

Sustaining Development in Detroit

by

Noah Samuel Resnick

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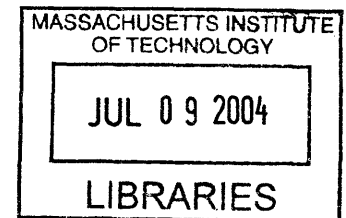
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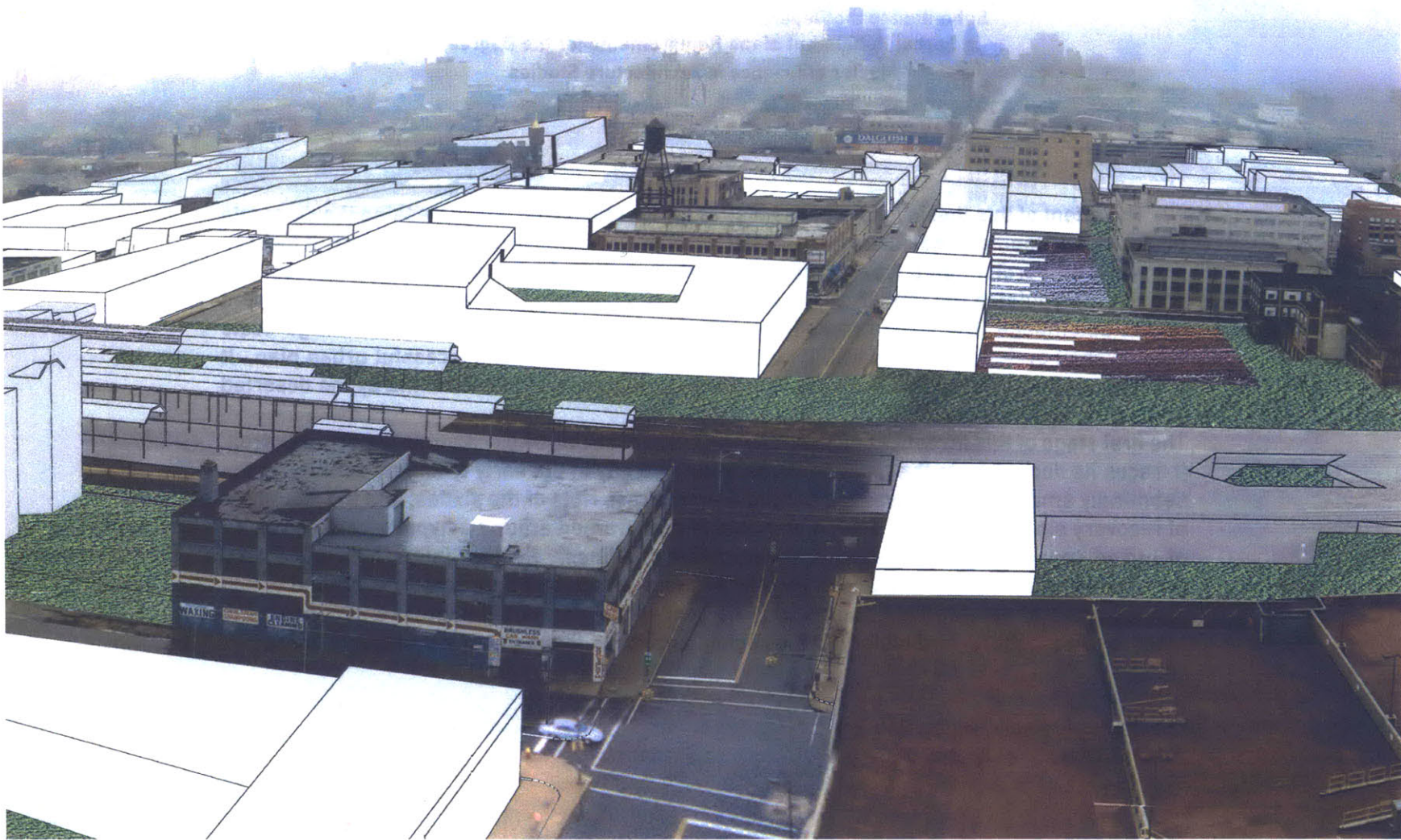
Submitted to the Department of Architecture on May 19, 2004
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Master of Science in Architecture Studies

ABSTRACT

The intent of this thesis is to propose a strategy for stabilizing and increasing the disparate pieces of development that form the traces of the once great industrial city of Detroit. It focuses primarily on Fordism as a type of modernist urbanism in which a powerful socio-economic agenda manipulated the growth of the city to that of a horizontal decentralization, dependent on the automobile. The design investigation develops and tests the thesis that a large-scale mass transit system is an integral, if not central component to any successful urban plan. It also proposes radical new uses of the vast amounts of vacant land left behind by the deserted population and industries.

The first stage of this investigation examines the urban, social, and economic history of Detroit. It traces its decline from the most powerful industrial city in the early twentieth century, to the seemingly empty shell that was left behind after the race riots of the sixties, and the city's lack of recovery since. The urban design proposal is then framed around a hypothetical network of mixed capacity surface transit and commuter rail lines. Several intermodal nodes are determined and the transit stations located at these points form an armature around which various types of development can occur. The goal of the plan is to integrate and connect the labor, wealth, culture, and history of the region, and focus these into the downtown area.

