

THE EFFECTS OF AUTOMOBILE DEPENDENCE ON U.S. CITIES

THE CASE STUDY OF LOUISVILLE KY IN ITS EFFECTS, INFLUENCE, AND POSSIBILITIES OF REVIVAL.

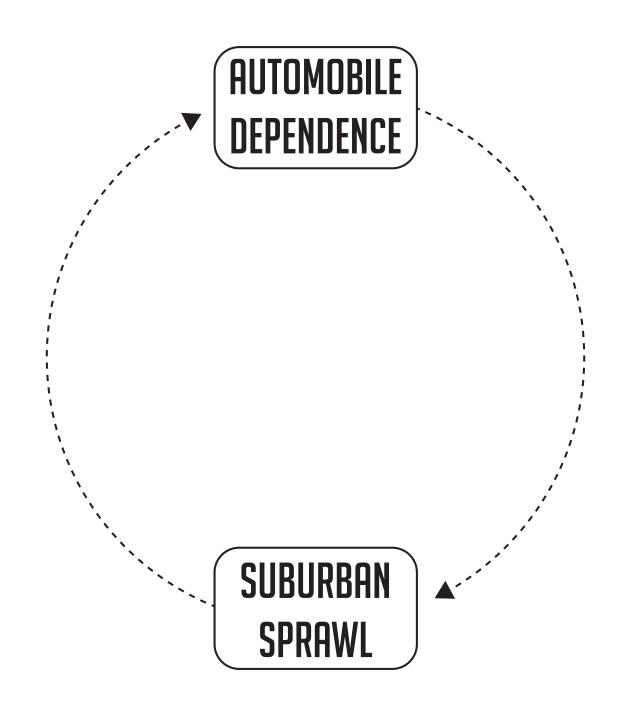
Amanda Bryant [4612809] Mentors: Rients Dijkstra and Vincent Nadin

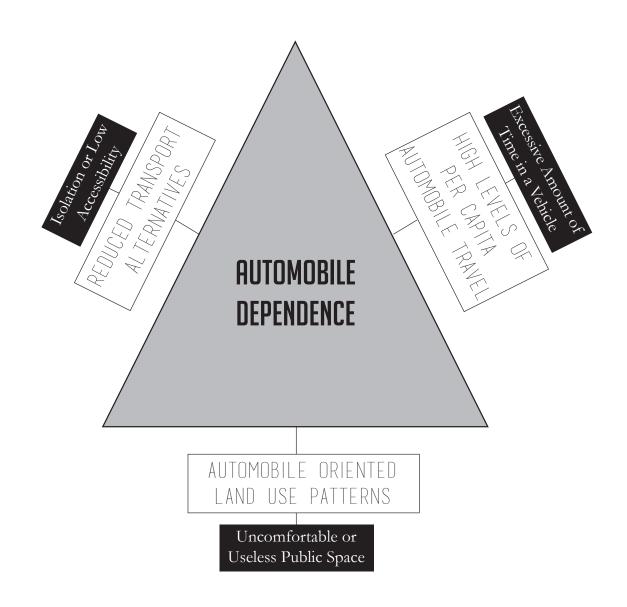
COLOPHON

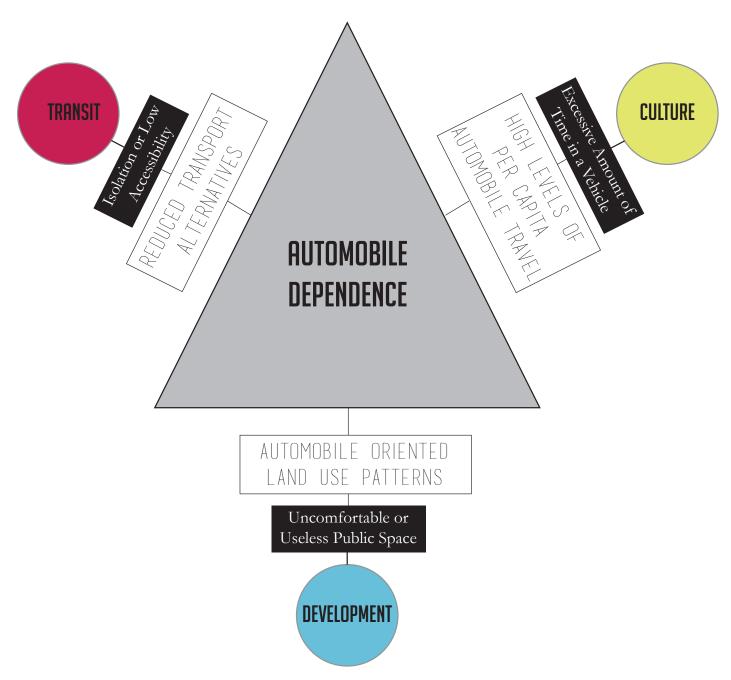
Master Thesis P5 Presentation July 2018

Amanda Bryant
MSc Urbanism
TU Delft Faculty of Architecture

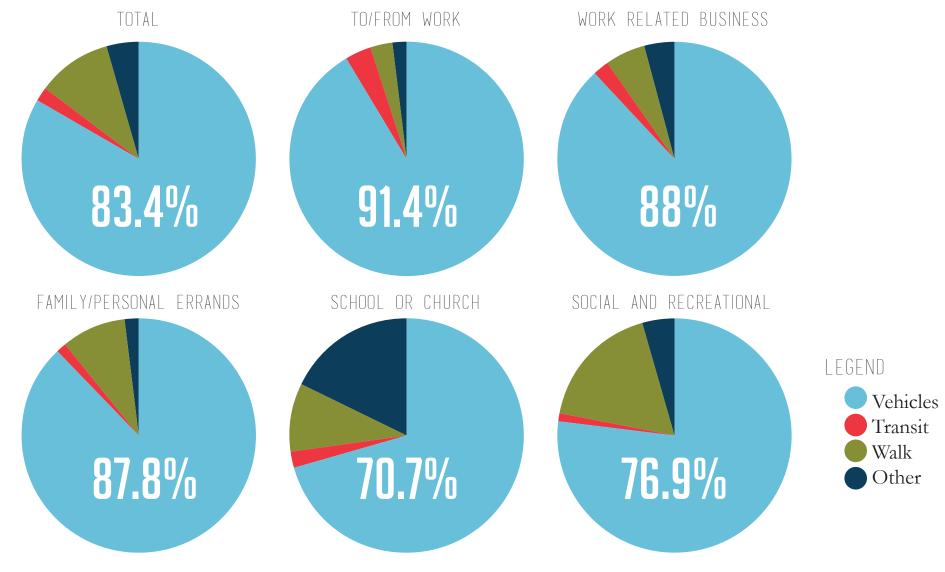
Design of the Urban Fabric First Mentor: Rients Dijkstra Second Mentor: Vincent Nadin





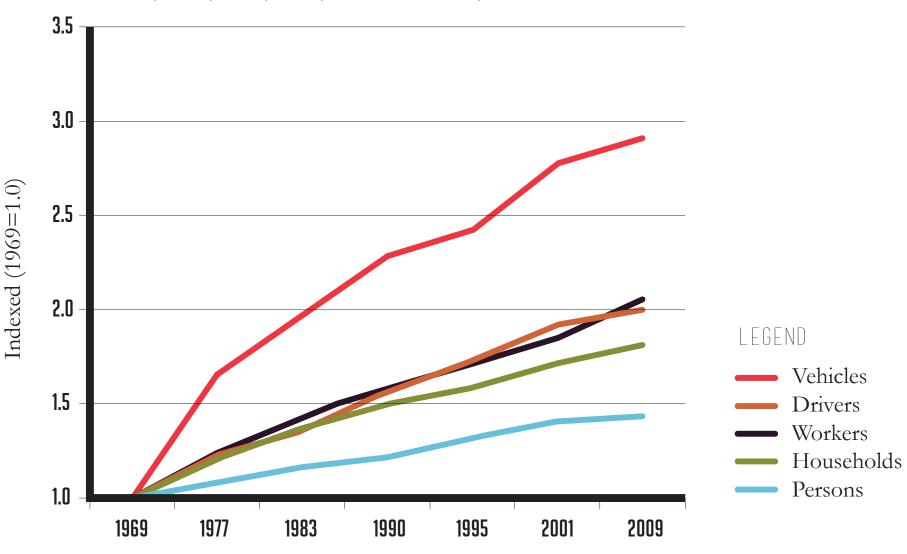


Percent of Person Trips by Mode of Transportation and Trip Purpose 1990, and 1995 NPTS, and 2001 and 2009 NHTS

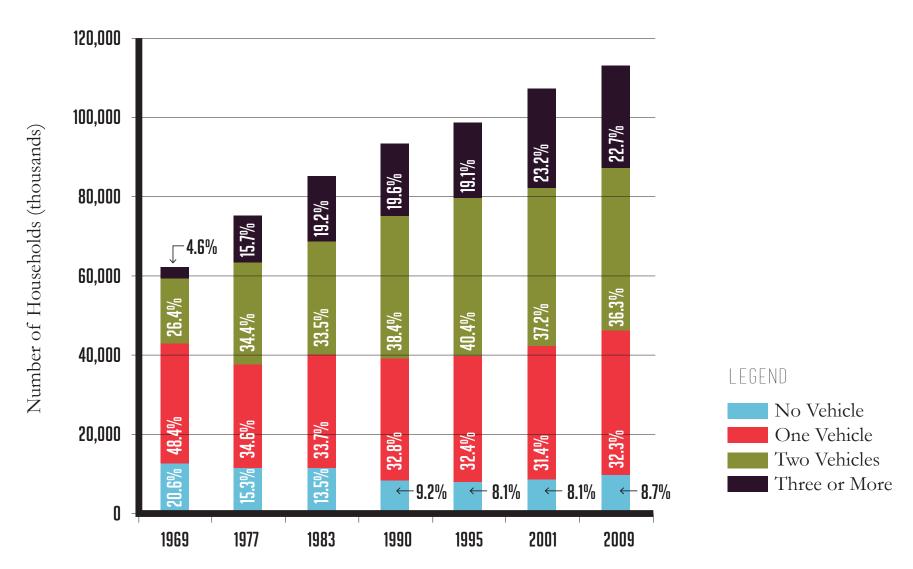


STEMSTES THAT SUPPORT THE U.S. IS AUTOMOBILE DEPENDENT

Changes in Summary Statistics on Demographics and Total Travel 1969, 1977, 1983, 1990, and 1995 NPTS, and 2001 and 2009 NHTS



Trend in Household Distribution by Number of Household Vehicles 1969, 1977, 1983, 1990, and 1995 NPTS, and 2001 and 2009 NHTS



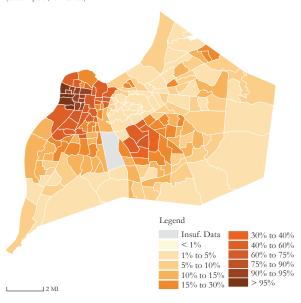






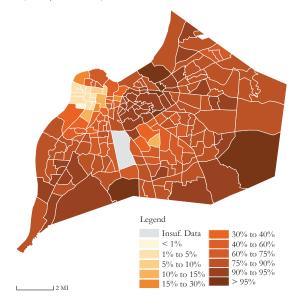
RACE

Percent of Black alone (Social Explorer, 2010 Census)



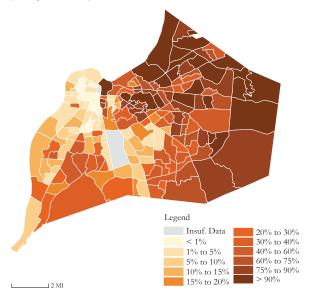
RACE

Percent of White alone (Social Explorer, 2010 Census)



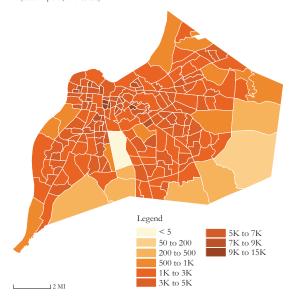
PROPERTY VALUE

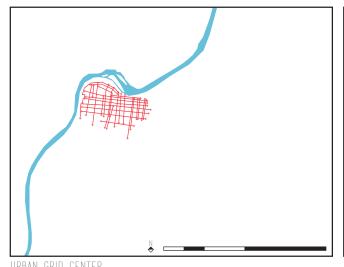
Percent of Owner Occupied Housing worth more than \$150,000 (Social Explorer, 2010 Census)

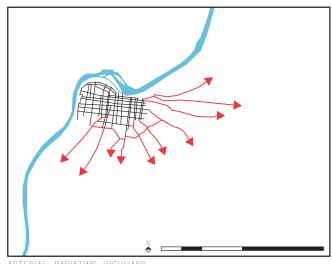


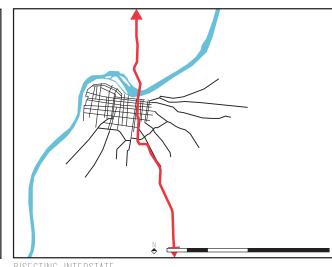
POPULATION DENSITY

Number of people per square mile (Social Explorer, 2010 Census)





