the highway, adding an identity feature as well as safe crossing.

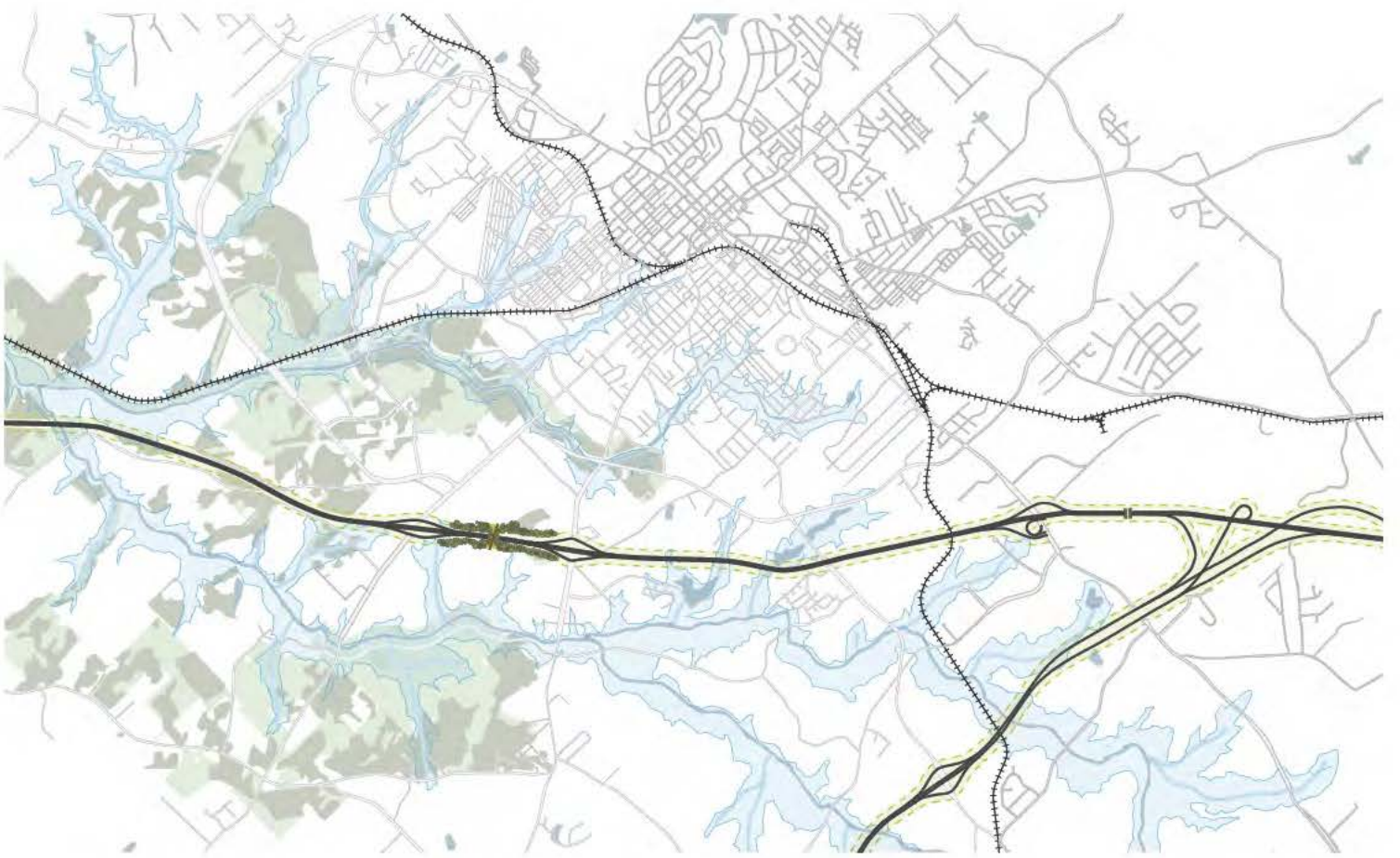


**HIGHWAYS DESTROY NATURAL HABITATS AND FRAGMENT LOCAL SPECIES. MISSION ZERO CORRIDOR CONSERVES AND PROTECTS NATURAL HABITATS WHILE RECONNECTING FRAGMENTED SPECIES.**



# WILDLIFE CONSERVATION





# ECO-INDUSTRIAL DISTRICT

## WASTE SYSTEMS

RESOURCE RECOVERY CENTERS, RECYCLING CENTERS, LOCAL COLLECTORS

Closed loop systems for waste rely on transfer of materials to a local collector and are then further sent to the resource recovery center. Materials are sorted and recycled at the recycling center, reused at eco-industrial facilities or refused and sent to the landfill for waste to energy generation. The community can also sell products at resource recovery or recycling centers. The transfer of these materials relies on emission free transportation systems.