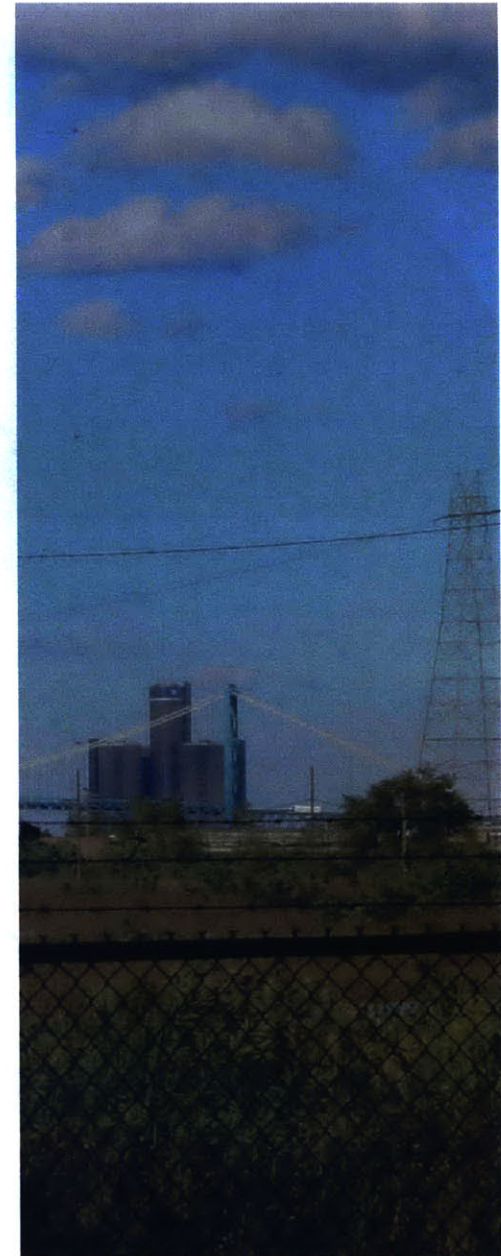
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INTRODUCTION

Many of America's post-industrial cities suffer continued decline due to the unremitting attraction of the suburbs. A stance must be taken on the future of these urban remnants. To simply consent to the total abandonment—begun by industries and the middle class after the Second World War—would be to deny the latent resurgence inherent in these cities' infrastructure, identity, and culture. The key to this resurgence lies in sustaining and building upon areas of existing and potential development that remain within them. At the same time, it is imperative to realize that these cities—in some cases reduced to nearly half the size and density they were during their peak industrial years—must fundamentally redefine their measure of success. The future ambitions of these cities should not be based upon the size and form of their former industrial might, but instead must entail the innovative re-thinking of the physical, cultural, and governmental artifacts.

There is a set of related conditions that typifies the post-industrial city. These conditions are characters in a familiar story that portrays the urban failure of industrial success. As highway building proliferated in the post-war years, inner-city factories were afforded access to cheap, open land in the suburbs, unbound by urban constraints and free from rail dependency. This disinvestment of industry was soon followed by the middle-class who, with the help of increased private automobile ownership, had the opportunity to fulfill their own desire for suburban living. Within the city, the growing presence of automobiles required more space to accommodate parking and traffic congestion. Enlarging the size and amount of streets, and spreading the city's components further from the center met this demand while simultaneously increasing the need to own a car in order to traverse the ever-expanding city. Inevitably, those who had the means

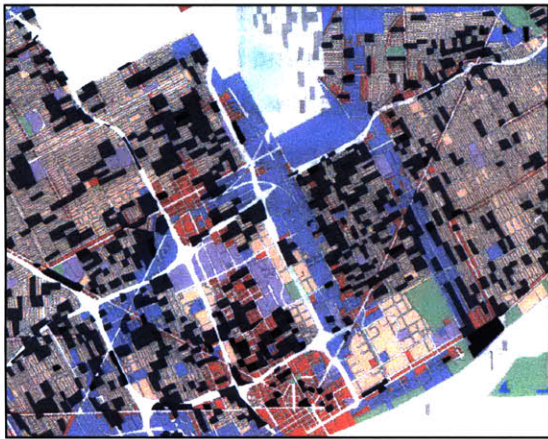




—the white middle-class— began a steady stream out of the city, while those who remained were the underprivileged, the low skilled laborers, the elderly, and the unemployed. As the amount of vacant property left behind for the suburbs grew, the land values dropped. And as the land values dropped, this steady stream turned into a mass exodus. The story seems to conclude with a city whose infrastructure was built to support a population, and a tax base double the size of the one that remains. But, although the major urban flight may have subsided, these hemophilic cities continue to slowly depopulate. The post-industrial issues of decentralization, depopulation, disinvestment, low density, low land value, high vacancy, auto dependency, low skilled labor, and high unemployment must be addressed in order to stabilize and begin to reverse the flow from these cities.

This thesis tests strategies that confront these conditions by accepting the city's state of decentralization; viewing low density, low cost of vacant real estate, and low skilled workforce as being assets; and mitigating auto dependency as necessary steps to promote reinvestment and repopulation. It begins by identifying the factors that sustain development and then uses them to map out multiple areas of urban activity. It suggests large-scale citywide initiatives to utilize and expand the existing transit infrastructure to form a network of non-centralized urban nodes and then concentrates on one of these nodes—using a proposed intermodal transit station at the juncture of two potential rail transit routes—as the nexus for an urban design scheme that focuses on the re-use of vacant land for community urban agriculture.

The testing ground for this thesis is the city of Detroit.