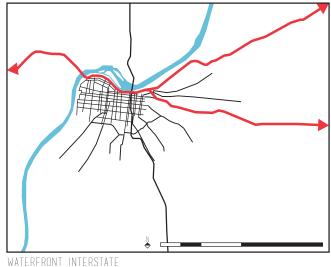


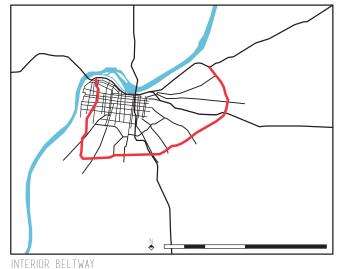


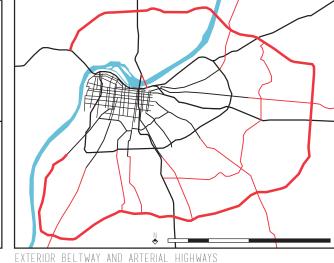
URBAN GRID CENTER

ARTERIAL RADIATING HIGHWAYS

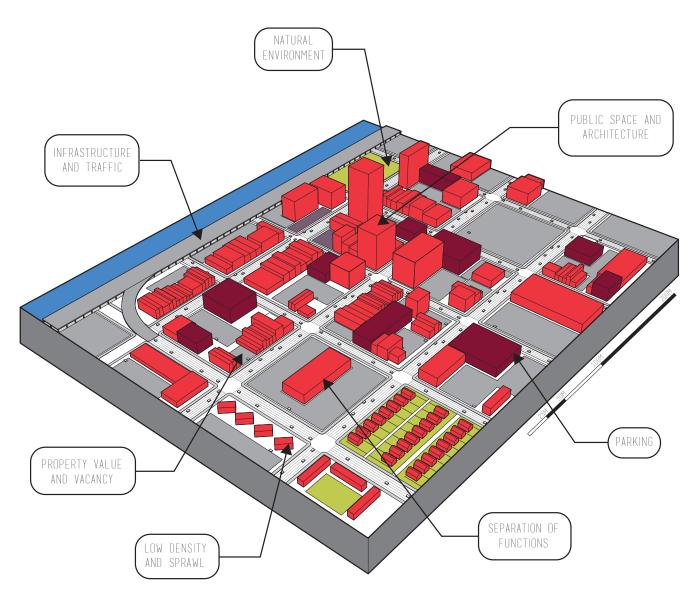
BISECTING INTERSTATE

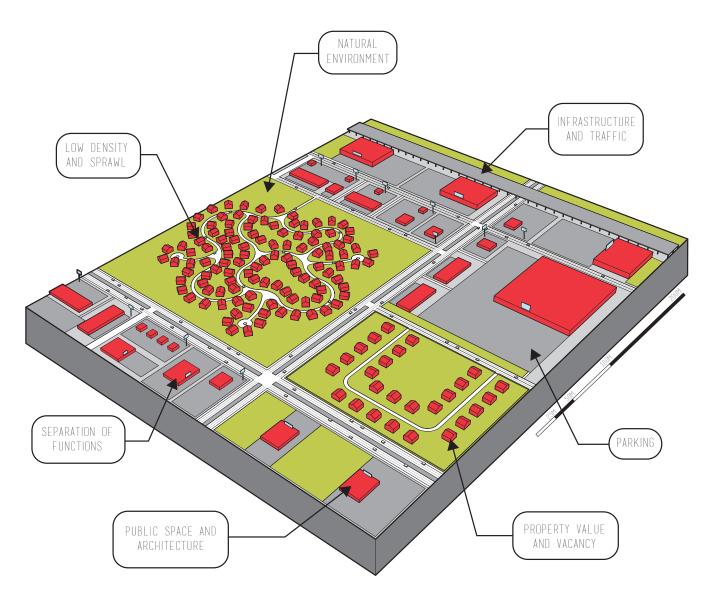


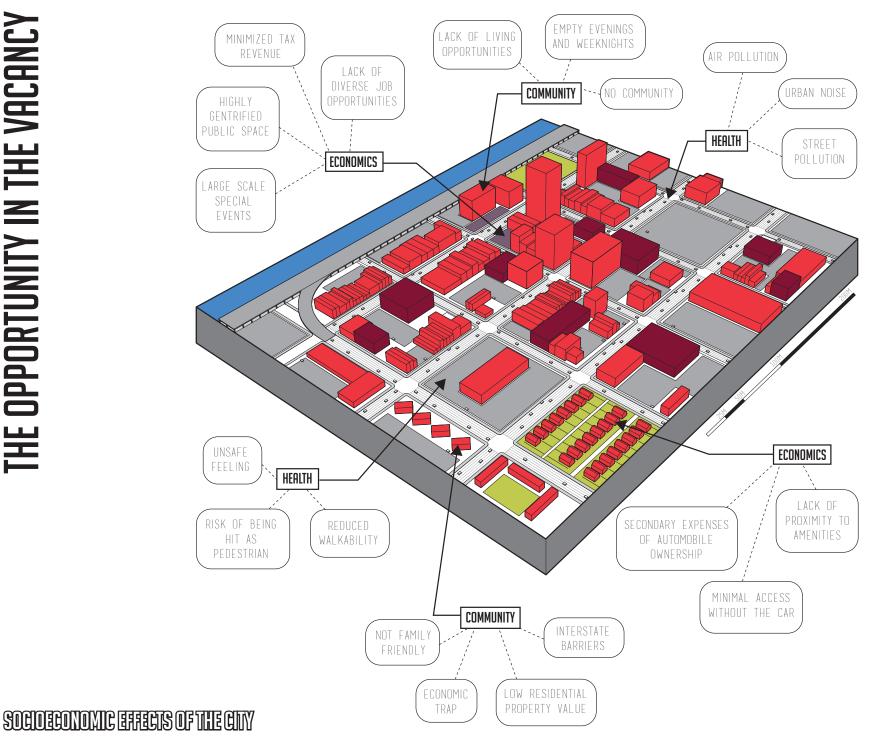




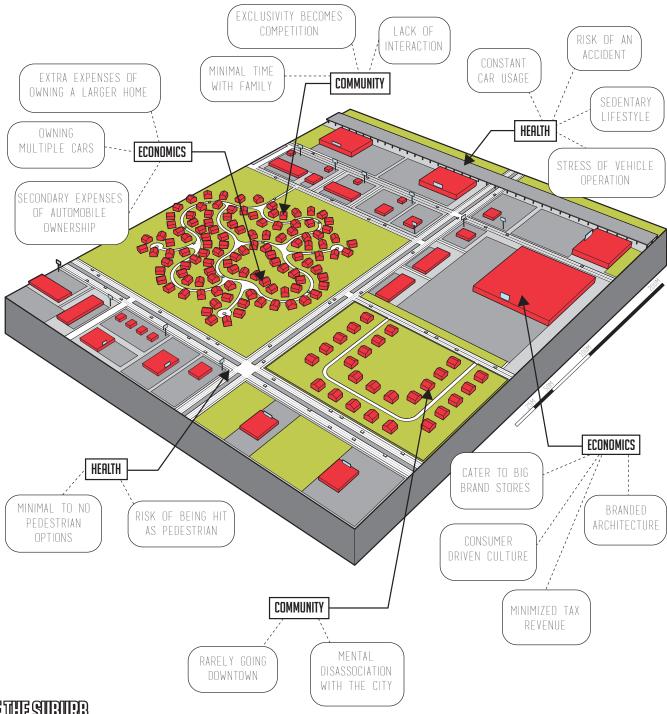
LOUISVILLES INFRESTRUCTURE DEVELOPMENT OVER TIME

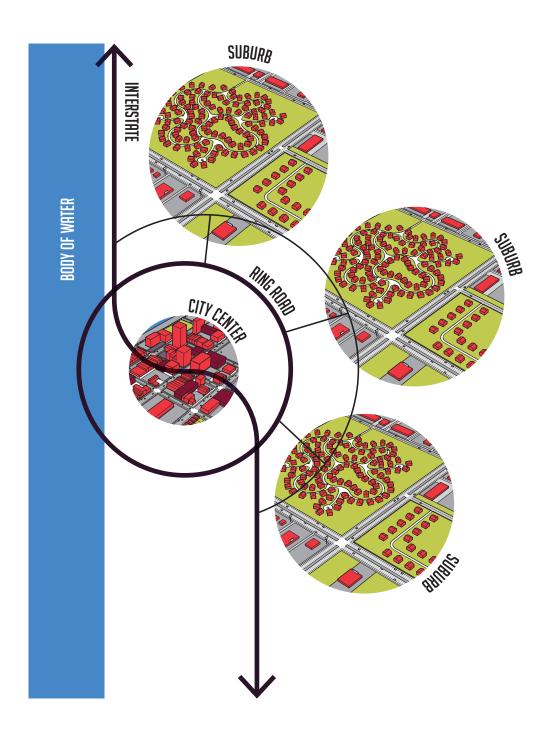


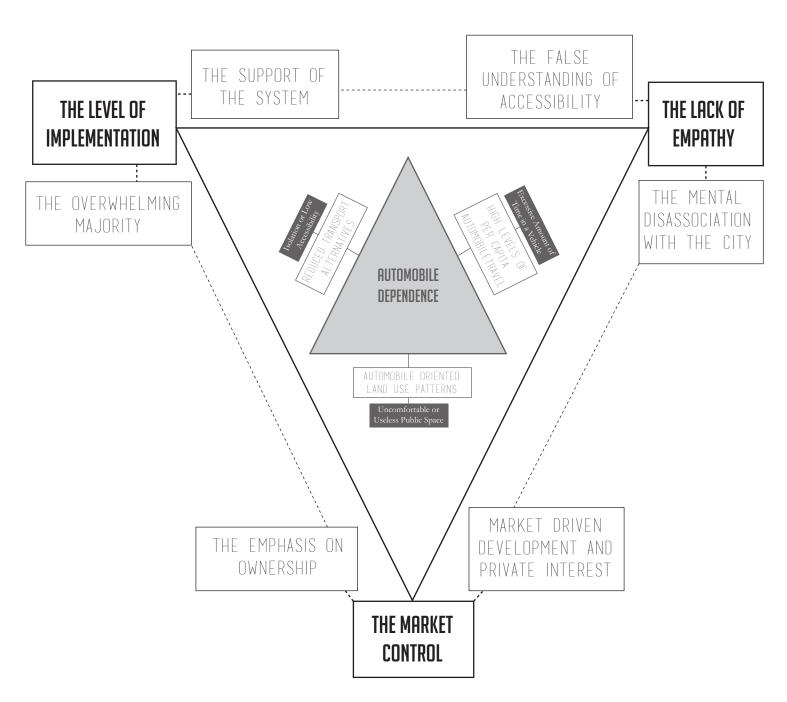




Source: Author







COMMON CRITICISMS

THE DEMAND

Critics argue that there is little demand for public transit and consumers prefer to live in automobile dependence and suburban sprawl.

THE EXCLUSION

Critics argue that public transit and smart growth harms disadvantaged people by reducing affordability.

THE CONNECTION

Critics argue that there is insufficient evidence or no connection between the benefits of health, sustainability, and social improvement, and the way people live and travel. THE CONGESTION

Critics argue that public transit does little to reduce automobile travel or reduce traffic congestion, and smart growth increases density, which increases the congestion. THE INVESTMENT

Critics argue that public transit is not cost effective, requires significant subsidies, and sprawl is cheaper overall for economic development.

RIGHT NOW THE CITY HAS TWICE AS MUCH PARKING AS PEOPLE. - Municipality Interview

IN 2016 THERE WAS 33,914 TRAFFIC COLLISIONS IN JEFFERSON COUNTY AND THE ECONOMIC COST ESTIMATE OF TRAFFIC COLLISIONS IN THE STATE OF KENTUCKY WAS 2.7 BILLION

- Kentucky Collision Report

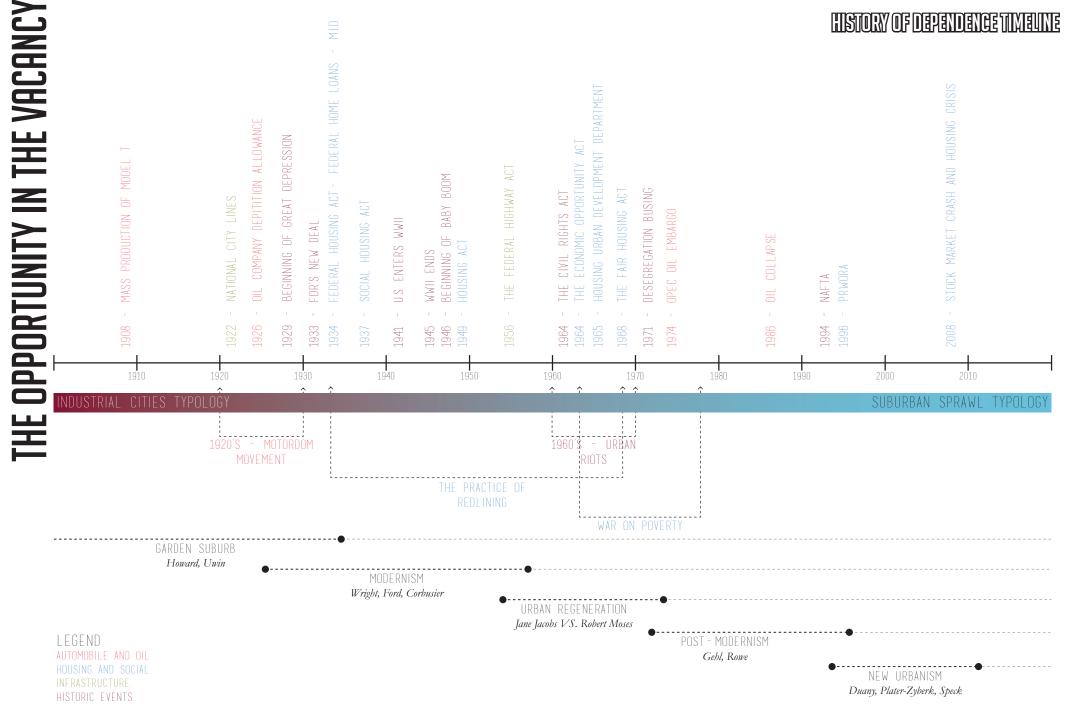
LOUISVILLE HAS A PEDESTRIAN FATALITY RATE THAT IS HIGHER THAN THE NATIONAL AVERAGE.