## WATER SYSTEMS

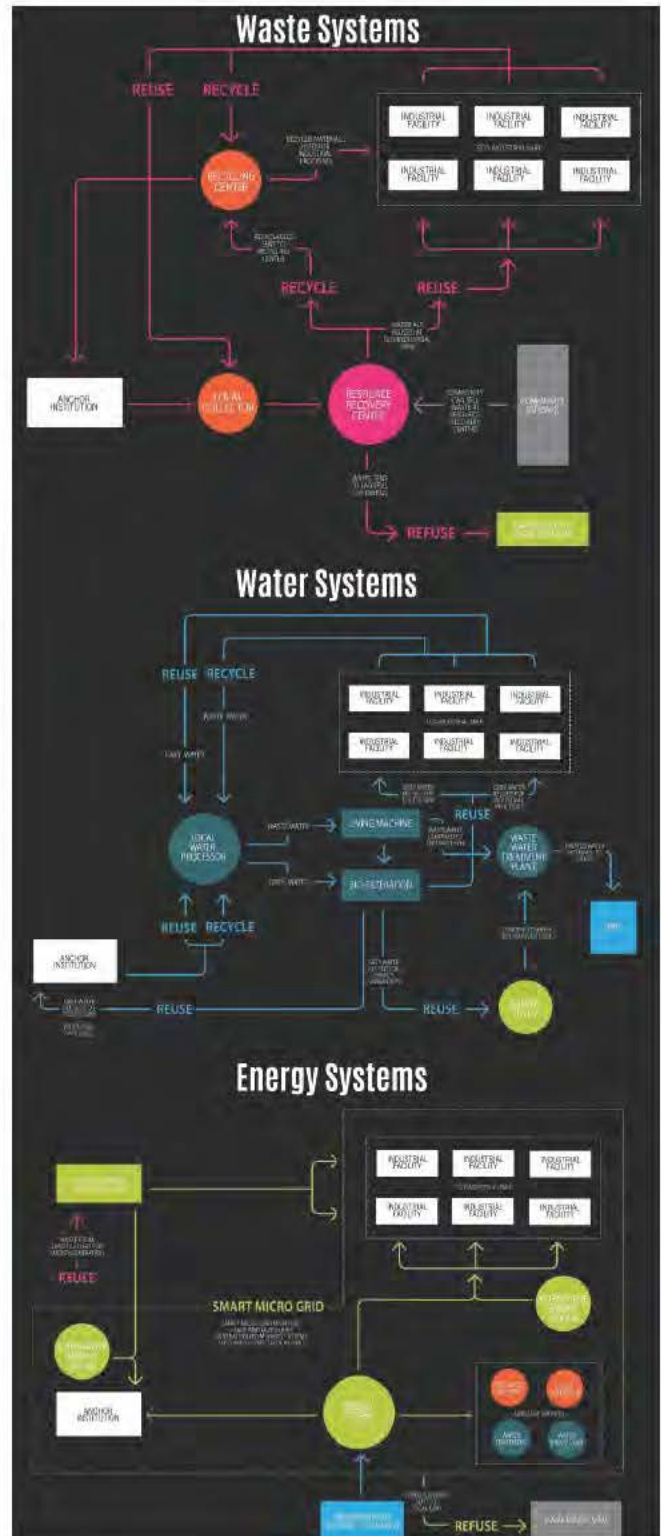
WATER TREATMENT PLANT, WATER PROCESSORS, WATER FILTRATION SYSTEMS

Closed loop systems for water utilize local water processors to sort waste water and grey water from eco-industrial facilities. Grey water is filtered using bio-filtration techniques and reused at eco-industrial facilities. Grey water is also utilized in energy totems for energy generation. Black water is filtered through living machines and converted to grey water for reuse. Excess water is treated at the waste water treatment plant and returned to the creek.

## ENERGY SYSTEMS

SMART MICRO GRID, ENERGY TOTEMS, ALTERNATE ENERGY SYSTEMS

Closed loop systems for energy use a smart micro grid to monitor energy usage. Energy totems are placed in public areas where water is heated using heliostats on top of the roofs of eco-industrial facilities to allow for the heating of water and conversion to steam. The steam is used to run turbines thus generating electricity. Alternate energy sources such as solar photovoltaic panels and energy from landfill waste to energy plants is also fed into the grid. All excess is returned to the local grid



# HIGHWAYS PROMOTE SPRAWLING INDUSTRIAL DEVELOPMENT PATTERNS. MISSION ZERO CORRIDOR PROVIDES A MODEL FOR SUSTAINABLE INDUSTRIAL DEVELOPMENT.

## CONCEPTS



**EXISTING SITE**  
LAGRANGE LIGHT MANUFACTURING DISTRICT, INTERFACE AND AIRPORT SERVE AS ANCHOR INSTITUTIONS



**EXISTING PUBLIC REALM**  
INFRASTRUCTURE + WATER, STREETS, RAIL, AIRPORT, TRAM TRAIL AND WATER SYSTEMS SERVE AS FRAMEWORK



**EXISTING INDUSTRIAL**  
LIGHT MANUFACTURING FACILITIES, SCATTERED INDUSTRIAL FACILITIES WITHOUT APPROPRIATE ADJACENCY TO HOUSING,



**PROPOSED ECO-INDUSTRIAL**  
LOCAL RESOURCE TRANSPORT INFRASTRUCTURE, EMISSION FREE LOCAL STREET CAR SYSTEM FOR HUMAN + MATERIAL TRANSPORT, LOCAL SERVICES + FACILITIES  
RESOURCE RECOVERY + LOCAL COLLECTORS, LOGISTICS + TRANSIT HUB, CONSOLIDATED PARKING

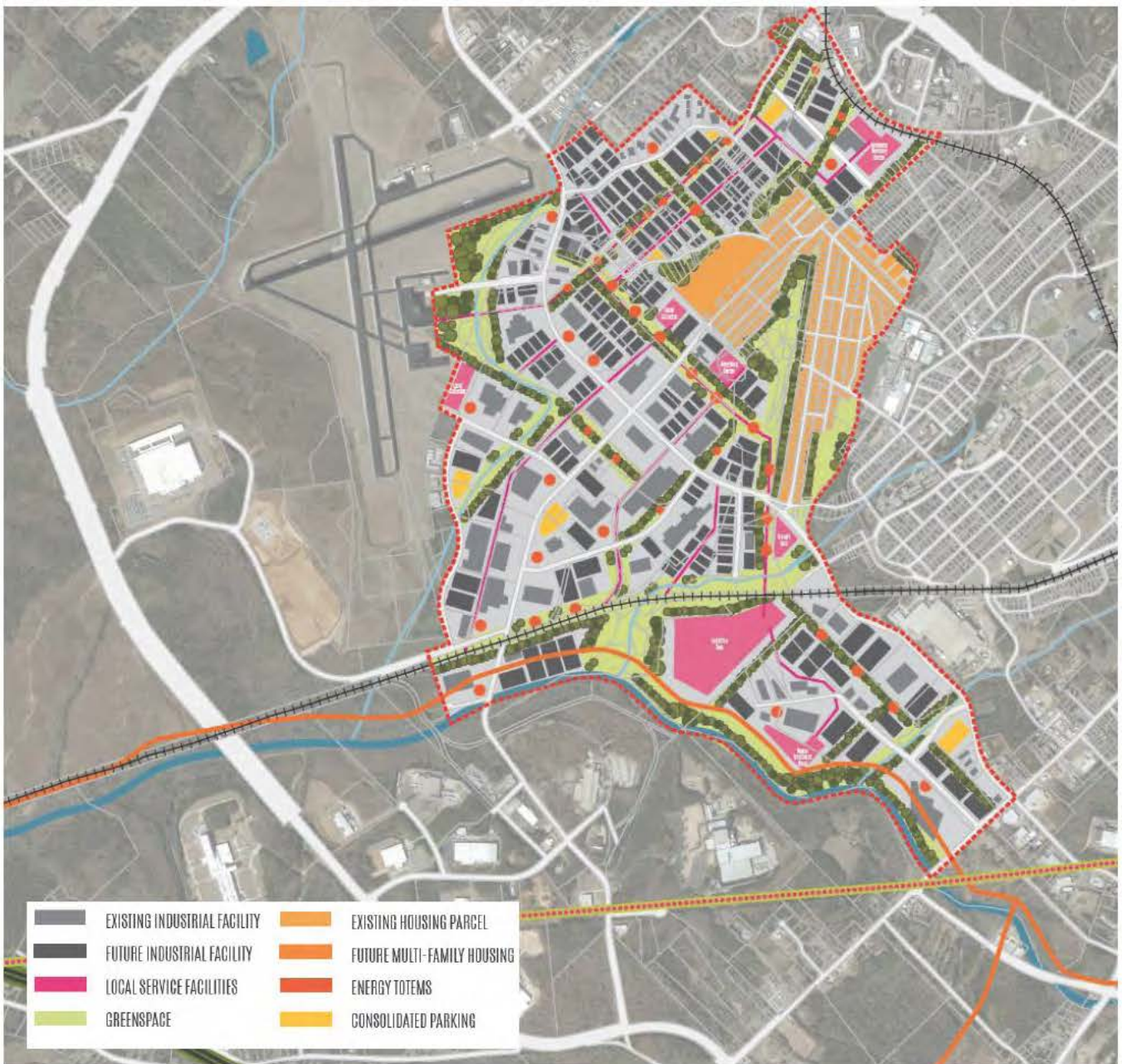


**PROPOSED PUBLIC REALM**  
GREENSPACE FRAMEWORK, GREENSPACE SERVES TO CREATE PUBLIC SPACE, CREEK BUFFER + HOUSING BUFFER