URBAN STRATEGY

detroit as urban paradigm

development nodes

transit plan



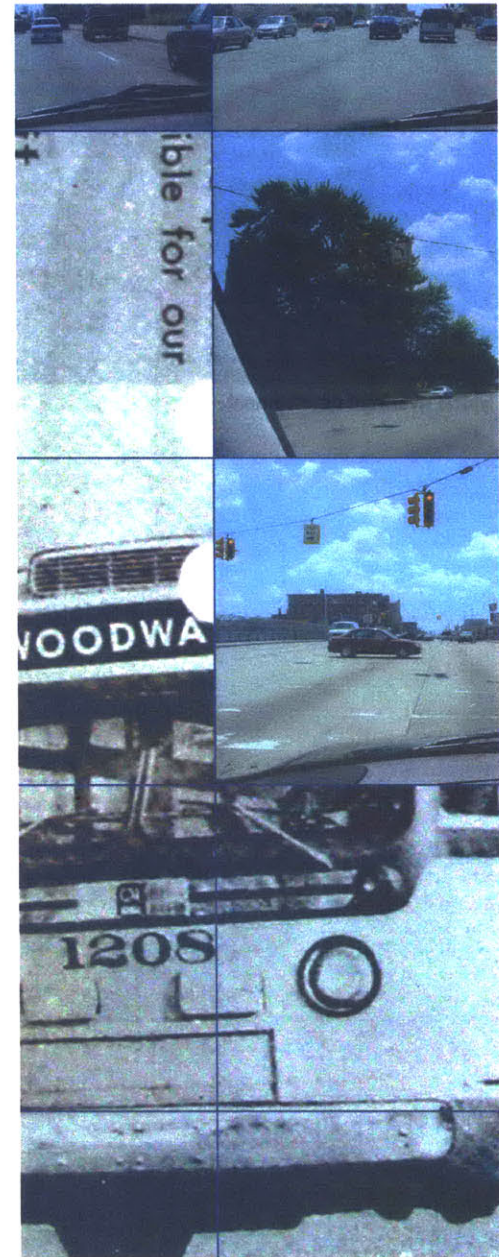
The many stories of post-industrial decline throughout the country are all variations on the story of Detroit. Detroit was the prototype of the modern American city, and has subsequently become the quintessential example of urban decay. At the peak of its industrial might, this city set the precedent for reshaping the urban landscape, restructuring the government and economy, and redefining culture and class lines around the success of a single commercial product. The Detroit automobile manufacturers not only provided the middle class freedom of movement through mechanization, but also revolutionized methods of mass production, and mass consumption. The highways that snaked out of the city fundamentally altered the American landscape and significantly shifted our patterns of habitation and land use. The effect of the automobile and the highway system on American cities was the decentralization and disinvestment of their industries, businesses, and population. And nowhere did this happen more dramatically than in the city from which the car and highway were first realized.

Appendix 1 of this thesis traces the rise and fall of industrial Detroit by examining the relationship between public transportation and the automobile manufacturers, in a paper entitled: The Derailment of Detroit.

What remains in Detroit today is not so much an empty shell, as it is often described, but an urban fabric stretched taut over a city and its suburbs. About 920,000 people are spread thin over 139 square miles of city, which at one time supported a population of nearly 2 million. Almost 45 percent of the land is vacant as are many of the commercial, industrial and residential structures. And the suburban shopping mall, another product of Detroit, has removed most of the retail activity from the city. Although these drastic conditions seem to overshadow any hope for the city's future, there are a number of strong, yet not readily apparent assets, which place Detroit in a remarkable position for recovery.

These assets include:

- Strategic location on the Detroit River
- Proximity to Canada—the border crossing between Detroit and Windsor is the busiest in the country
- Renaissance Zones—specified areas that will allow individuals and businesses who locate there to be exempt from taxes for 12 years
- Extensive transit infrastructure comprised of 14 major highways and several rail corridors all of which extend well into the region
- Much of the vacant residential, commercial, and industrial building stock is of excellent quality
- The vacant land parcels—of varying sizes and types—are mostly city owned and available at relatively low cost
- Well established educational institutions including: Wayne State University, University of Detroit Mercy, Lawrence Tech, Center for Creative Studies
- High levels of civic involvement and community activism
- Strong ethnic diversity
- High minority representation in city government
- Surplus of low skilled labor force