- Move Louisville Vision Doc





Like most American cities, Louisville must reduce vehicle miles traveled. Cars will remain the dominate mode of transport, but there is opportunity to shift short trips away from cars. Shifting these the our health, air quality, built enconnectivity. Move Louisville represents a and action plan for transportation policy and estment for Louisville Metro. The Plan processor connected and sustainal accourages Shifting these trips can have broad impacts on connectivity. Move Louisville represents a vision investment for Louisville Metro. The Plan provides a path to a healthy, connected and sustainable investment, growth and prosperity.







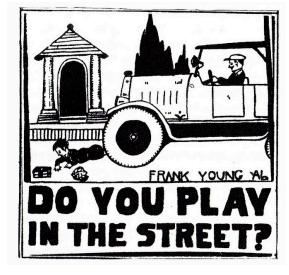


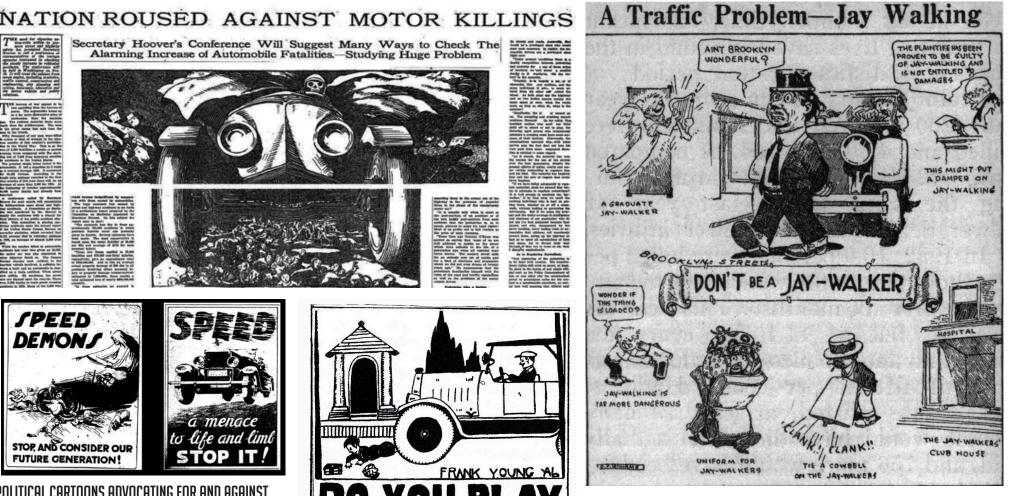






POLITICAL CARTOONS ADVOCATING FOR AND AGAINST CARS IN THE 1930S

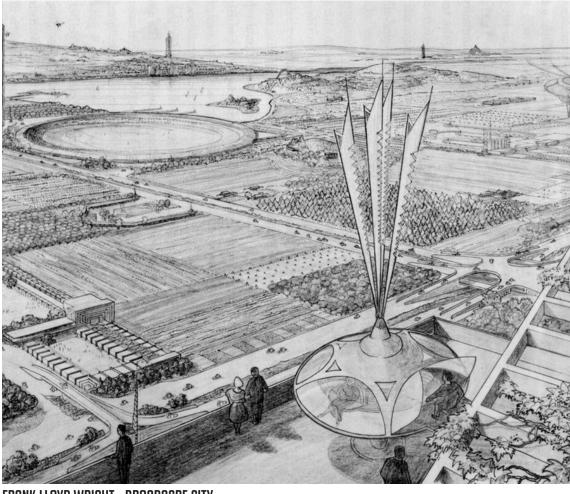




THE MODERN CITY IS PROBABLY THE MOST UNLOVERY AND ARTHRUM. SITE THIS PLANET AFFORDS, THE UNIMATE SOLUTION IS TO ABANDON IT...

WE SHALL SOLVE THE CITY PROBLEM BY LEAVING THE CITY.

- HENRY FORD, 1922

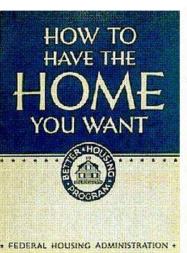


FRANK LLOYD WRIGHT - BROADACRE CITY 1932



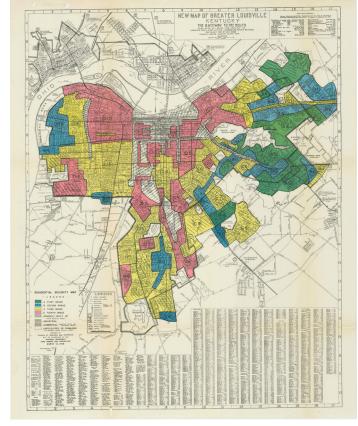
1939 WORLDS FAIR - NEW YORK CITY
FUTURAMA EXHIBITION COMMISSIONED BY GM







FEDERAL HOUSING ACT OF 1934



"If a neighborhood is to retain stability, it is necessary that properties shall continue to be occupied by the same social and racial classes. A change in social or racial occupancy generally contributes to instability and a decline in values" - U.S. Federal Housing Administration 1938, par. 937 (Squires, 2002)

THE RACIAL CONTEXT

REDLINING MAP OF 1937





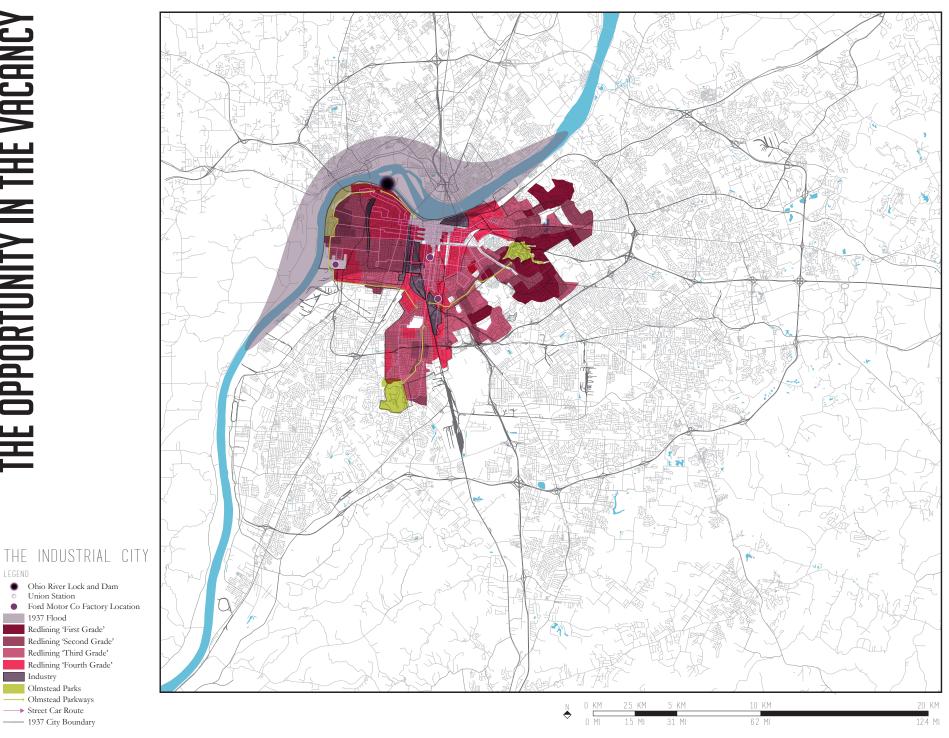
LEGEND

 Ohio River Lock and Dam Union Station

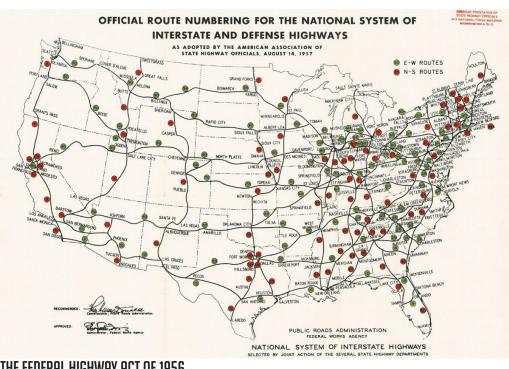
> 1937 Flood Redlining 'First Grade' Redlining 'Second Grade' Redlining 'Third Grade' Redlining 'Fourth Grade'

Industry Olmstead Parks Olmstead Parkways

→ Street Car Route ---- 1937 City Boundary



Source: Author





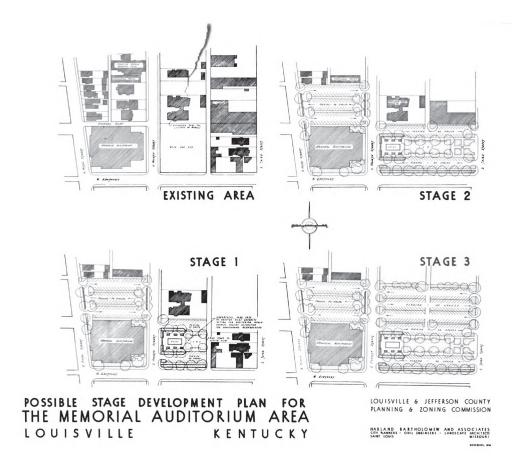
THE FEDERAL HIGHWAY ACT OF 1956







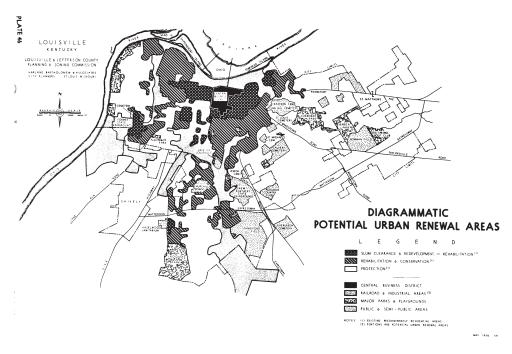
OPENING DAY OF INTERSTATE 65







LOUISVILLE BUS SYSTEM





LOUISVILLE'S CIVIL RIGHTS PROTESTS IN THE 1960S

URBAN RENEWAL OF LOUISVILLE'S 1957 COMPREHENSIVE PLAN



LOUISVILLE'S CIVIL RIGHTS PROTESTS IN THE 1960S



THE WADE FAMILY OUTSIDE OF THEIR SUBURBAN HOME

SUBURBAN FLIGHT

Ford Motor Co Factory Location Suburb Developments Civil Rights Protests Louisville Medical Center 1956 Urban Boundary

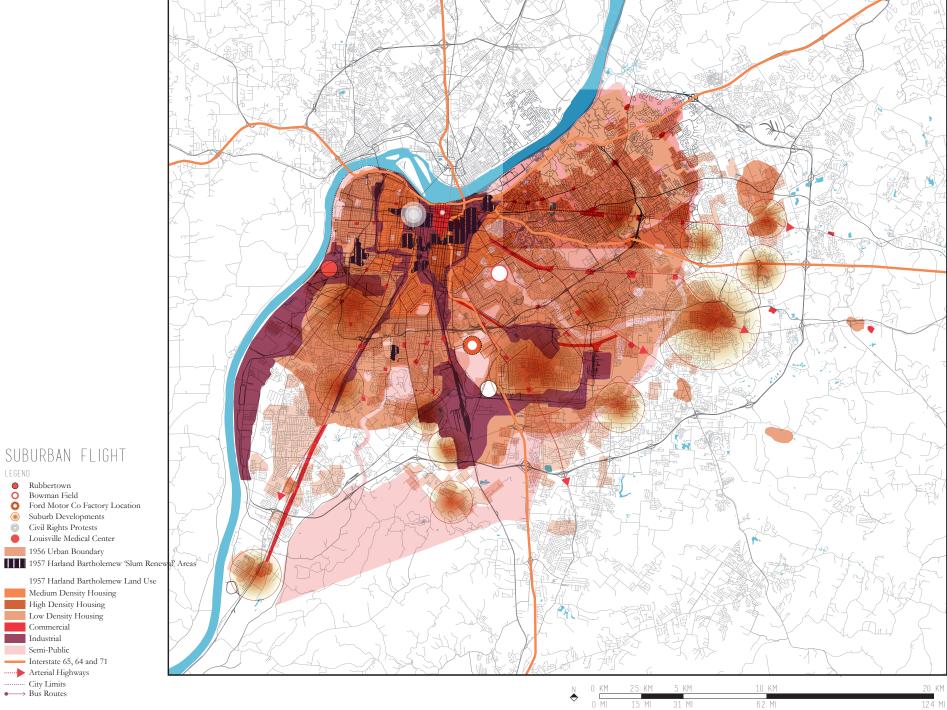
Medium Density Housing High Density Housing Low Density Housing Commercial Industrial Semi-Public Interstate 65, 64 and 71 ----- Arterial Highways