**PROPOSED ECO-INDUSTRIAL**  
ENERGY TOTEMS, RENEWABLE ENERGY PRODUCTION + ENHANCING PUBLIC AWARENESS/IDENTITY, ECO-INDUSTRIAL FACILITIES, CREATING DENSITY FOR BUILT FABRIC

# ECO-INDUSTRIAL DISTRICT



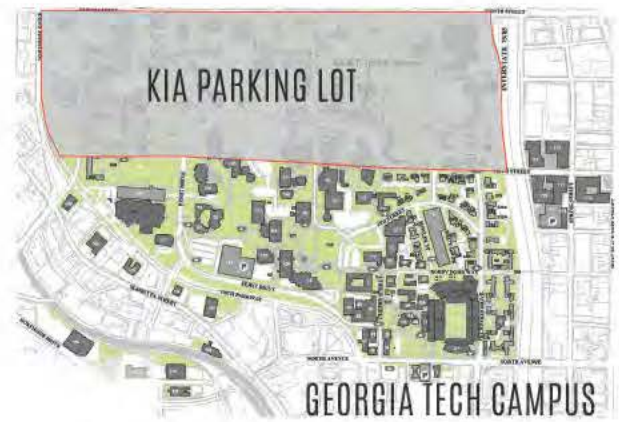




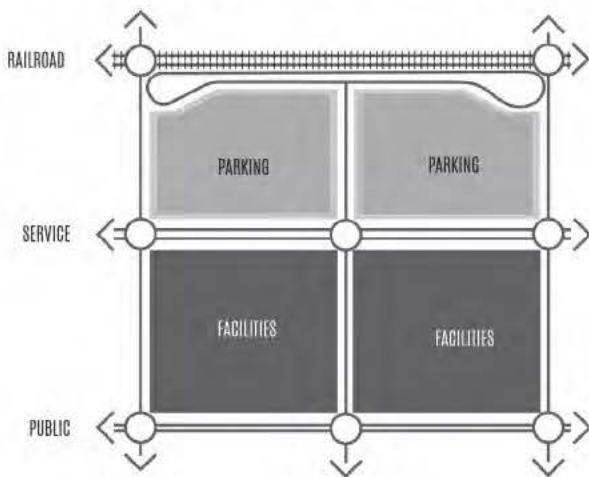
# KIA MOTORS INDUSTRIAL ZONE

## STRATEGIES

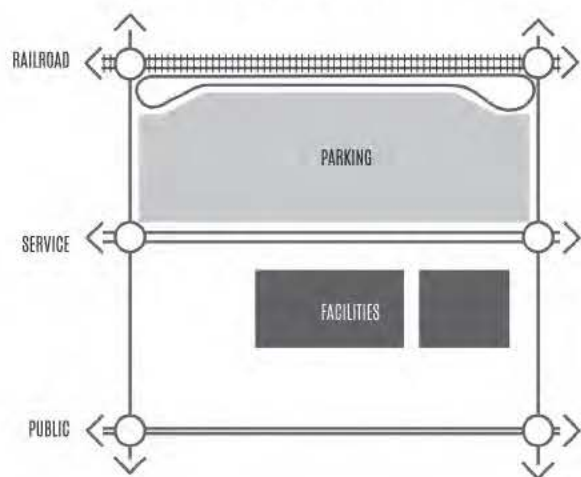
KIA Motors is a major industry on the corridor, which makes it a major influencer of other industrial developments. While the manufacturing plant is already constructed, adjacent parcels owned by KIA are held for potential expansion. Close attention to how these parcels are utilized is important for aiding in the reflection of the goals of the Mission Zero Corridor. Consolidation of needs and responsible and sustainable growth methods should be considered.



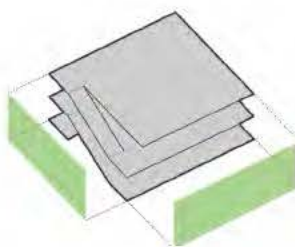
### IDEAL PLANT CONFIGURATION



### EXISTING PLANT CONFIGURATION

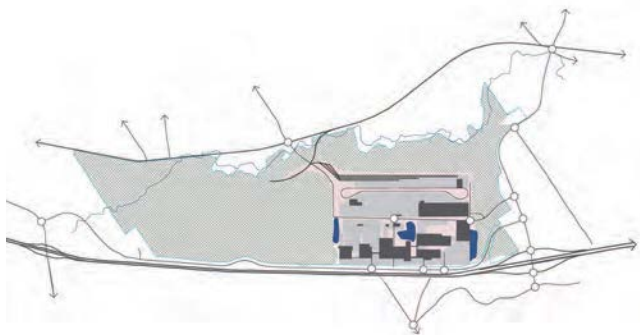


GREEN WALL PARKING DECKS



# THE KIA MOTORS INDUSTRIAL ZONE IS A GROWING HUB FOR COMMERCE AND INDUSTRY. MISSION ZERO CORRIDOR SEEKS TO CONTINUE THE GROWTH OF THIS ZONE WITH RESPONSIBLE AND SUSTAINABLE INDUSTRIAL GROWTH.

## DENSITY



## RENEWABLE ENERGY GENERATION



## RESOURCE SHARING



## WATER QUALITY AND MANAGEMENT



# KIA MOTORS INDUSTRIAL ZONE





**LOW IMPACT DEVELOPMENT**



**HYUNDAI CHATTANOOGA PLANT SOLAR FARM**



**FIAT LINGOTTO PLANT WITH TRACK ON ROOF**



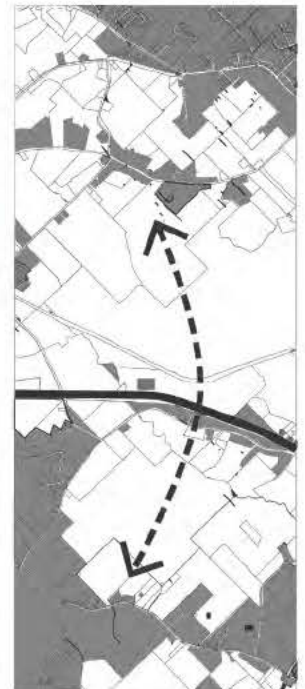
**FORD MANUFACTURING PLANT GREEN ROOF**



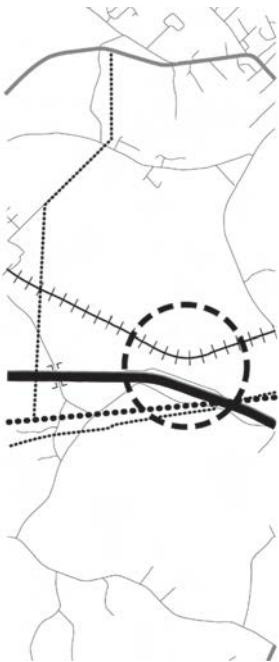
# LONG CANE WATER DISCOVERY PARK

## STRATEGIES

Long Cane Creek parallels the corridor and should be viewed as an amenity to foster community and to better integrate the highway and surroundings. The creek is also critical for water quality management. Water must be first cleaned through filtration systems before entering the creek, and proper vegetation should be reintroduced to aid in that process. Then, it is important to create a place for people to interact and understand these processes, and hopefully become better stewards of water quality after experiencing the dynamic qualities of the site.