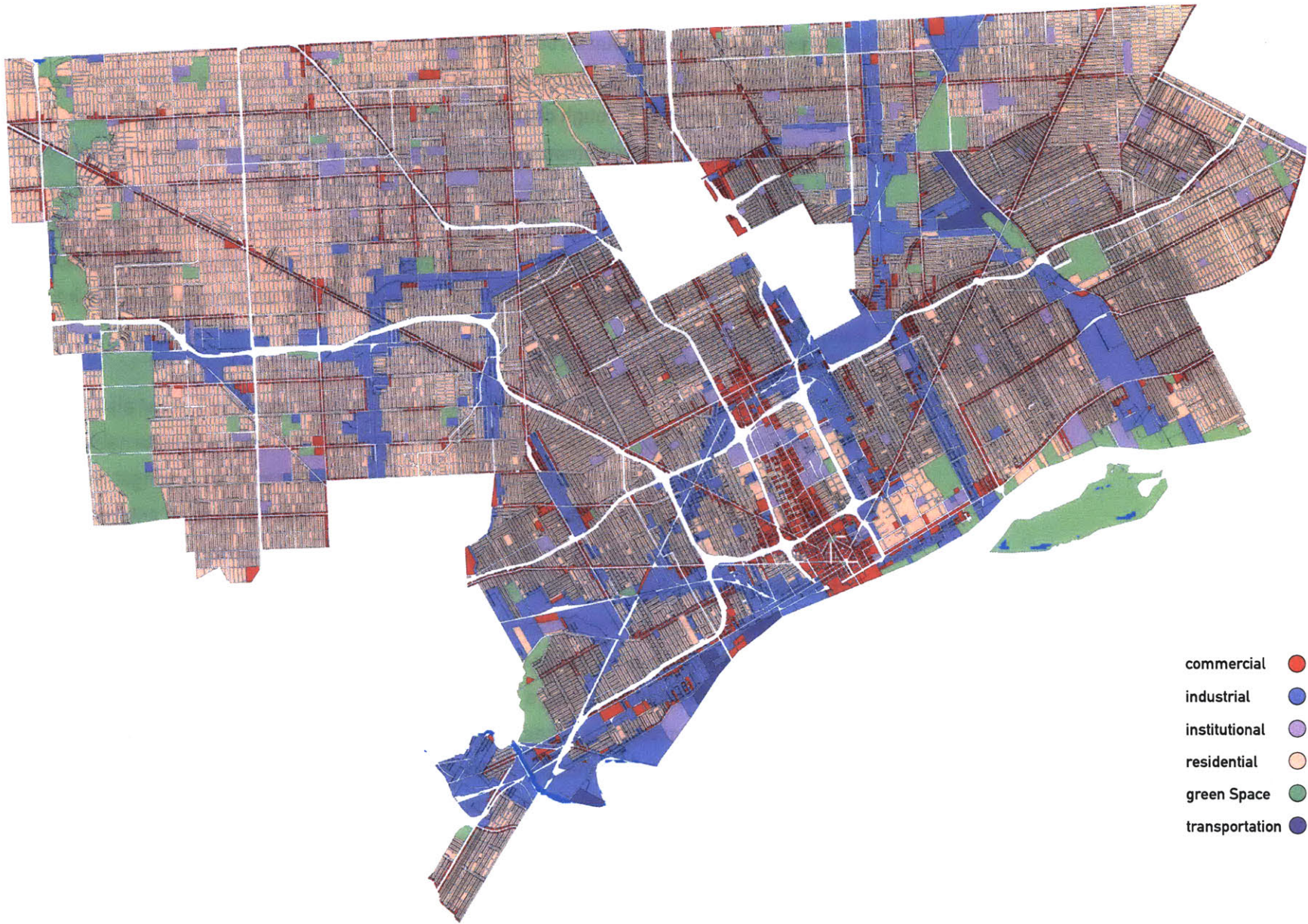


Typical riverfront development

- Well established cultural institutions such as: The Detroit Institute for The Arts, Detroit Symphony, Charles H. Wright Museum of African American History, Motown Museum
- The Red Wings
- One of the most influential underground music scenes in the world
- Strong sense of civic pride and identity
- Four professional sports teams

Recent development initiatives by the city of Detroit focus primarily on the downtown and riverfront areas of the city. These tend to employ relatively traditional land uses and are site specific strategies with a limited sphere of influence outside of the central business district. The two new sports stadiums, three casinos, renovated symphony hall, and the like may be successful as independent buildings, but do not promote a holistic vision of improving the city. In order to effectively address the 132 square miles outside of the downtown, unconventional and even experimental land use strategies, as well as new relationships between traditional land uses must be tested. An essential step in facilitating the implementation of any of these land use strategies is the creation of policies that confront the challenges inherent with Detroit's de-industrialized and depopulated condition. These challenges can be viewed as opportunities rather than obstacles, that can yield solutions which will improve the environment and image of the city. Just as the city's infamous "Devil's Night" of mischief and arson has been transformed into an "Angel's Night" of community action, its vast areas of emptiness can be turned into enticing development possibilities. The low land value and wide availability of well built, inexpensive single family homes in low density areas can be coupled with certain incentives to

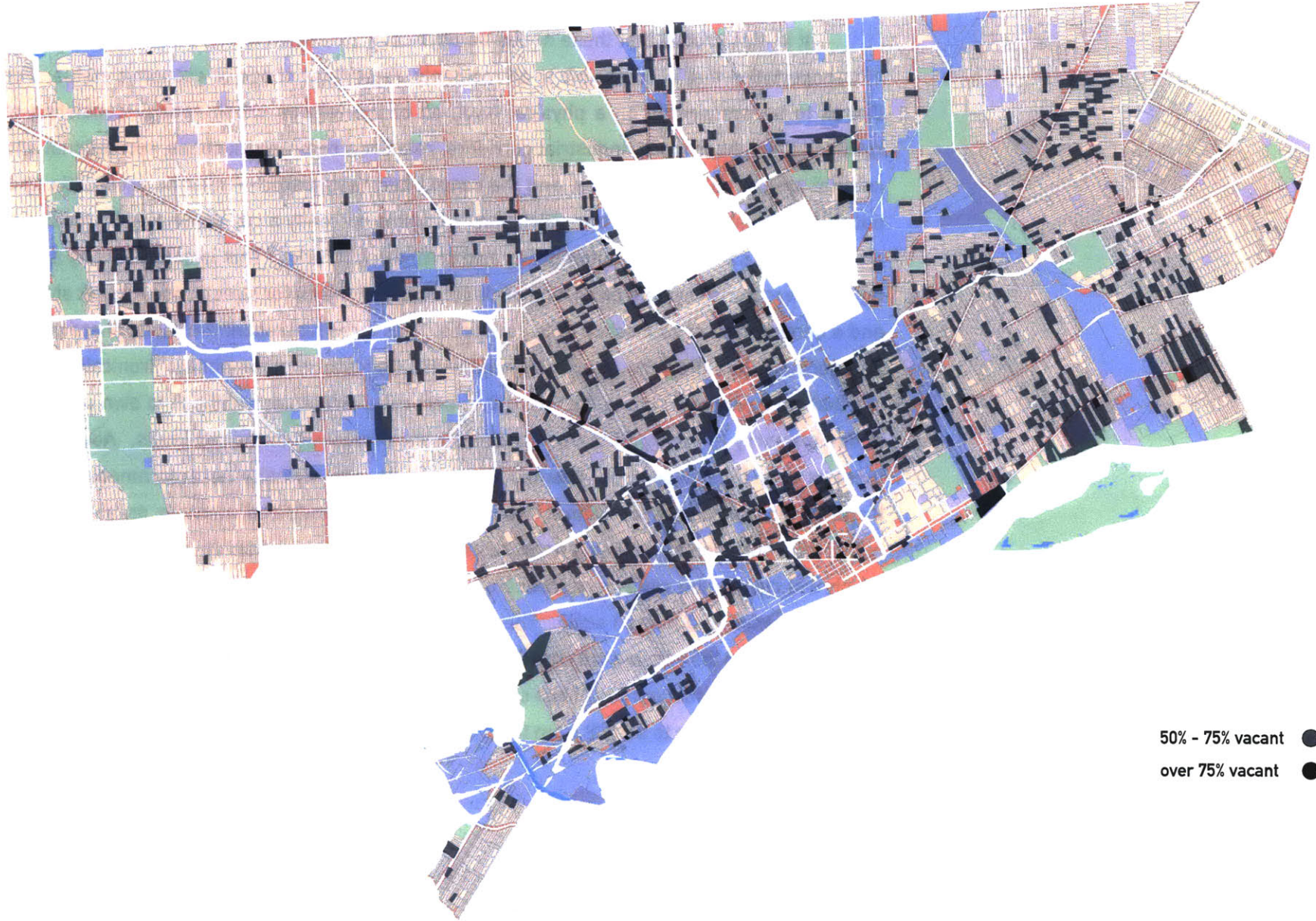
Figures 1.1 through 1.3 illustrate the overlaying of various urban conditions in order to find areas of coincidence that begin to define these nodes of potential or existing development.