LEGEND

0

Rubbertown

Bowman Field



····· City Limits ● Bus Routes

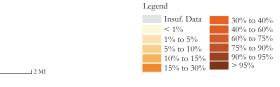
12.4 Ml Source: Author

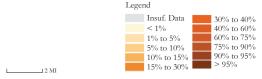
RACE 1940 Percent of Black alone (Social Explorer, 1940 Census)











PROPERTY VALUE 1960

2 MI

Percent of Owner Occupied Housing worth more than \$15,000 (Social Explorer, 1960 Census)

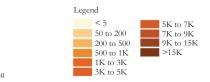


Number of people per square mile (Social Explorer, 1940 Census)



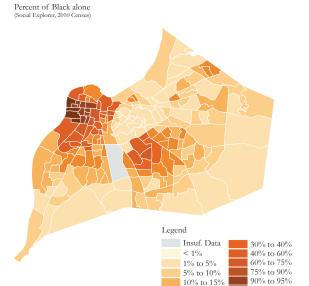








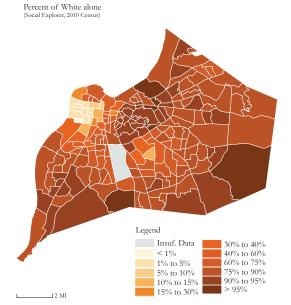
RACE 2010



> 95%

15% to 30%

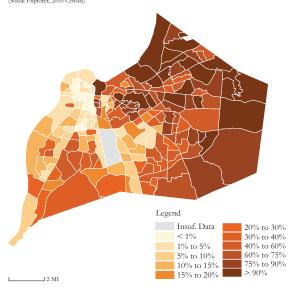
RACE 2010



PROPERTY VALUE 2010

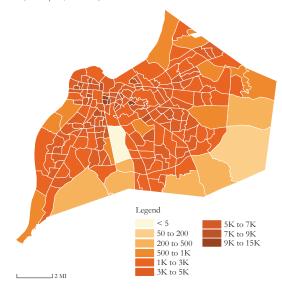
2 MI

Percent of Owner Occupied Housing worth more than \$150,000 (Social Explorer, 2010 Census)



POPULATION DENSITY 2010

Number of people per square mile (Social Explorer, 2010 Census)



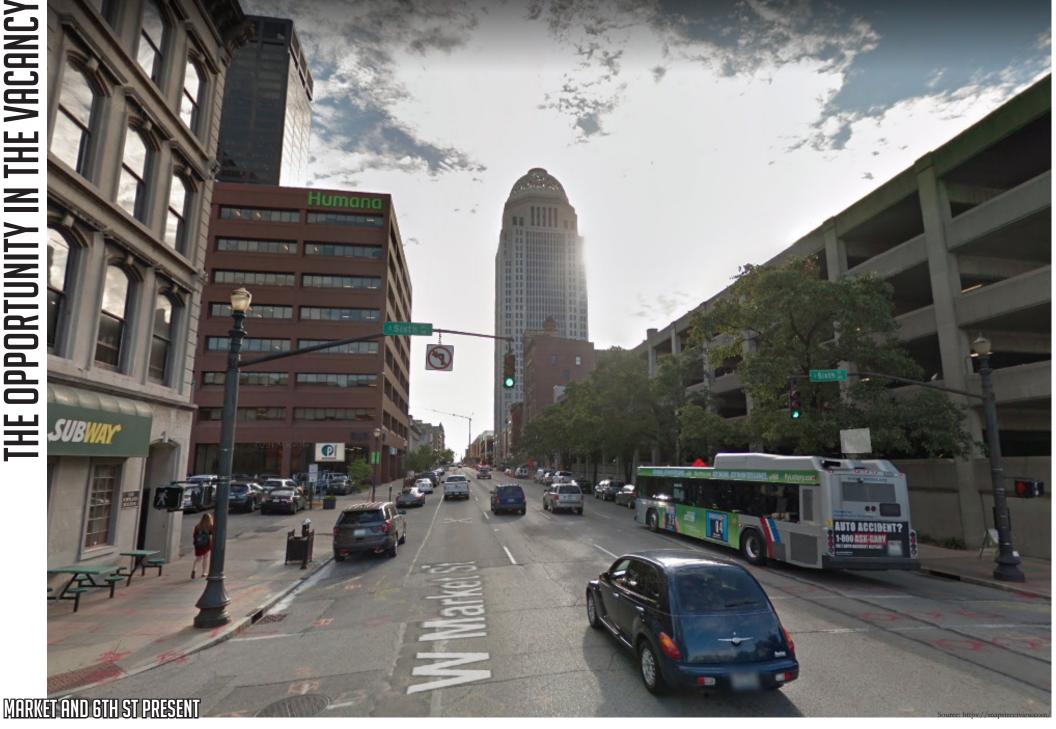




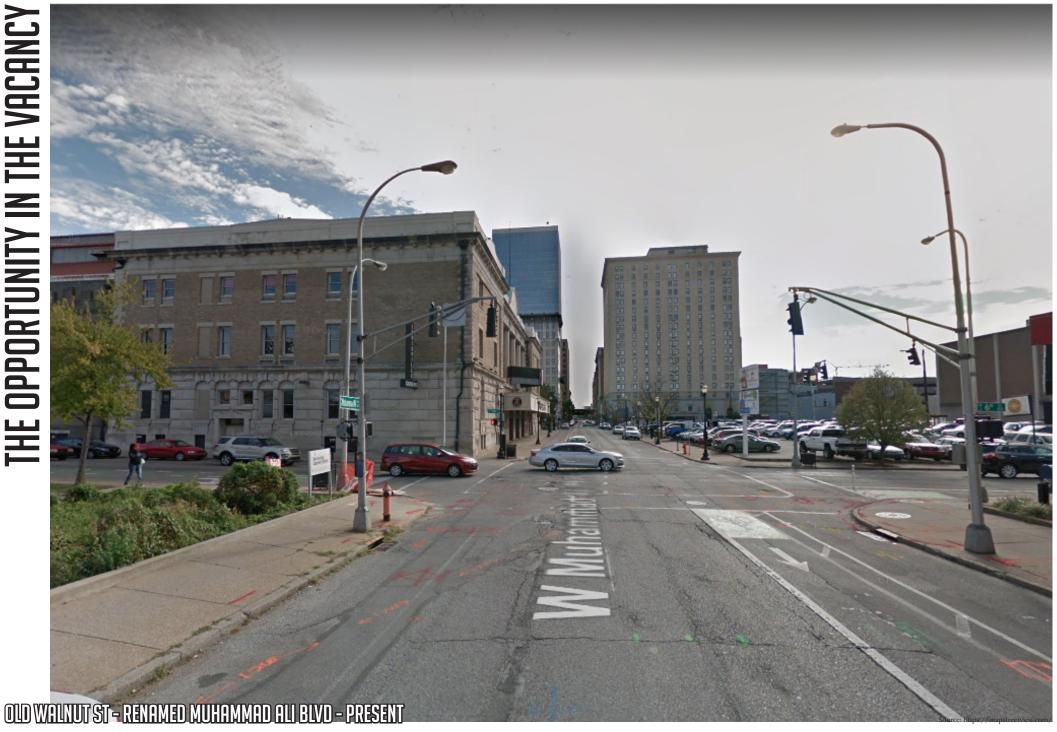


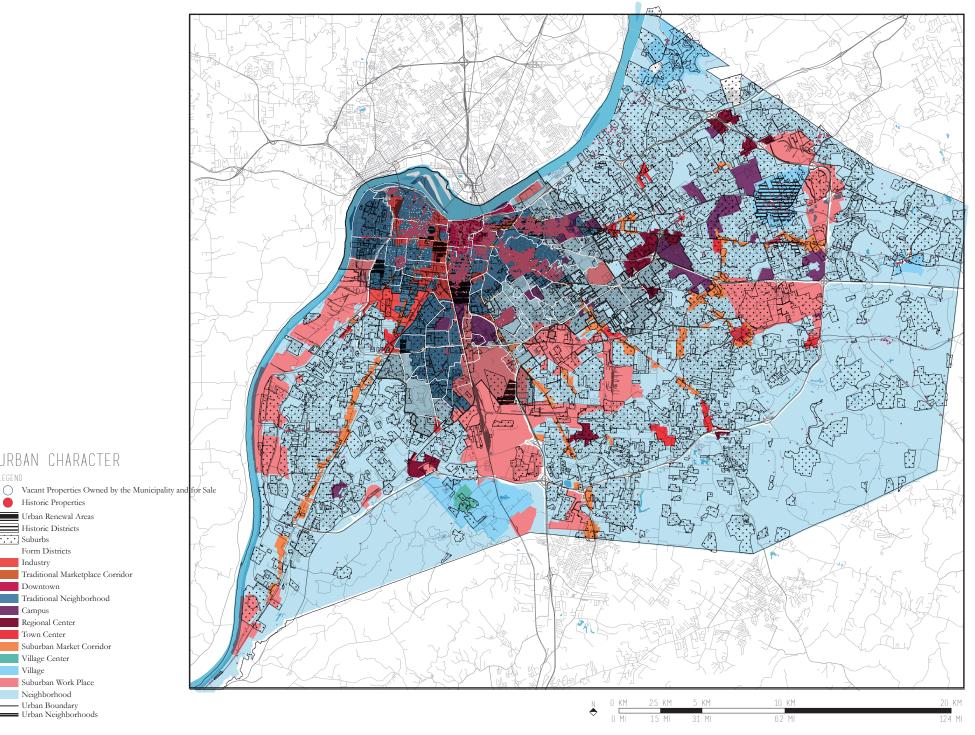












URBAN CHARACTER

Traditional Marketplace Corridor

Historic Properties Urban Renewal Areas Historic Districts Suburbs Form Districts Industry

> Downtown Traditional Neighborhood

Campus Regional Center Town Center Suburban Market Corridor Village Center Village

Suburban Work Place Neighborhood

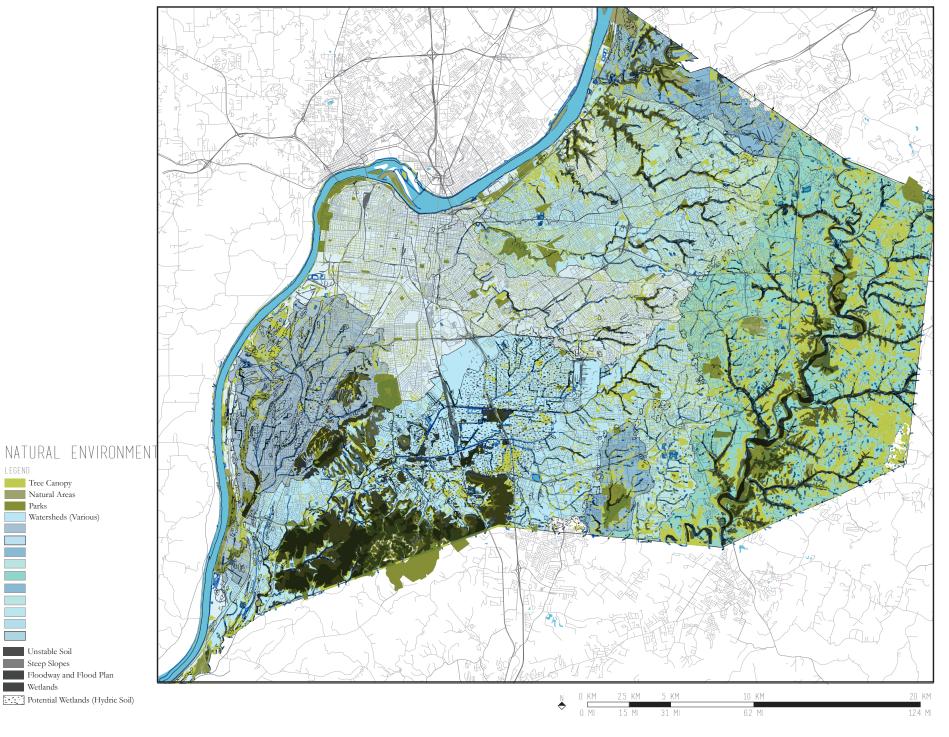
Urban Boundary
Urban Neighborhoods

LEGEND Tree Canopy Natural Areas Parks

Watersheds (Various)