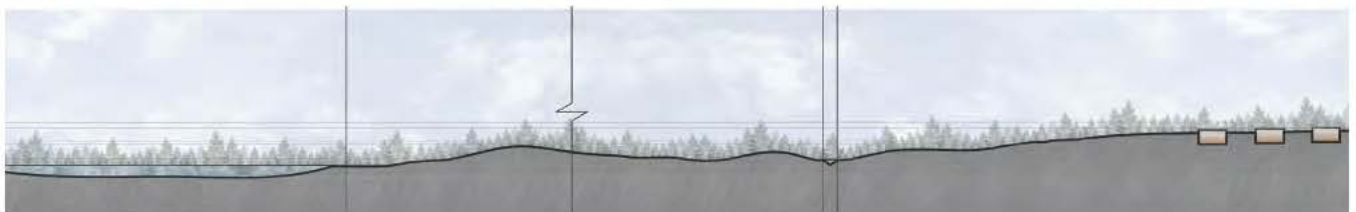
# HIGHWAYS AFFECT NATURAL WATER ECOSYSTEMS. MISSION ZERO CORRIDOR RESTORES AND PROTECTS NATURAL WATER ECOSYSTEMS THROUGH COMMUNITY PARTNERSHIP AND EDUCATION.



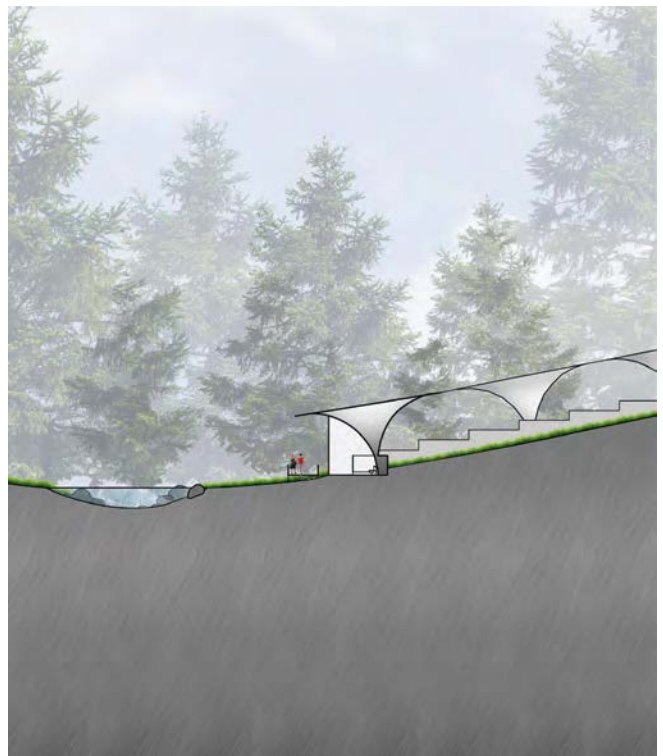
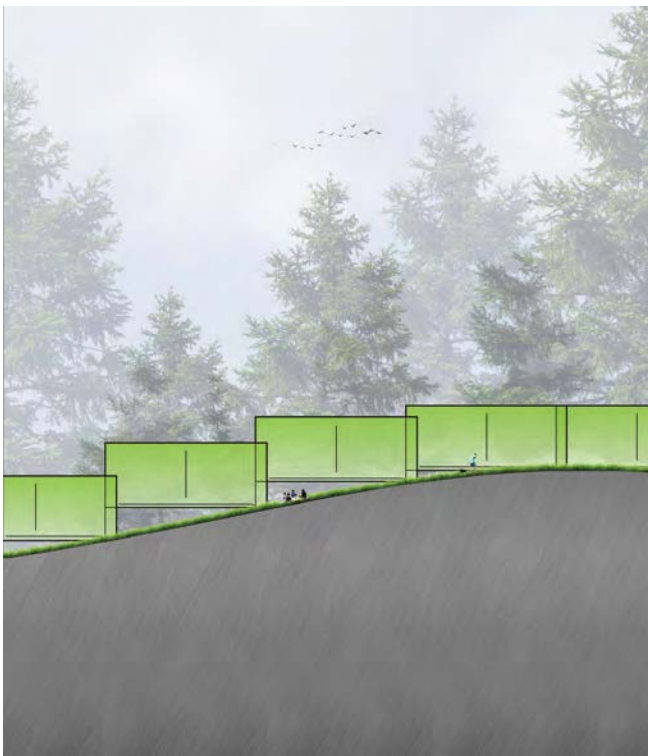
1. **Hydrology:** clean water before it converges into Long Cane Creek
2. **Vegetation:** give fauna a place to cross the highway
3. **Zoning and Parcels:** use small end of LaGrange Partners LLC-owned acreage to “manufacture” water and for playgrounds
4. **Current Developments:** provide connections for those who do not own vehicles
5. **Infrastructure:** carve out places where people can experience the dynamic qualities of the site
6. **Proposed Long Cane Water Discovery Park**

# LONG CANE WATER DISCOVERY PARK

## Site Sections







# SUSTAINABLE HIGHWAY DESIGN

## STRATEGIES

The utilization of sustainable technologies along the corridor will add to the identity piece as well as begin to fulfill the reimagining of what the purpose of a highway is and how resource efficiency and generation can be a part of that. The Blueprints studio envisions several ways the highway can showcase innovative technologies and set a new standard for our cross-country infrastructure.

### Highway Trash Trap

Designated litter zones marked by trash traps allow litters to deposit their trash in one location easing pollution and making litter collection more efficient.



### Green Walls

A wall system that creates a barrier for animals from reaching the highway as well as keeping highway noise contained. The wall can be inlaid with vegetation and house the photo-bioreactors.