1.1 EXISTING LAND USE

lure potential homeowners from the suburbs. The gritty and often dark portrayal of the city's urban experience can be spun through various media campaigns to that of an edgy and exciting place that will attract artists, designers, musicians, and other members of the "creative class" from around the region. Through changes in policy, Detroit can attract new enterprises, as well as begin to manage the large amounts of vacant parcels and reconfigure the communities. The major difficulty in developing the vacant parcels in Detroit is their scattered nature. Large areas of land are broken up by individual plots that are still being occupied by single-family houses. If amicably done, the act of relocating the residents to more concentrated, viable neighborhoods will simultaneously promote urban density while consolidating these vacant parcels into large tracts of developable land.

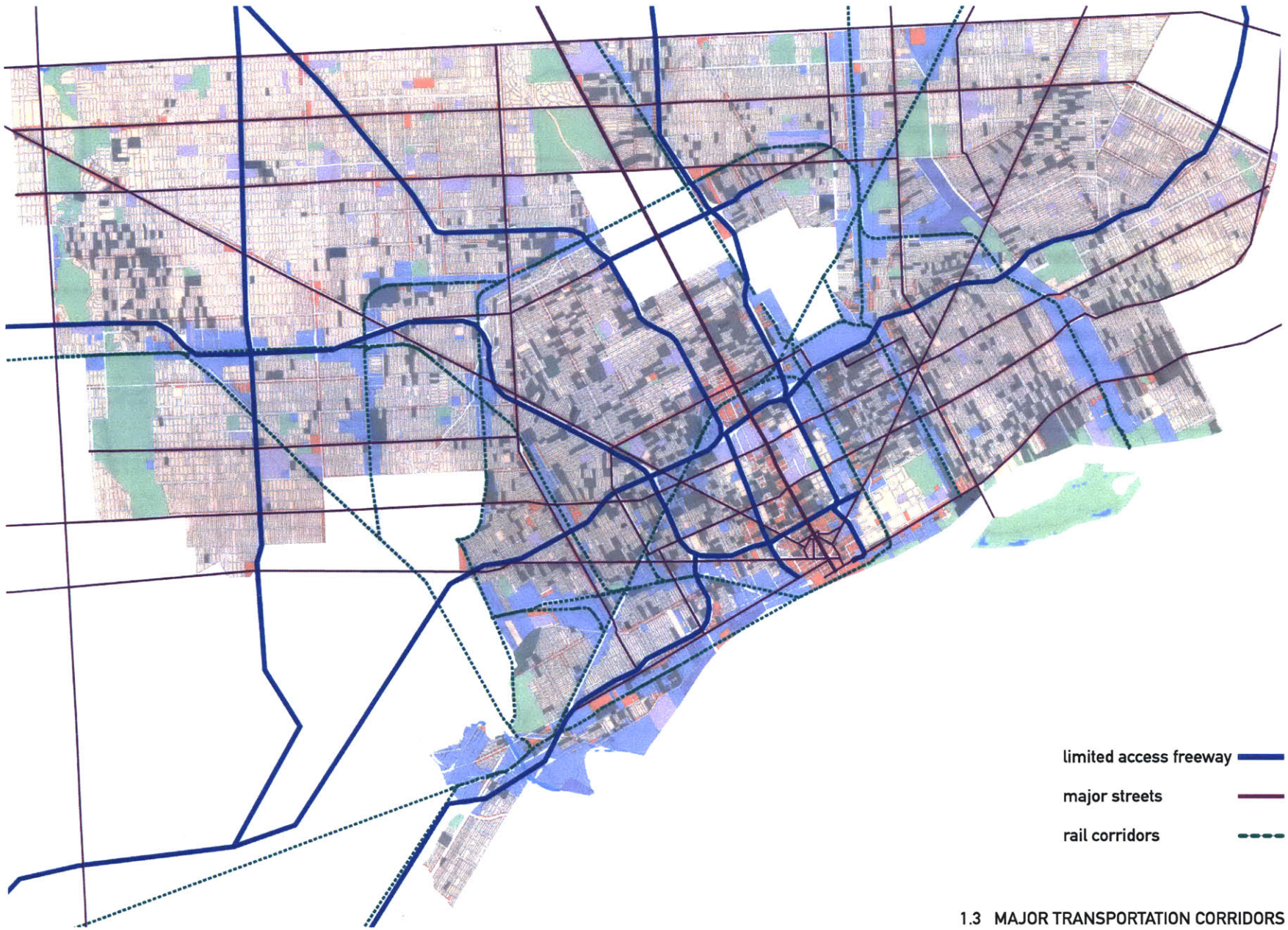
The new uses, some of which are examined in detail in appendix 3, must also be coupled with implementation policies that work together to promote the idea of a sustainable city. The key to achieving this is through an integration of the new uses both amongst themselves, as well as with the existing urban fabric and population. Each particular enterprise should be compatible with its location in regards to the adjacent land uses and the nature of the surrounding neighborhoods. Rather than arbitrarily spreading new development around the city, the placement of these interventions should be organized according to physical, programmatic, and cultural cues that exist in nodes around Detroit. These nodes—which can be defined as the intersection of various urban factors such as transportation routes, industrial or commercial corridors, rail lines, enterprise zones, institutional ballast, and areas of high land vacancy and disinvestment (figs 1.1 - 1.3)—must be stabilized and strengthened in order to connect areas of density within this stretched fabric rather than attempting to fill the city back up with inarticulate program for a non-existent market. Each one may have certain conditions that are particularly suitable to one type of development strategy, thus having the potential to become a district defined by that land use. The formation of these districts begins to set up a network of varying