Unstable Soil Steep Slopes

Wetlands



Source: Author

FUNCTION AND INFRASTRUCTURE

LEGEND



Voting Sites

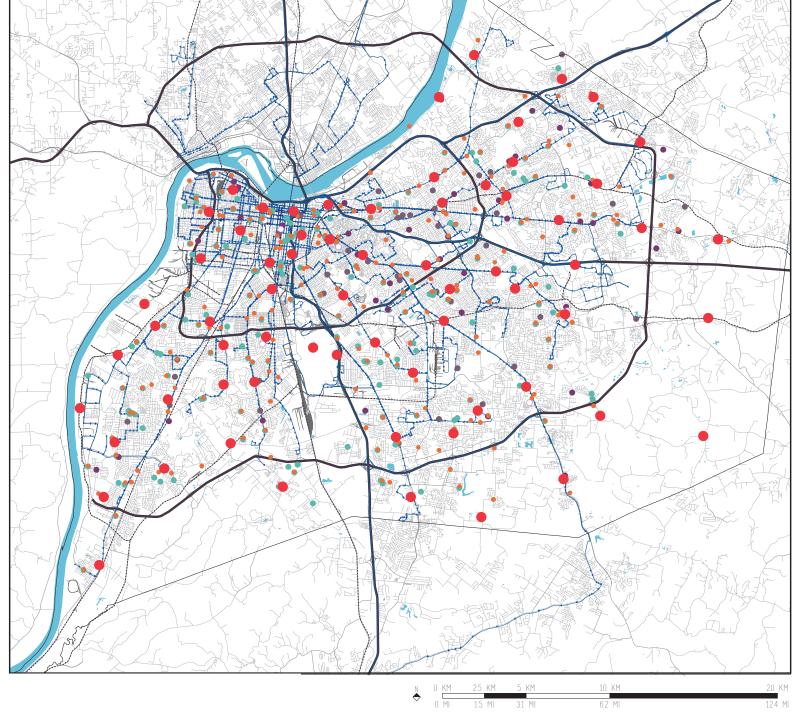
Public Library

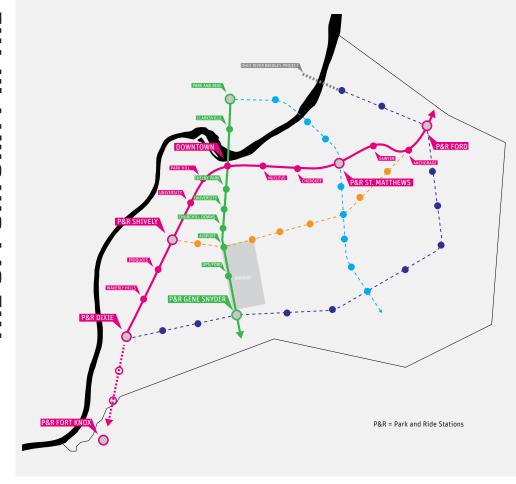
Private School

Public SchoolPrivate Religious School

Interstate or Beltway

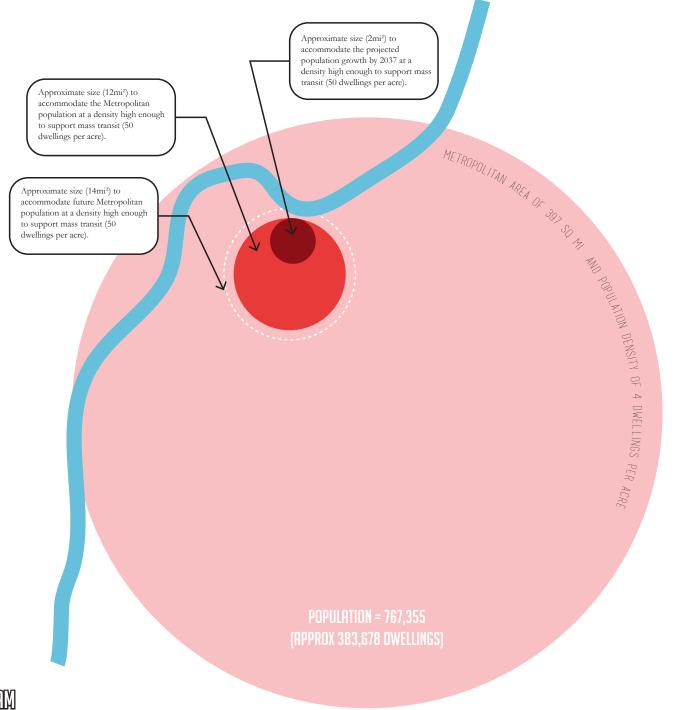
----- Railroads
----- Bus Routes







PREMIOUS PROPOSILS



How can U.S. cities transform to combat the effects of automobile dependence on the urban form?

How can U.S. cities

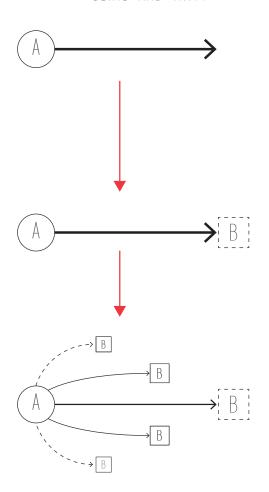
ANDWHERE DOWNESTART?

the urban form?

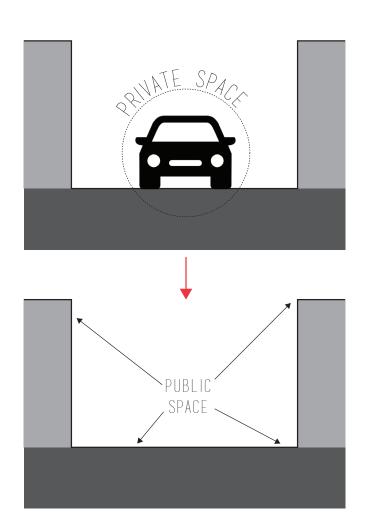
1. MUST CONSIDER NOT ONLY TRANSPORTATION BUT ALSO DESTINATION. WHERE ARE PEOPLE GOING AND WHY?

2. AS THE USE OF CARS GOES DOWN THE USE OF PUBLIC SPACE GOES UP.

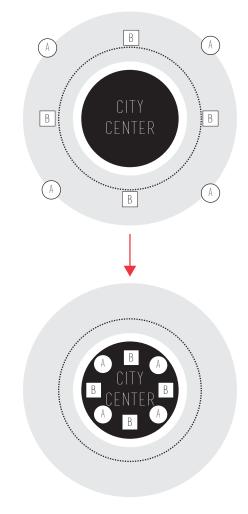
3. AS LONG AS THE ORIGIN OF TRIPS IS LOCATED OUTSIDE OF THE CITY CAR USE CANNOT TRULY BE REDUCED







IN ORDER TO GET PEOPLE OUT OF THEIR CARS CONSIDERING PUBLIC SPACE AND ACCOMMODATING THE PEDESTRIAN SCALE IS CRITICAL.



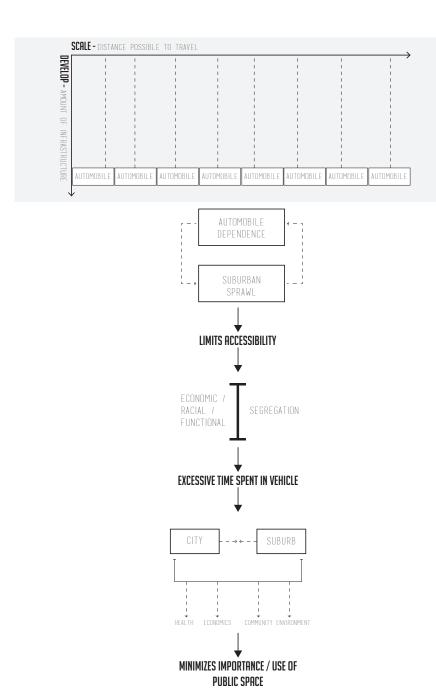
ATTRACTING INHABITANTS FROM THE SUBURB INTO THE CITY IS CRITICAL TO SUPPORT PUBLIC SPACE AND REDUCE CAR USE.