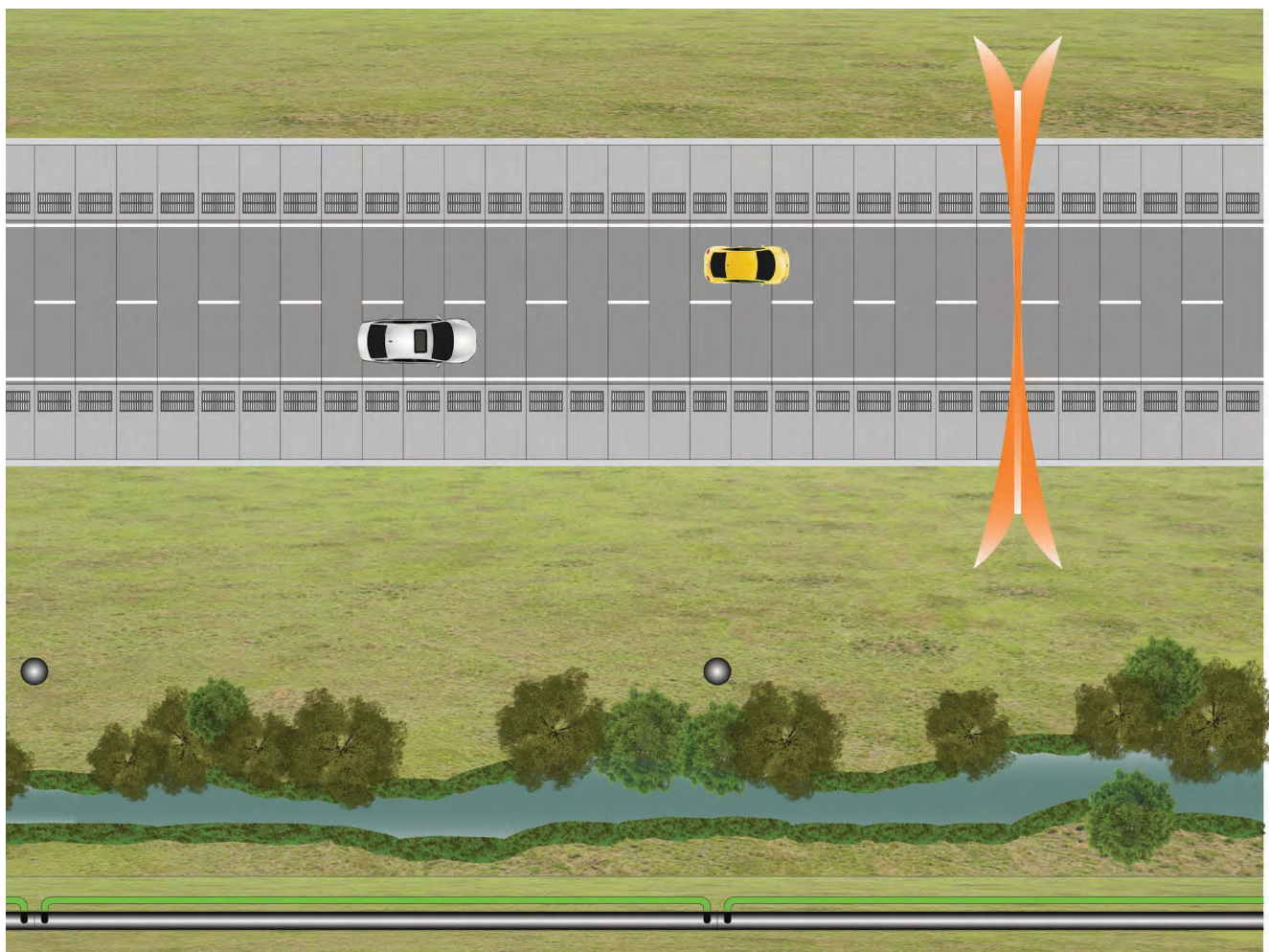
#### NATURAL VEGETATION GREEN WALL



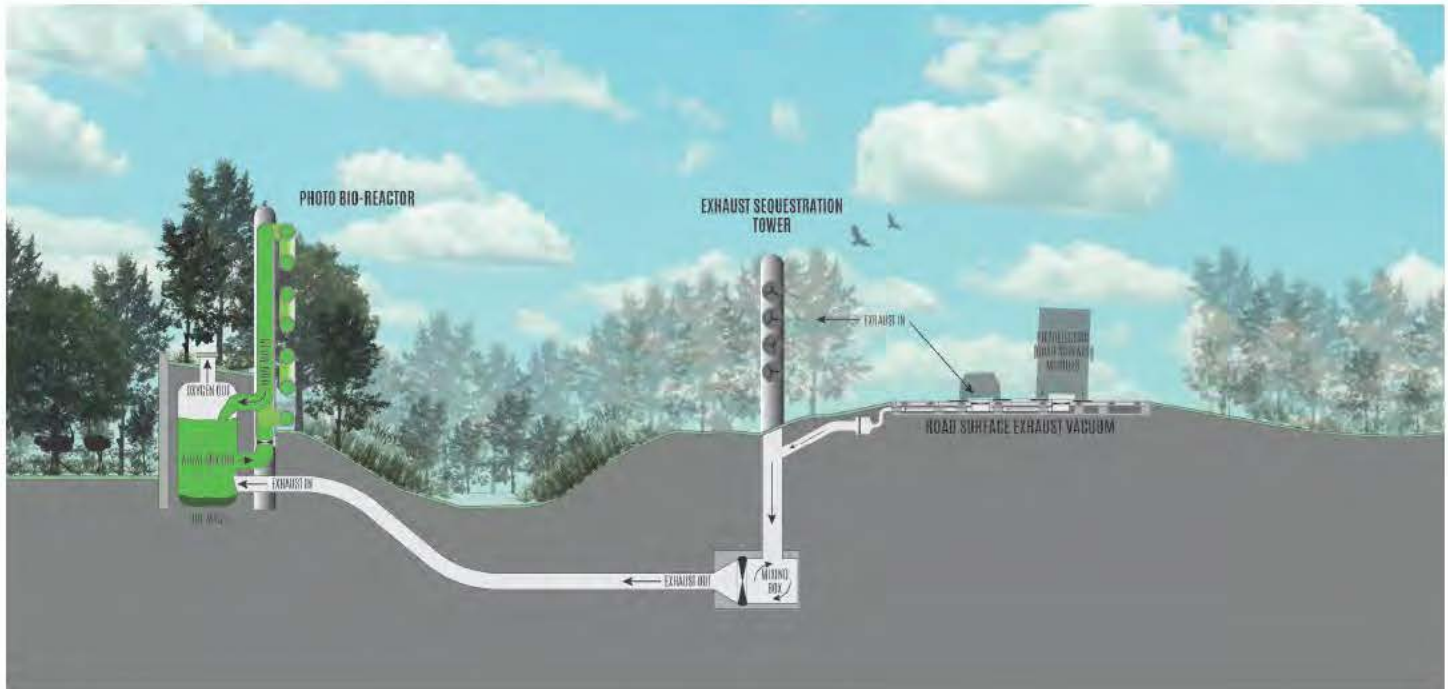
#### MECHANICAL GREEN WALL



**HIGHWAYS ARE A LEADING CAUSE FOR ENVIRONMENTAL POLLUTION AND DEGRADATION. MISSION ZERO CORRIDOR IS A TEMPLATE FOR RESTORATIVE AND SUSTAINABLE INTERSTATE HIGHWAY INFRASTRUCTURE SYSTEMS.**



# SUSTAINABLE HIGHWAY DESIGN



## Troup County

- Population of 69,053 persons in 2013
- 14,578 Kwh consumption per person (georgia)
- 1.66 Kw per person, per year
- 115 Mw approximate energy demand per year
- 250 Tons of co2 emitted daily on 16 mi hwy
- 93,532 Tons of Co2 emitted annually on 16 miles
- 73,285 Acres of forest needed to offset Co2
- 9.4 Million gallons of fuel burned 16 miles
- 6,729 Pieces of litter every mile on average hwy