1.2 VACANT LAND CONCENTRATION

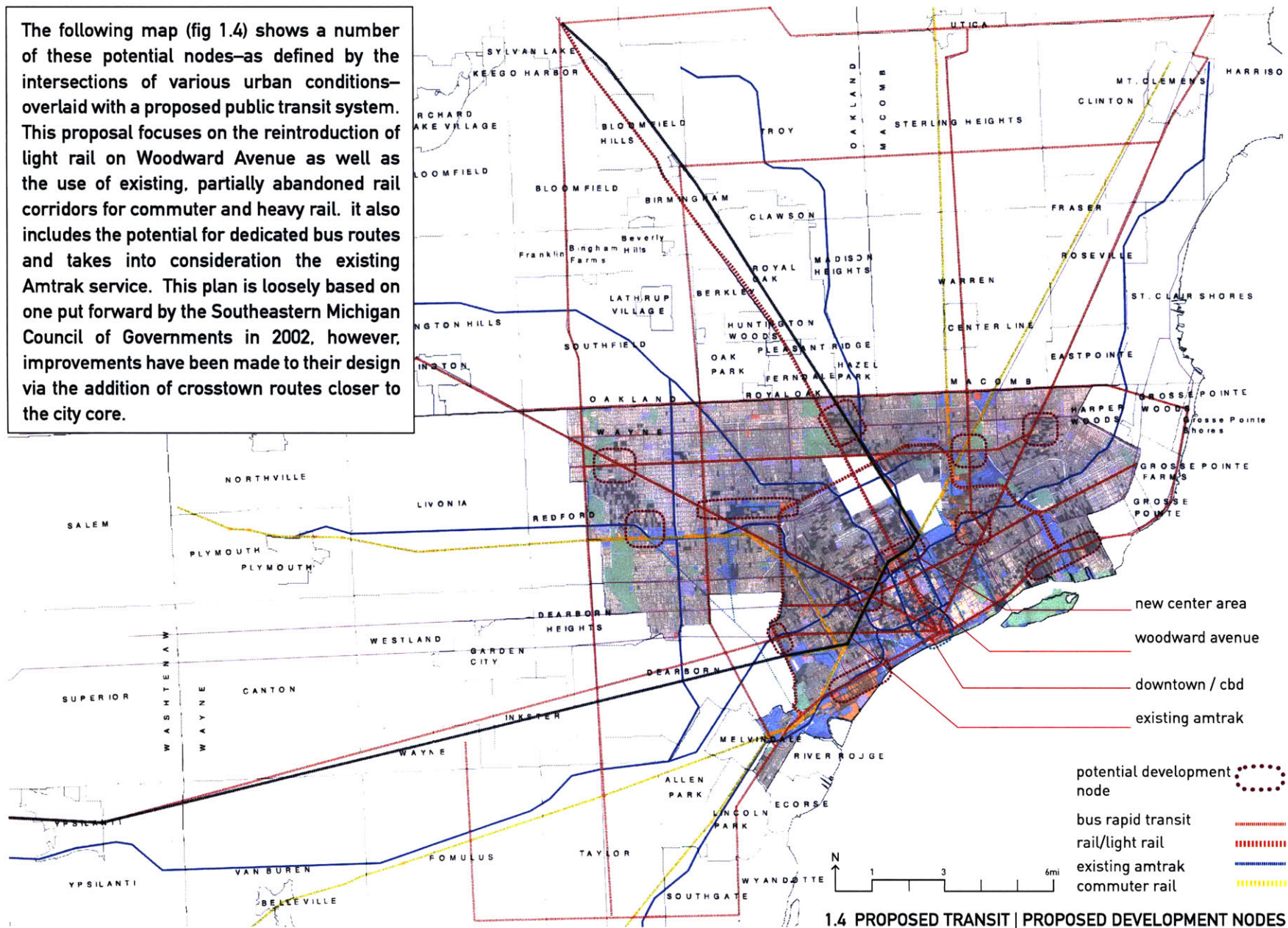
but interdependent communities that can enrich the legibility and sustainability of the city.