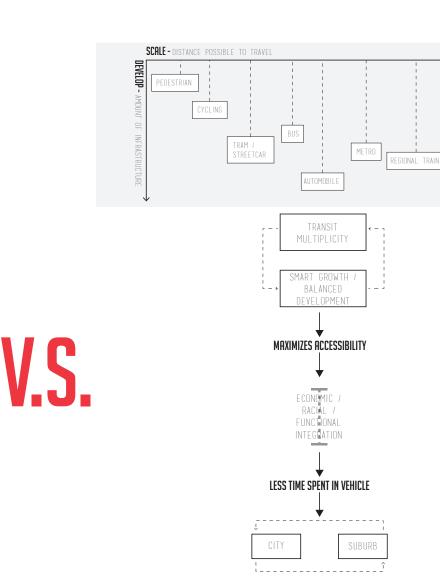
COMMUNITY ENVIRONMENT

MAXIMIZES IMPORTANCE / USE OF

PUBLIC SPACE

PLANE



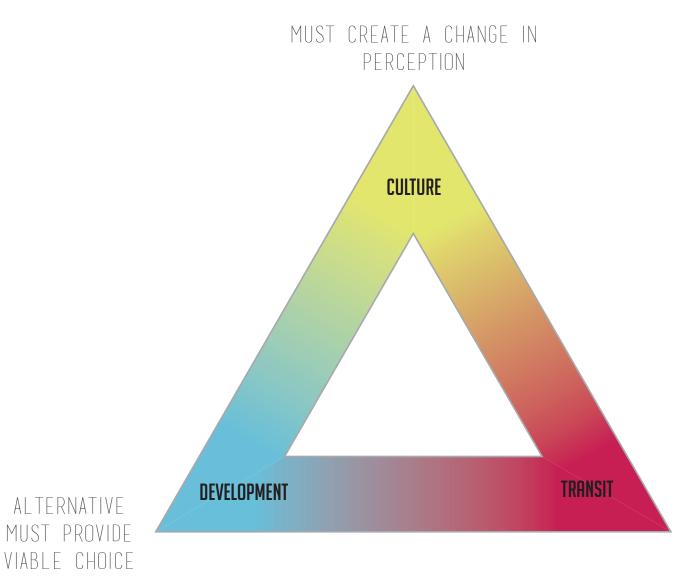


CANNOT FORCE

THE TRANSITION

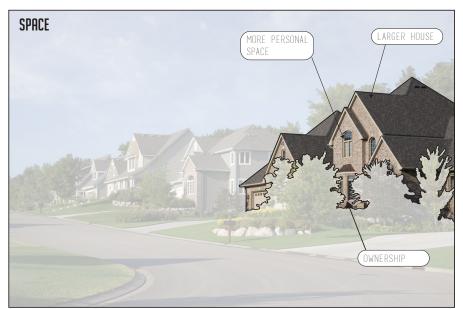
IMPEDE TRAFFIC

IMMEDIATELY



ALTERNATIVE

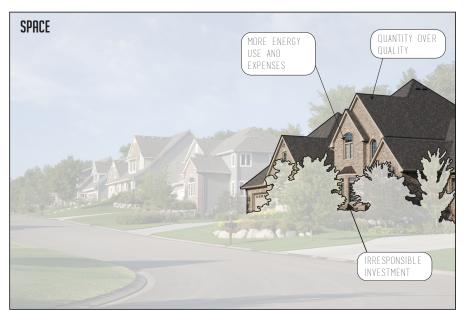
MUST PROVIDE











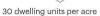


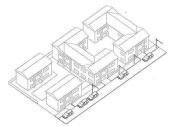












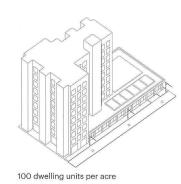
40 dwelling units per acre

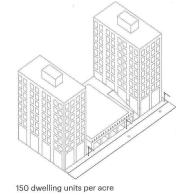


50 dwelling units per acre



75 dwelling units per acre



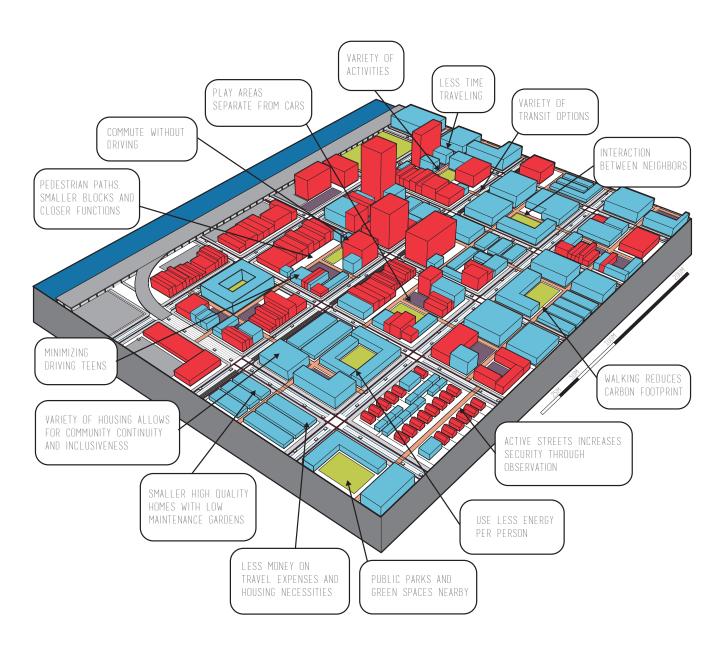


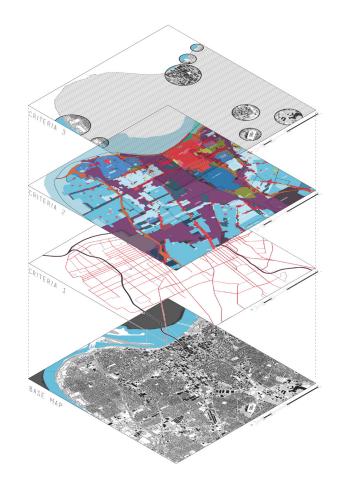


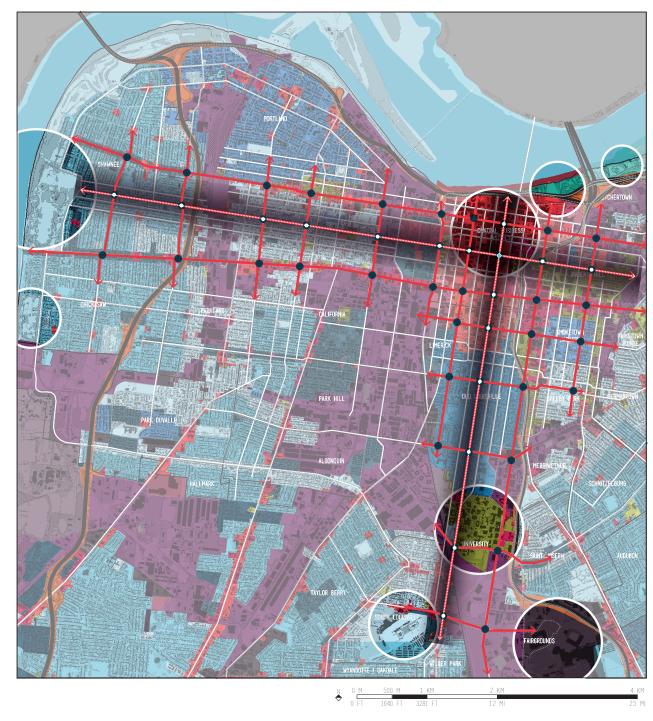












CONCLUSION

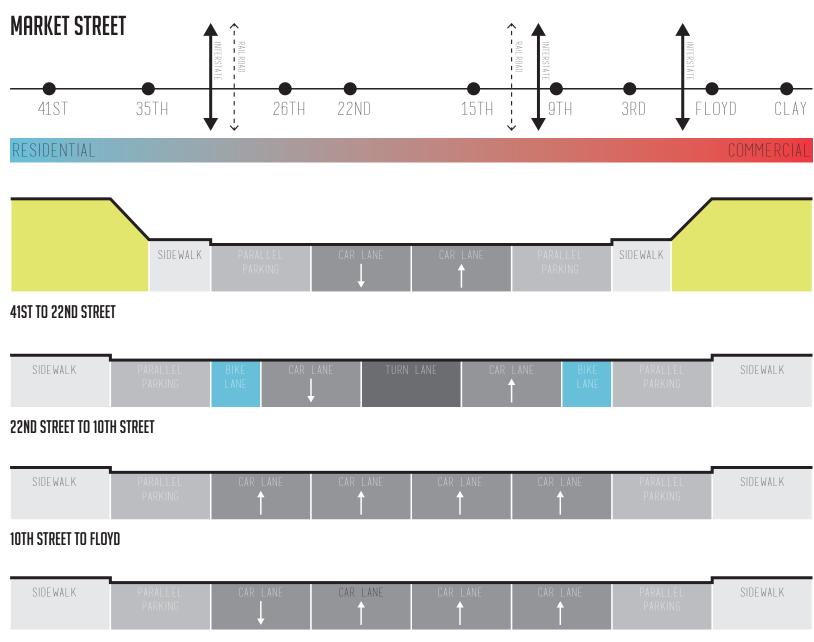
LEGEND

Density Increase

Urban Corridor - Street car Route

Urban Axis - Metro Line
Urban Corridor Intersection

O Urban Axis Intersection



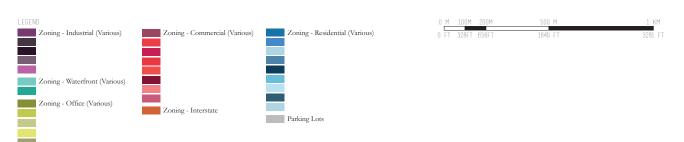
FLOYD TO CLAY STREET

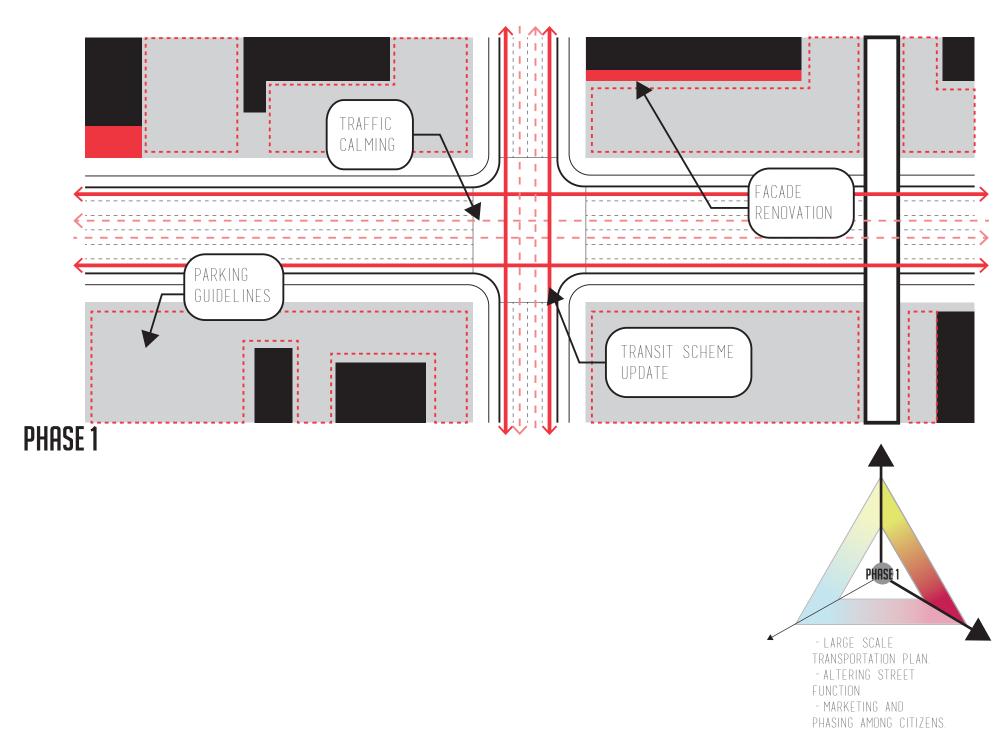
MARKET STREET - PARKING ZONING CORRIDOR ANALYSIS

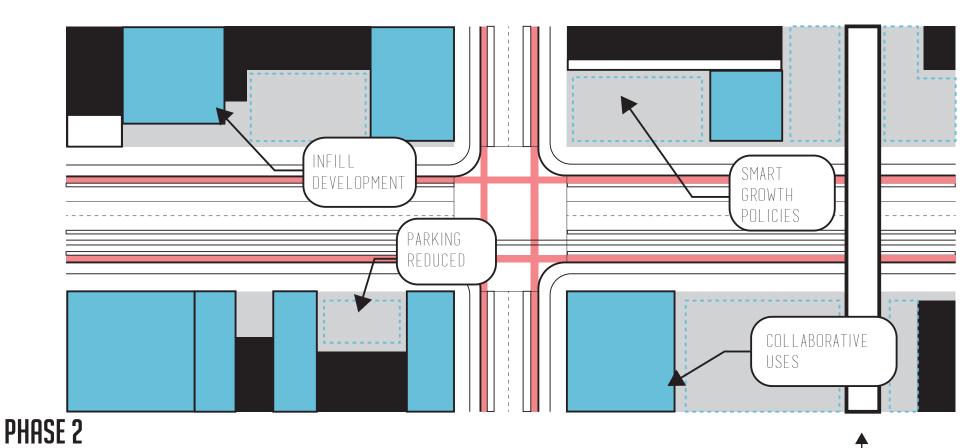








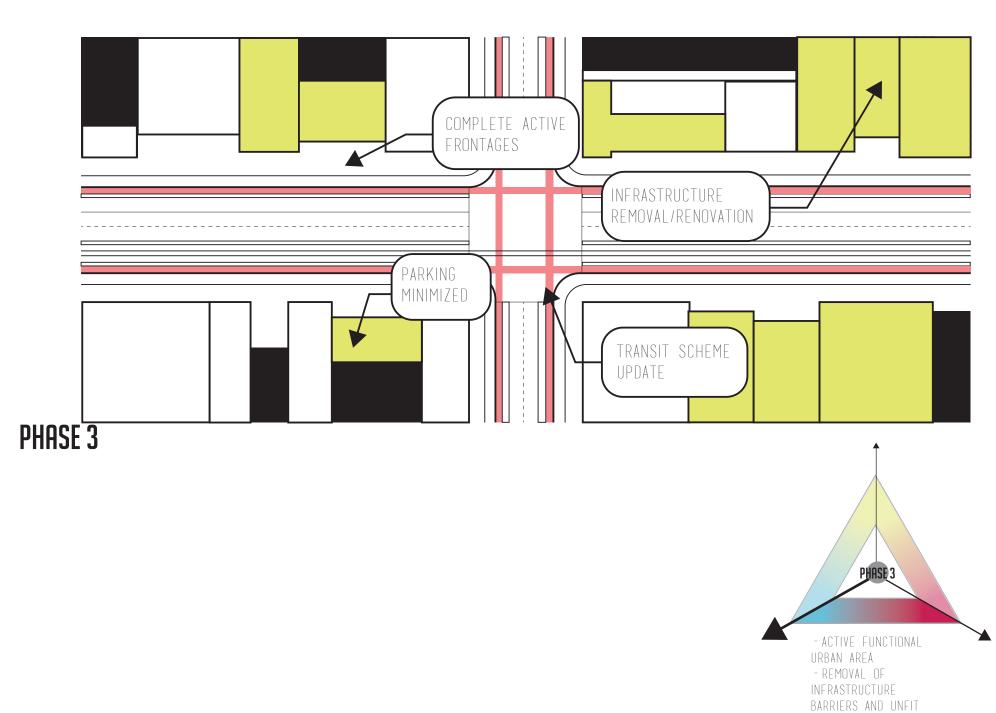


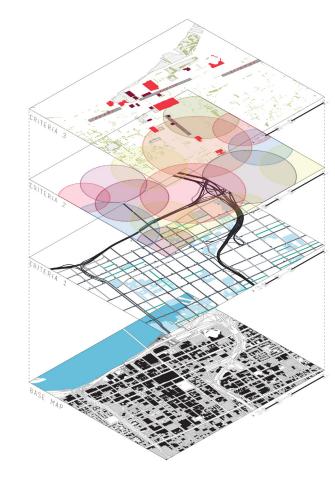


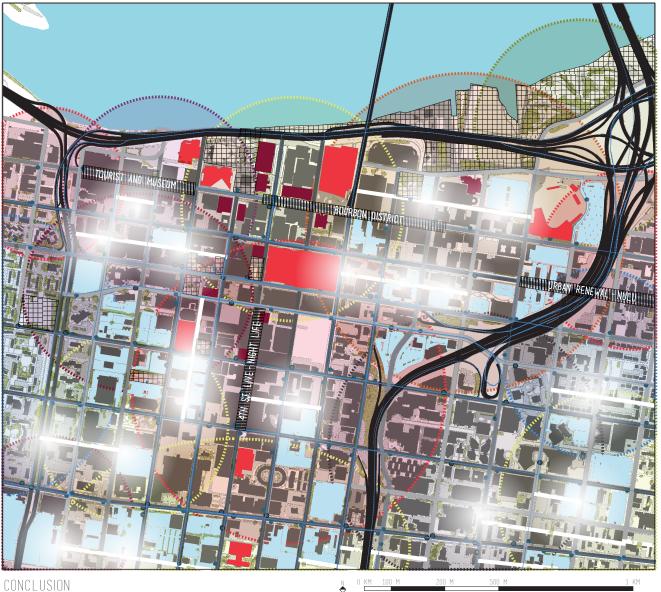
PHASE 2

- PARKING REDUCTION
AND INTEGRATED TRANSIT.
- SMART GROWTH
POLICIES AND FRONTAGE
DEVELOPMENT

PROGRAM.