## Algae Photo-Bioreactors

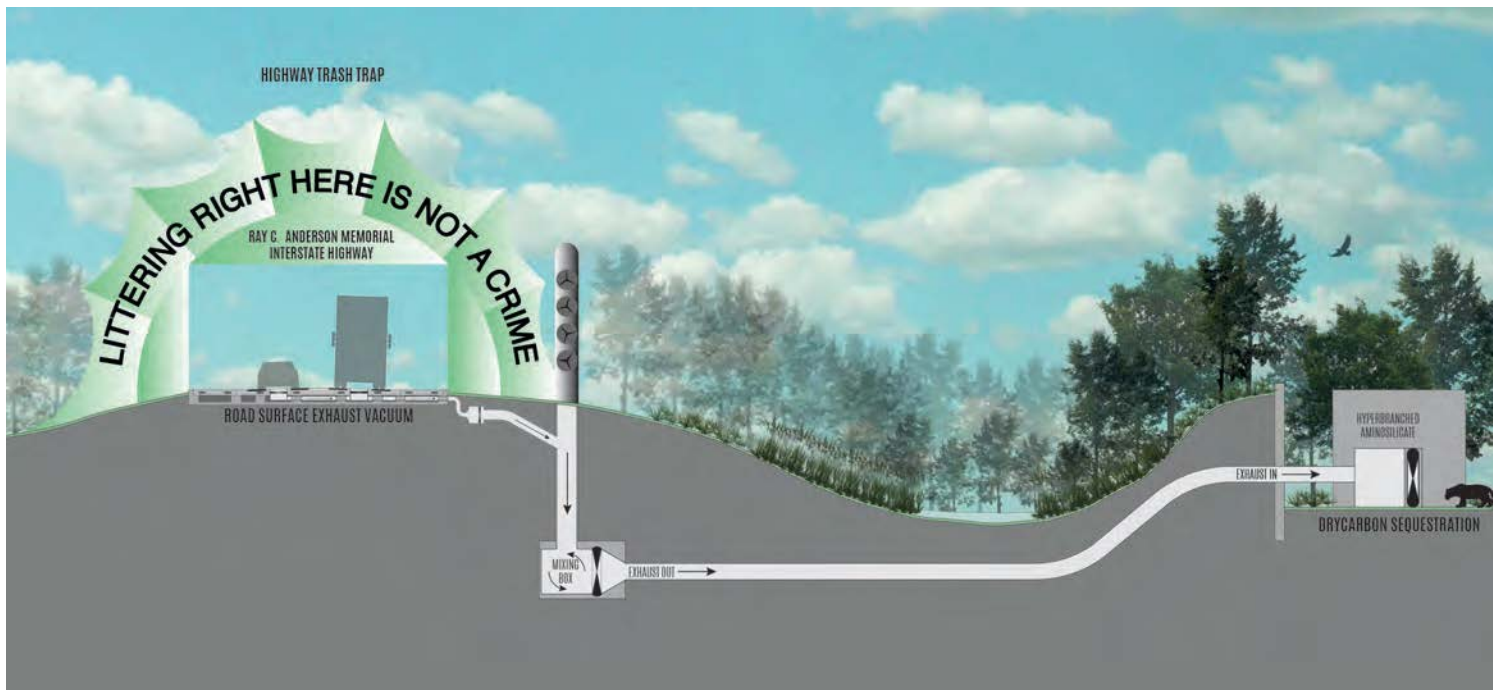
- Uses photosynthesis to produce oxygen
- 1 lb of biomass absorbs 2 lbs of Co2
- Liquid based method vs expensive gas compression

## Skymining By Skyonic

- Ability to remove 99% of pollutants
- Process incurs a profit with sale of byproducts
- Process converts Co2 gas to a solid form

## Highway Trash Trap

- 72' Diameter Shield Collects From Moving vehicles
- Shield Is Perforated To Allow Air Flow
- Shield Is Easily Removed To Clean And Replace
- Shield Provides Advertisement Opportunities
- Promotes Public Ownership Of Highway



## Piezoelectric

- 0.25 W / 225 sqmm (Virginia Tech)
- 250 W / sqft (64% efficiency, 100 mpa load)
- 1 Km strip has 9,800 piezoelectric units per lane
- Max capacity - 44 semi-trucks per km
- 440 Piezo-units activated at one time (4.5%)
- Each unit produces .1 W
- 980 W per km (.045) = 44W per km
- 44W x 4 lanes of traffic = 176w per km (max)
- 4.5 Kw per 16 miles
- \$650,000 - \$1,000,000 Per mile installed
- 4.5 Kw x 8760 hours = 39,420 kwh
- 39.4 Mw electricity produced per year (34% of Troup County energy consumption)

## Photovoltaics

- 6 Sunhours per day, 2190 hours per year (Georgia)
- 4-5 Kwh / sq m or .06 Kw / sq ft
- 16,155 Sq ft produces 1 mw of electricity
- 43 Acres of solar panels needed to offset demand
- Solar electric is typically \$4-5 per watt installed
- 1 Mw of solar electric costs \$5 million installed

## Modular Highways

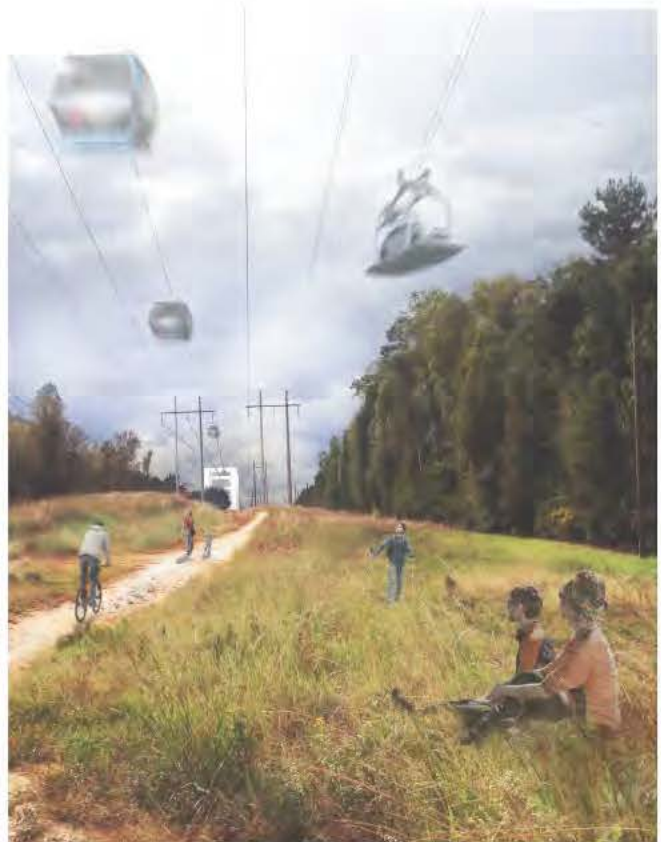
- Cuts road work time in half
- Reduces consumption of asphalt
- Easily replaceable, able to be modified

# TROUP COUNTY AIR TRAM

## STRATEGIES

Alternate forms of transportation can help alleviate some of the major issues related to highways. Highways can connect people and goods that are geographically distant. Local roads can connect people and goods that are adjacent. But for trips in between and for people without vehicular transport, alternate methods can offer a mid range option of transport. For rural situations, air trams are inexpensive, highly efficient, and sympathetic to the ecosystems they cross. By making use of the existing power line infrastructure which so often parallel highways and burying the radiation emitting power lines, air tram systems can become even more sustainable.

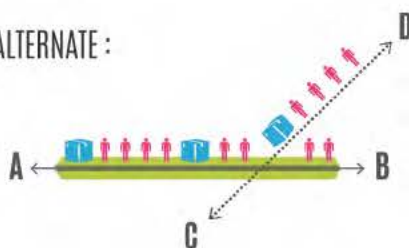
The major power lines that parallel the highway are wide enough and straight enough to support air trams, which need straight lines (Where there are bends there need to be transfer stations). The secondary power lines which feed industries and houses are less compatible. Therefore, for the core tram line along the highway will use existing pylons. The air tram systems that support the stations off of the interstate and into the cities will make use of new pylons.