It is also crucial that these nodes be physically connected to one another by a system of transportation that is accessible to all residents, regardless of age or economic status. For Detroit to be sustainable on a physical level, all of the various urban nodes—consisting of residential neighborhoods, industrial corridors, retail and commercial zones, recreational and cultural areas, major institutions, and the central business district—must be accessible by a balance of private and public transportation. Detroit is currently a city dominated by roadways that primarily serve private automobiles and commercial trucks. This is contrasted by a very limited mass transit system consisting of diesel buses on the major streets, one Amtrak station, and a general lack of connection to the suburbs. This large discrepancy in mode share places an enormous strain on the many residents without access to automobiles. Ironically, in the city that once provided cars to the world, it is becoming increasingly difficult to own one. This is due primarily to the significantly higher insurance rates within the city limits. Additionally, there is very little pedestrian oriented development, and virtually no accommodations for bicyclists on the roadways. Detroit needs to invest financially and mentally on a system of public transportation as well as a network of pedestrian and bike friendly connections, both of which will reduce the city's dependence on private automobiles and reconnect the disparate urban elements on a human scale. This improved system can be multi-modal, consisting of commuter rail on the existing rail corridors; light rail down the major streets such as Woodward Avenue; and a general upgrade of bus service. With the introduction of a reliable transit system these nodes can begin to benefit from transit oriented development.

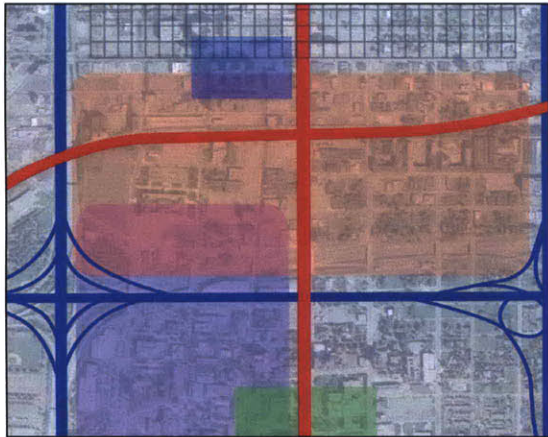


1.3 MAJOR TRANSPORTATION CORRIDORS

The following map (fig 1.4) shows a number of these potential nodes—as defined by the intersections of various urban conditions—overlaid with a proposed public transit system. This proposal focuses on the reintroduction of light rail on Woodward Avenue as well as the use of existing, partially abandoned rail corridors for commuter and heavy rail. It also includes the potential for dedicated bus routes and takes into consideration the existing Amtrak service. This plan is loosely based on one put forward by the Southeastern Michigan Council of Governments in 2002, however, improvements have been made to their design via the addition of crosstown routes closer to the city core.