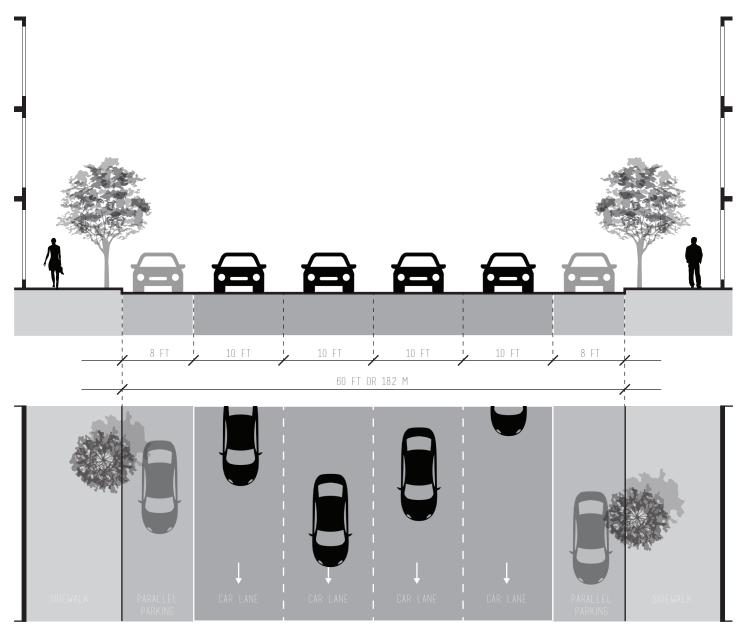




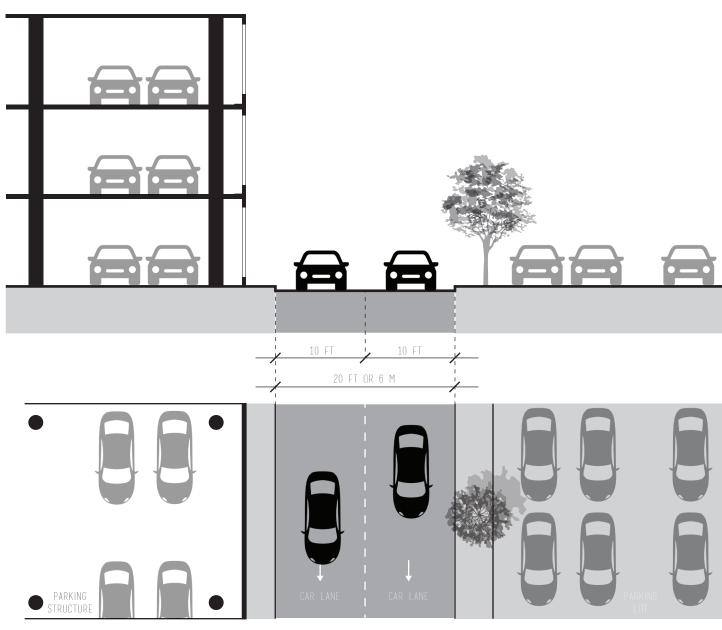
LEGEND

New Focal Points for Development

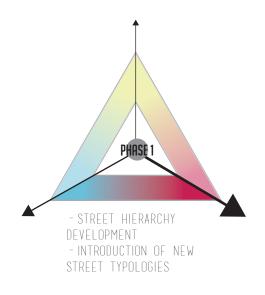
0 MI 328 FT 656 FT 1640 FT



STREET SECTION EXISTING - MAJOR STREET

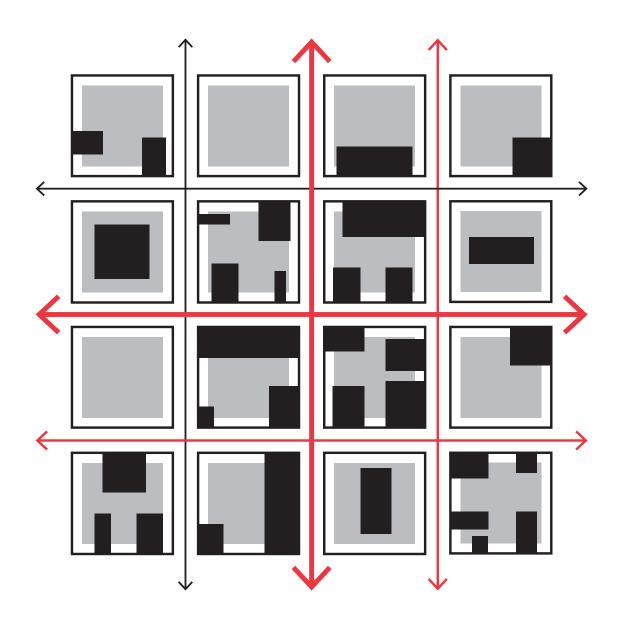


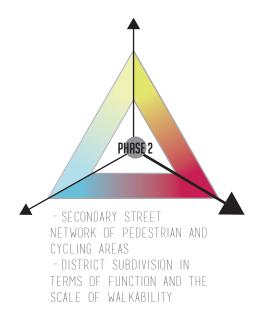
STREET SECTION EXISTING - ALLEYWAY

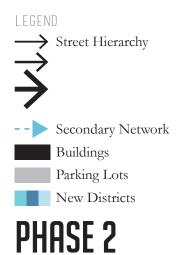


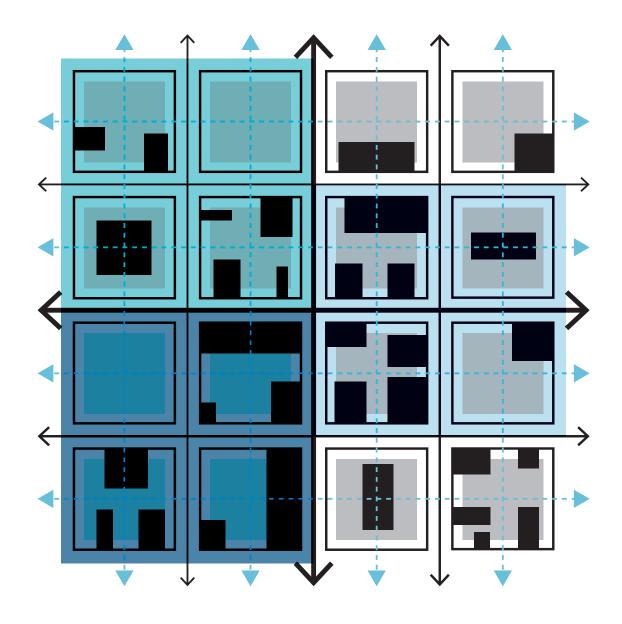


PHASE 1

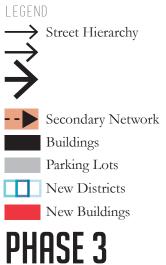


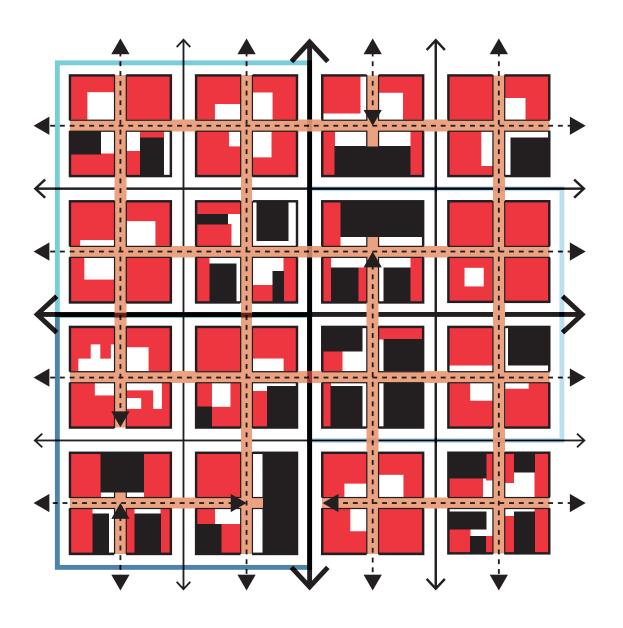


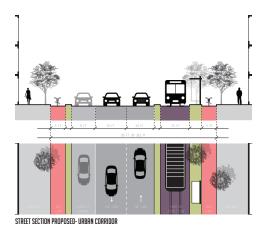


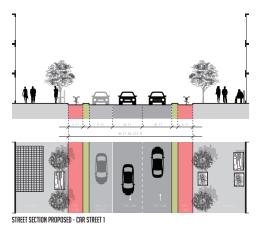


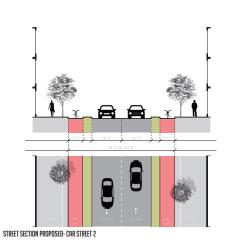
PHRSE 3 - COMPLETION AND CONNECTION OF THE NETWORK THROUGH A SERIES OF DEVELOPMENTS. - PUBLIC SPACES, SQUARES - BUILDING BLOCKS REDIRECTED TOWARDS THE SECONDARY NETWORK.

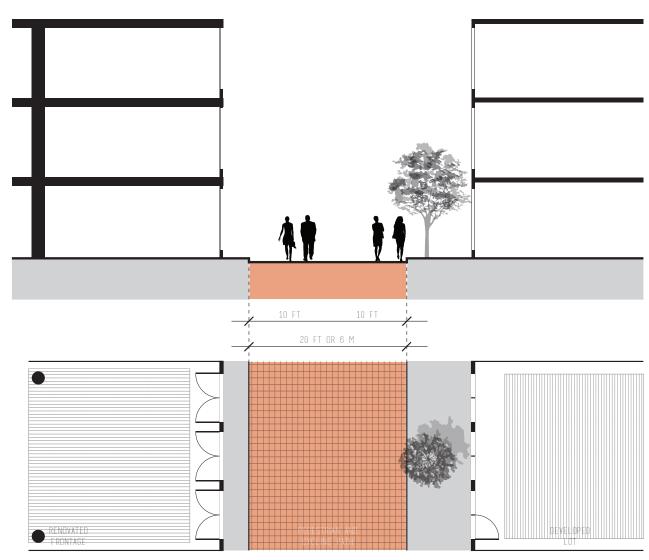




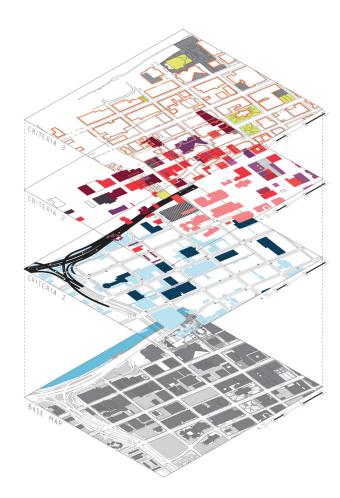


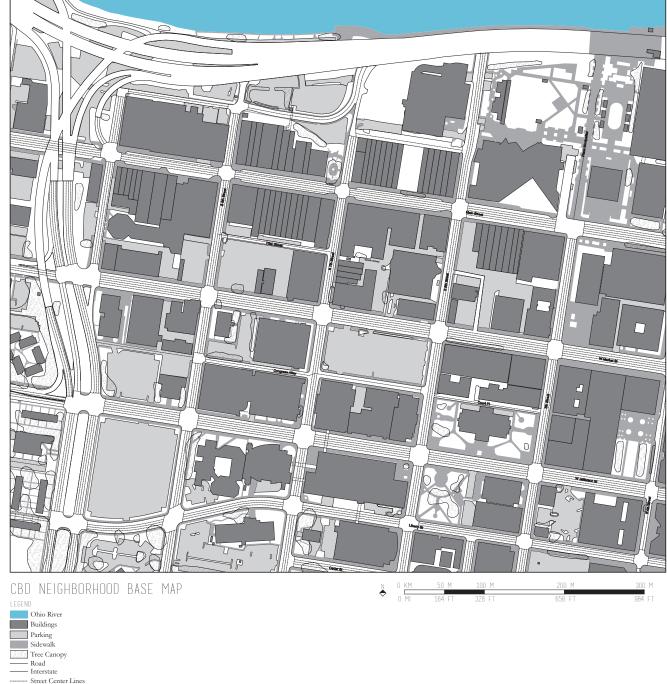






STREET SECTION PROPOSED - PEDESTRIAN CYCLING STREET





CRITERIA 2

Services

Week Days
Office
Vacant
Civic
Mixed Use
Bank
Education
Weekend and Evenings
Tourist
Residential
Constant (Minimal)
Fine Arts
Venue
Food
Commercial