### HIGHWAY ALONE:



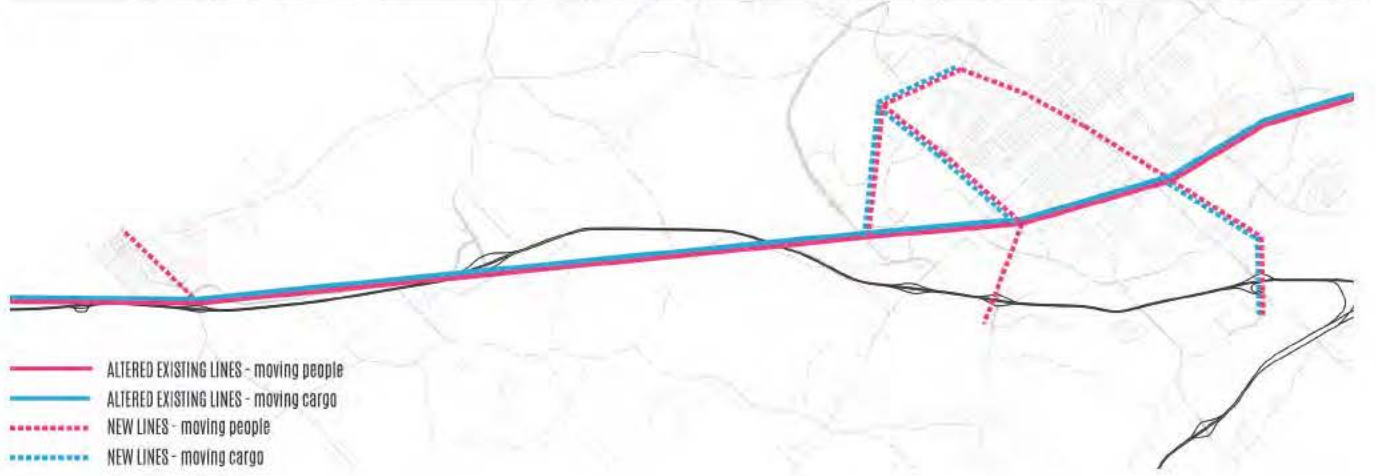
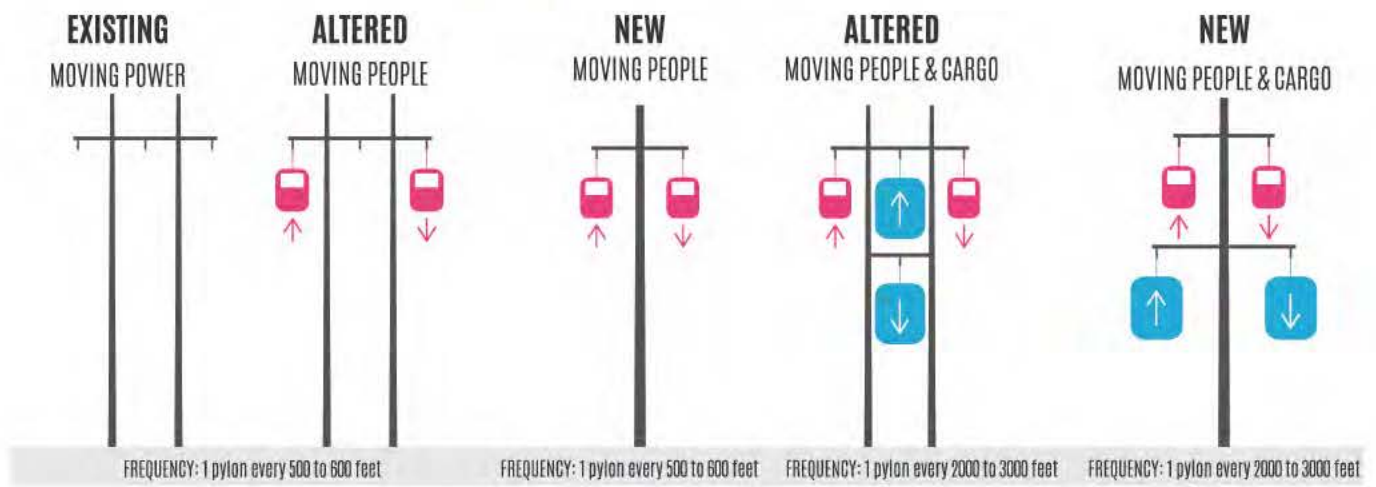
### HIGHWAY + ALTERNATE:



### REUSING EXISTING FRAMEWORK



# HIGHWAYS ATTRACT OTHER FORMS OF INFRASTRUCTURE THAT CAN HAVE MULTIPLE FUNCTIONS. MISSION ZERO CORRIDOR RECOGNIZES THESE AREAS OF OPPORTUNITY AND ENCOURAGES SUSTAINABLE DEVELOPMENT OF ALTERNATIVE TRANSPORTATION.



# TROUP COUNTY AIR TRAM



## STATIONS

Stations will be located firstly by the locations where the existing major power lines bends. Secondly the will be located to where people and goods need to move. For high density areas, such as downtown LaGrange, multiple stations will be located such that commuters will not have to travel more than a mile to get to a stop





Portland, Oregon - Air Terminal



London, England - Air Terminal



Ordos, Mongolia - Illusion Station

# RAY GATES AND LEGACY CENTER

## STRATEGIES

Identity is a critical part of the future highway framework as it is what connects the ideas to the users and begins to influence changes in behavior and heightened awareness. The studio developed Ray Gates and a Legacy Center to build this identity while also commemorating and memorializing the life of Ray Anderson.

### RAY GATES

#### 1. PERFORMATIVE

Performative Ray Gates are not only markers, educational, and informational, but they help to produce and embody the idea of infrastructure being sustainable. They will help to produce alternative energy, mitigate pollution, and create alternative ecological habitats.

#### 2.COMMEMORATIVE

Commemorative Ray Gates are markers, educational, and informational, and though they may have some sustainable attributes they are more commemorative than productive.

### LEGACY CENTERS

#### 1. BUILDING

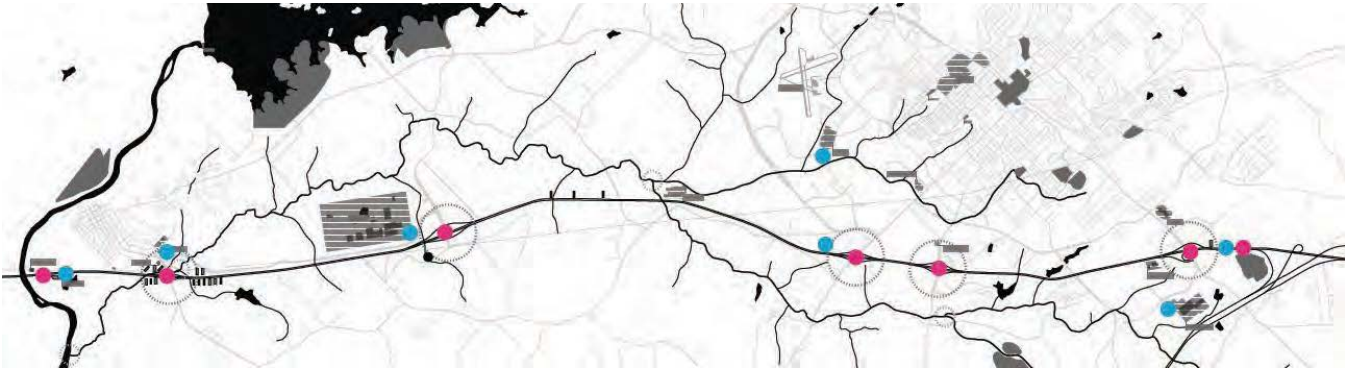
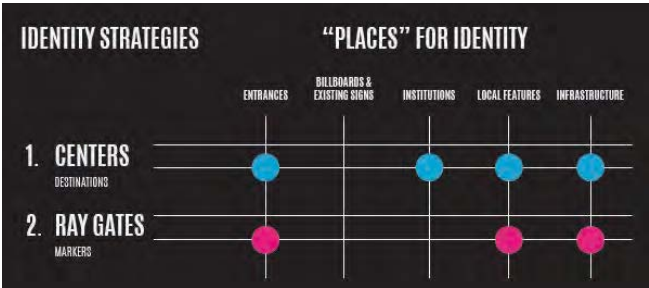
Building Centers are enclosed, but they are educational, informational, and markers. Enclosed Centers are environmentally responsible, and will not only educate through visuals, but act as a performative entity that embodies sustainability.

#### 2.LANDSCAPE

Landscape Centers are not enclosed, or heated, and are less intrusive on the environment. They are educational, informational, and markers, but are more sculptural in nature.



**RAY C. ANDERSON WAS AN INFLUENTIAL LEADER WHO LEFT A LASTING LEGACY. MISSION ZERO CORRIDOR CONTINUES THE LEGACY OF RAY C. ANDERSON WITH HIGHWAY GATES AND EDUCATIONAL CENTERS PROMOTING HIS MESSAGE.**

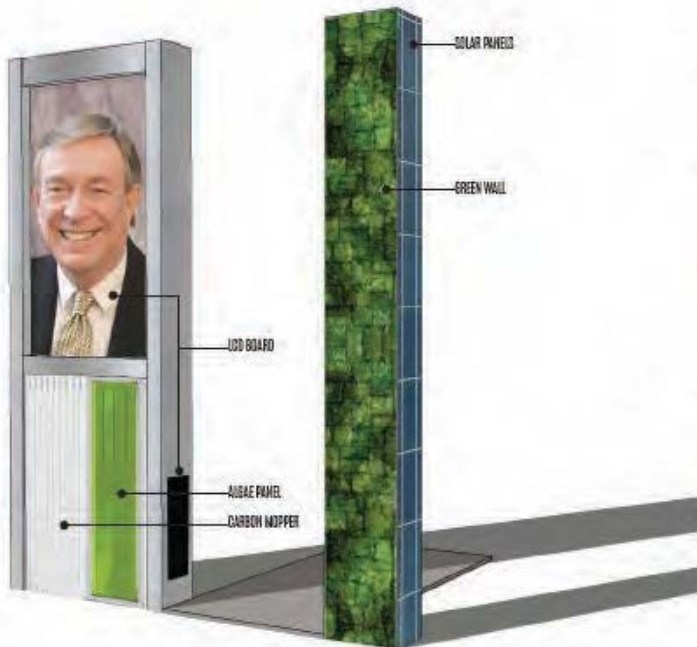


# RAY GATES AND LEGACY CENTER





LEGACY CENTER ELEVATION



PERFORMATIVE RAY GATE



RAY GATE COMPONENTS

## THE GOAL

# IT IS THE ASPIRATION OF MISSION ZERO CORRIDOR TO USE HIGHWAYS AS A TOOL FOR CHANGE.

When we look at the legacy that Ray Anderson left for us, we can see a vision, a powerful vision that changed his business, Interface, and his entire industry. Mission Zero strives to bring human activities and natural systems into a balance on which future generations can thrive.







The Mission Zero Corridor allows us to see highways, and infrastructure in general, through Ray Anderson's lens. A lens that can see highways operating at their full potential, well beyond the prevalent view that highways are simply conduits of cars and trucks.

Mission Zero Corridor will be the first sustainable highway, serving as a replicable model worldwide through a focus on people, place and technology. The sustainable highway will be restorative, generative, responsible, respectful, informative and net zero.



# MISSION ZERO 2020 CREATED A FRAMEWORK THAT CATALYZED POWERFUL CHANGES IN THE BUSINESS INDUSTRY AT A GLOBAL SCALE.

## MISSION ZERO CORRIDOR IS A FRAMEWORK FOR HIGHWAYS TO REACH THE SAME GOALS.

PROBLEM		PATH
ENVIRONMENTAL POLLUTION	→	 POLLUTION REMEDIATION
RESOURCE SQUANDERING	→	 RESOURCE EFFICIENCY
HABITAT DEGRADATION	→	 WILDLIFE CONSERVATION
SAFETY HAZARDS	→	 LIFE SAFETY
SOCIAL RAMIFICATIONS	→	 CULTURAL EXCHANGE
LACK OF AWARENESS	→	 CHANGING ATTITUDES

## THE WAY FORWARD

The Mission Zero Corridor *Blueprints* project has already begun implementation in the form of bringing education and awareness to the local stakeholders in Troup County, the City of West Point and the City of LaGrange. The community is very supportive and understands the potential this type of project can bring to the area. It will be important to capitalize on the gained momentum and make incremental changes to the highway, based on the designed framework, maintenance schedule, and funding. The highway will become a showcase for sustainability and ecological experimentation.

**This is just the first step in a long journey towards Mission Zero Corridor. This studio established a vision and a framework for others to carry this project forward.**

### EDUCATE ON PATHS TO SOLUTIONS



#### POLLUTION REMEDIATION



#### RESOURCE EFFICIENCY



#### WILDLIFE CONSERVATION



#### LIFE SAFETY



#### CULTURAL EXCHANGE



#### CHANGING ATTITUDES

### DEVELOP PARTNERSHIPS AND BUY-IN

#### LOCAL INFRASTRUCTURE

County and Local Governments  
Civic offices  
Utilities

#### ECOLOGICAL SYSTEMS

Wildlife Management  
Forestry Divisions  
Environmental Protection

#### SOCIAL SYSTEMS

Public Opinion  
Community Use  
Future Goals



**LET'S BEGIN A NEW HISTORY.  
LET'S BUILD A BETTER WORLD  
FOR TOMORROW'S CHILD.**

**APPLY STRATEGIES**

**[1] RESPONSIBLE DEVELOPMENT**

**[2] REPURPOSE WASTE SPACE**

**[3] CONSERVATION & ECOLOGICALLY SENSITIVE DEVELOPMENT**

**[4] RESPONSIBLE INDUSTRIAL DEVELOPMENT**

**[5] ECOSYSTEM RESTORATION**

**[6] POLLUTION REMEDIATION**

**[7] CORRIDORS**

**[8] IDENTITY**

**ACHIEVE GOAL**

**RESTORATIVE**

●  
|  
**GENERATIVE**

●  
|  
**RESPONSIBLE**

●  
|  
**RESPECTFUL**

●  
|  
**INFORMATIVE**

●  
|  
**NET-ZERO**



**2040**

**IT IS THE ASPIRATION  
OF MISSION ZERO®  
CORRIDOR TO CREATE  
A HIGHWAY THAT  
IS ONE WITH ITS  
ENVIRONMENT.**

## THE TEAM:

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Troup County



Pictured left to right:  
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