CRITERIA 1

LEGEND

Parking Lot

Above Ground Parking Structure

Below Ground Parking Structure
Interstate

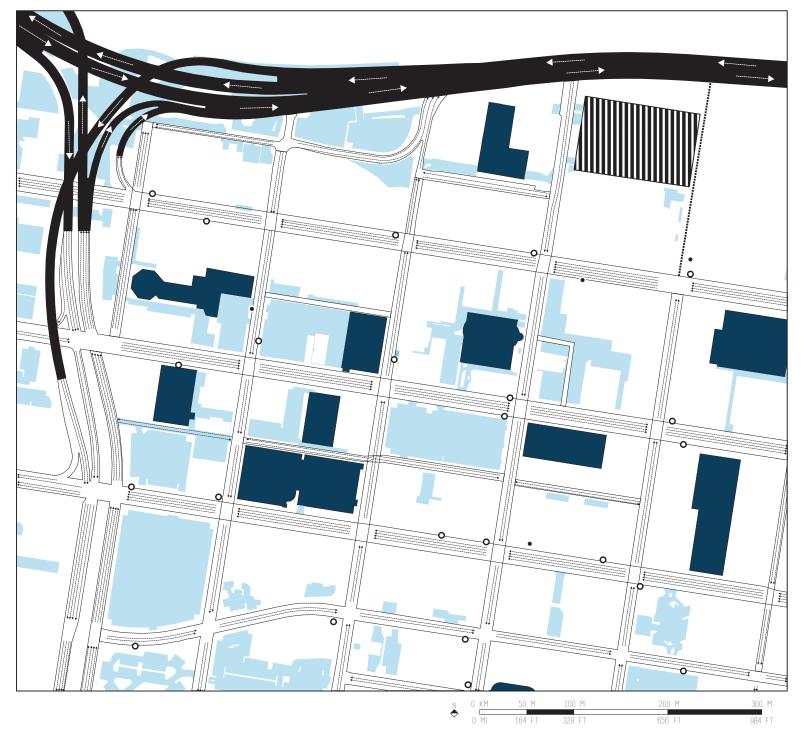
----- Interstate Direction

------ Street Direction

Pedestrian Route

Bike Share Station

O Bus Stop



CRITERIA 3

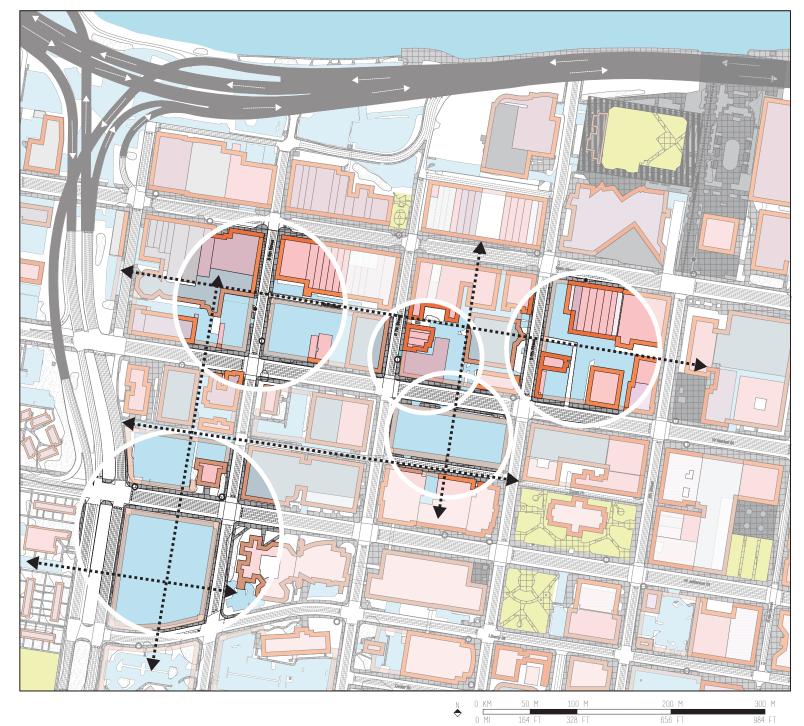
LEGEND Sidewalks

Parks

Public Space

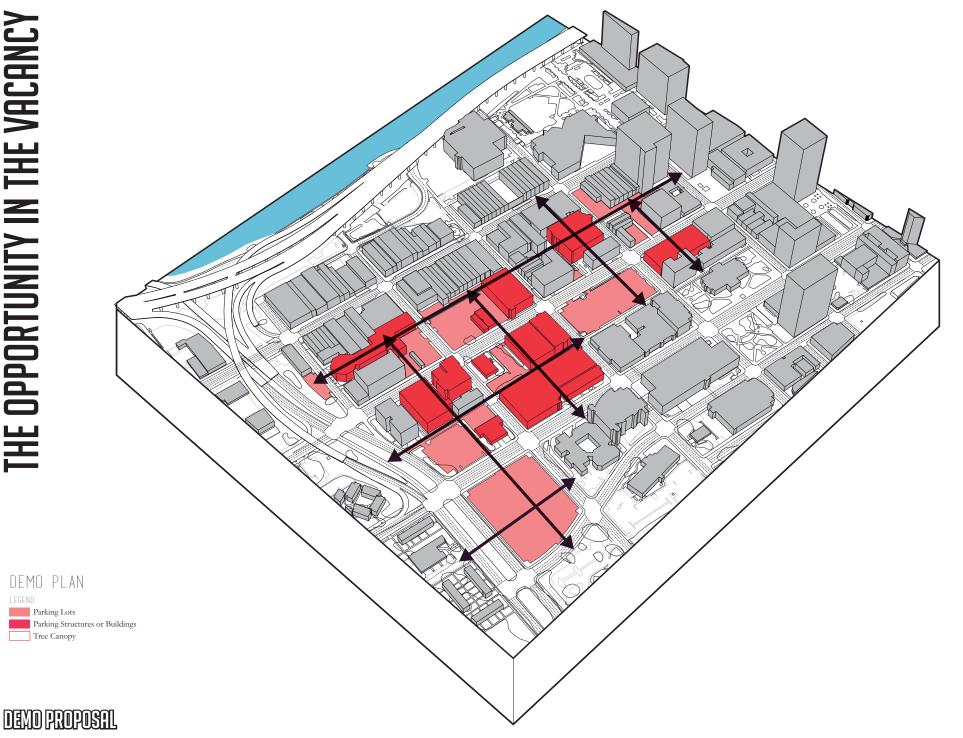
Strong Facade Average Facade

Poor Facade No Facade



CONCLUSION

---▶ New Connections
O Focus Area

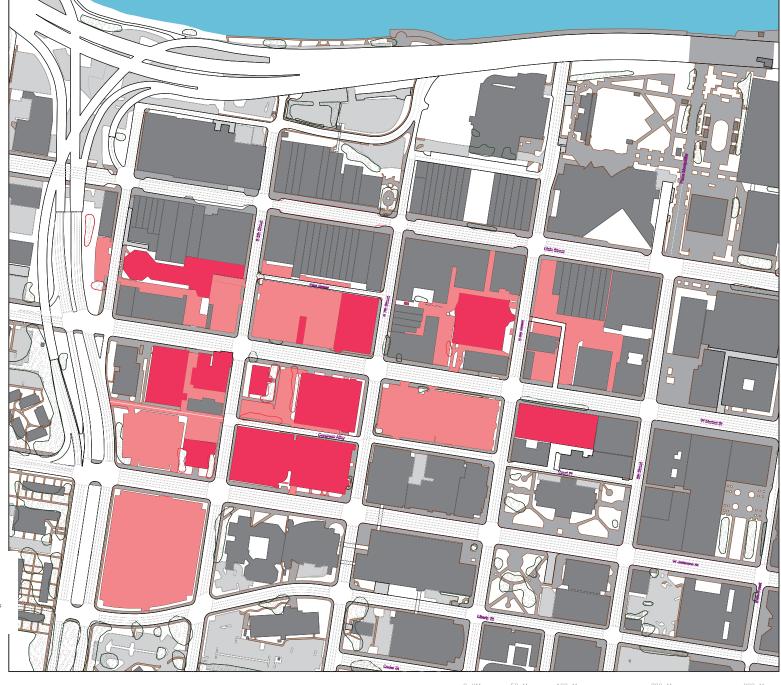


Source: Author

DEMO PLAN

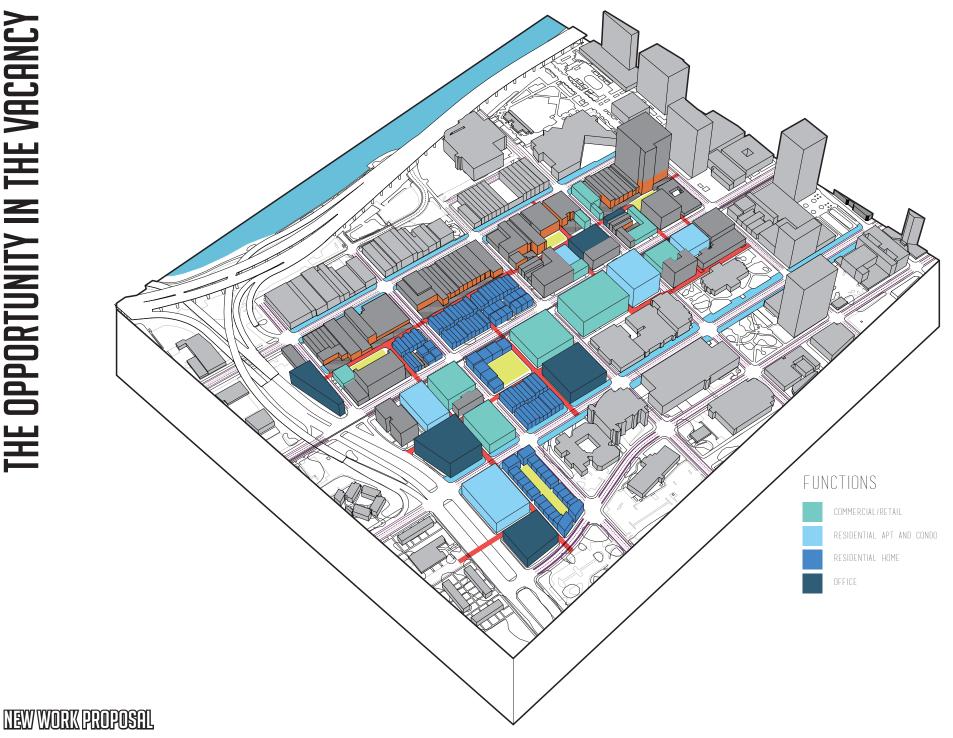
Parking Lots

Parking Structures or Buildings Tree Canopy





$\stackrel{\mathbb{N}}{\diamondsuit}$	0	KM	50	M	100	М	200 M	300	Μ
	0	M	164	FT	328	FT	656 FT	984	FT



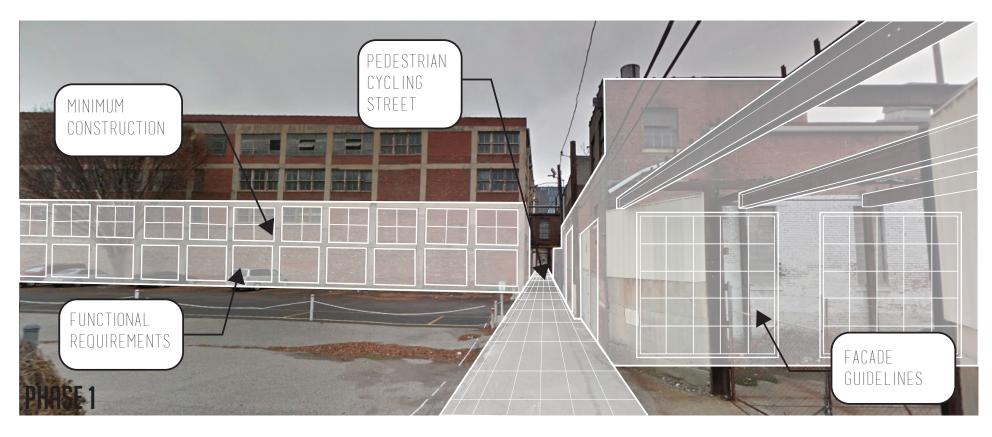
Source: Author

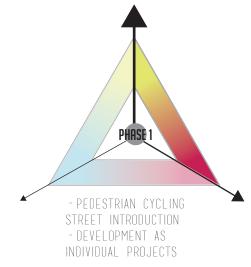
Bike Lane or Street Car Median

NEW WORK PROPOSAL

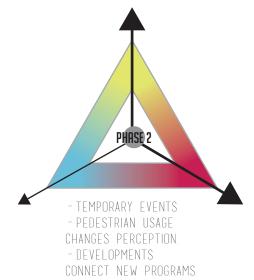
NEW WORK PLAN

Buildings Green Space Public Square or Frontage Facade Development Pedestrian and Cycling Route Street Center Lines Paralell Parking Lanes

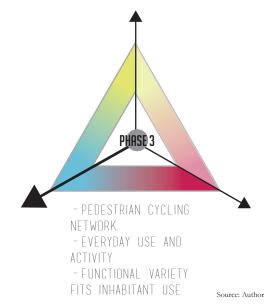




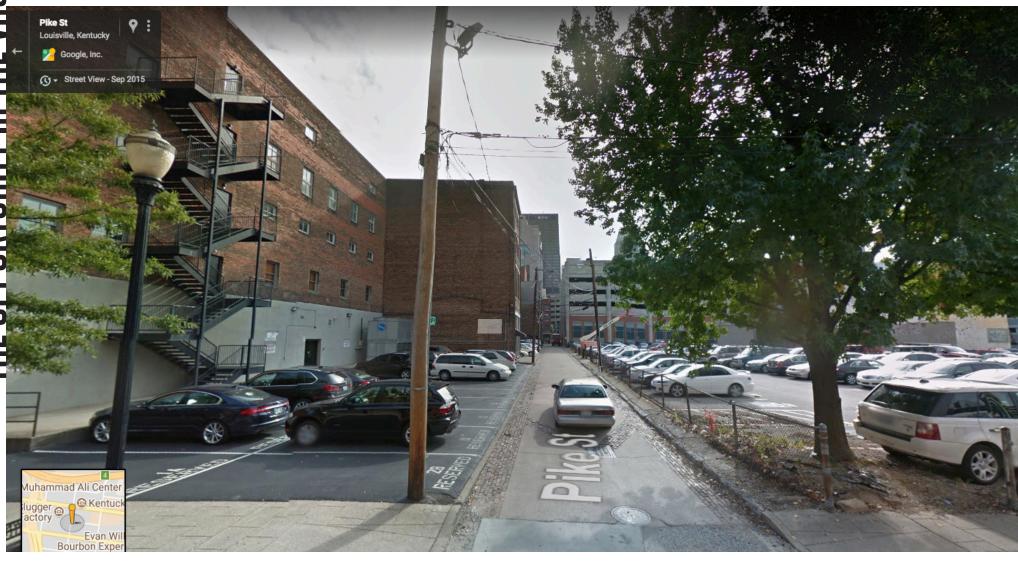










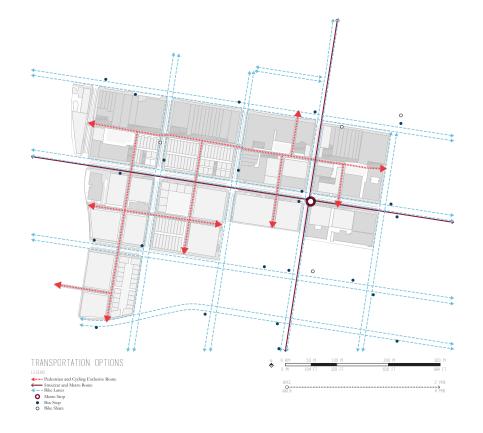














A resident of the 9th st. proposal could reduce their car usage and: Prevent 1.3 tons of CO² from entering the atmosphere Gain 474.5 hours back per year in personal time Save \$20,000 dollars in expenses



Areas of opportunity determined by analysis
Alleyways with opportunity determined by analysis
Pedestrian and cycling network connections