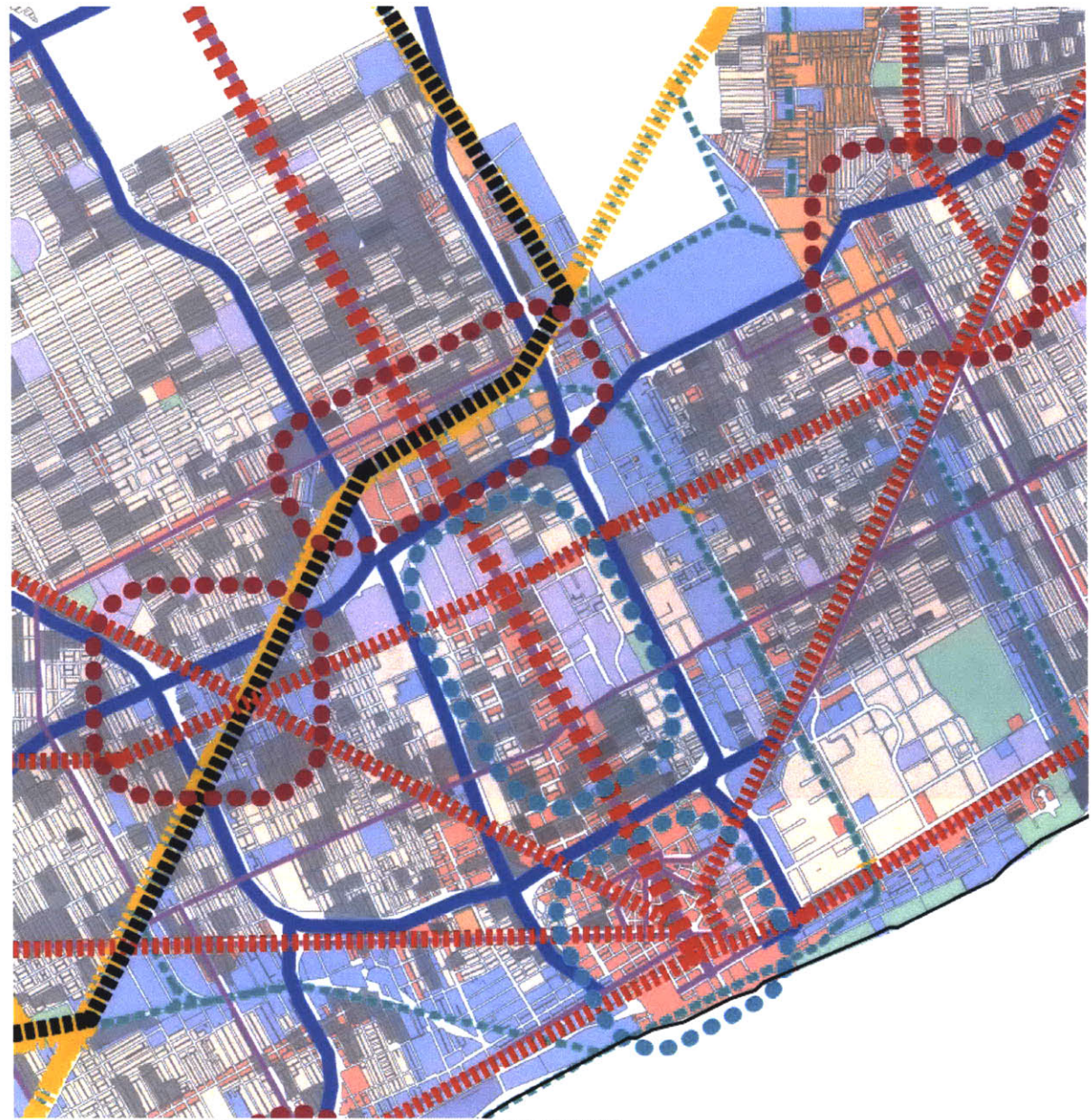
1.4 PROPOSED TRANSIT | PROPOSED DEVELOPMENT NODES



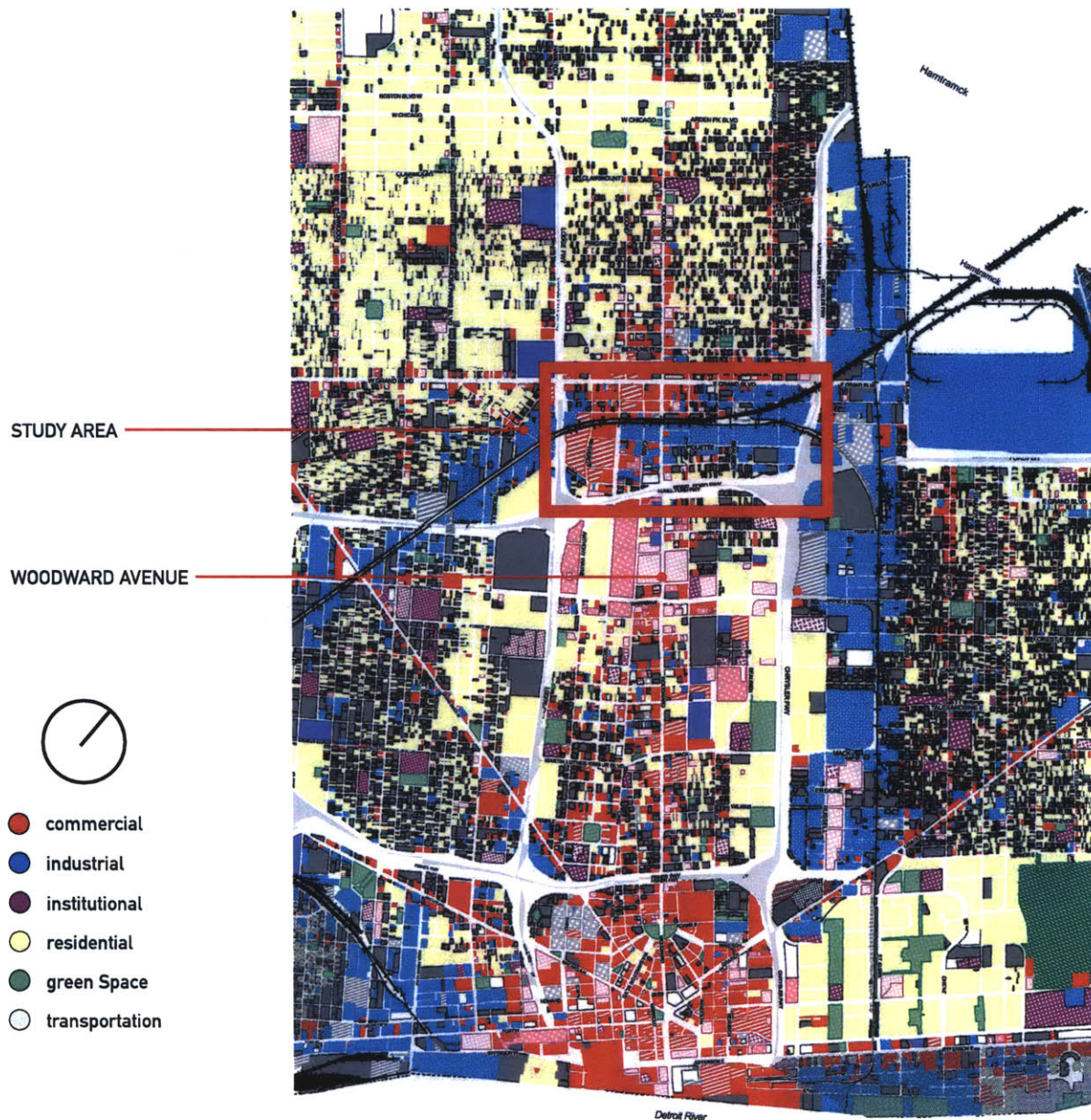
SITE CONDITIONS

existing infrastructure
institutional ballast

A large scale intervention onto Detroit's infrastructure will not be effective unless there is an appropriate interface with the nodes and land uses that are being connected at the neighborhood scale. The introduction of public transportation to an underserved area introduces opportunities for transit and pedestrian oriented development. In order to test these various smaller scale strategies, the New Center area along the Woodward Avenue Corridor has been selected as the site for the urban design proposal.



DETAIL OF NODE DIAGRAM SHOWING WOODWARD CORRIDOR

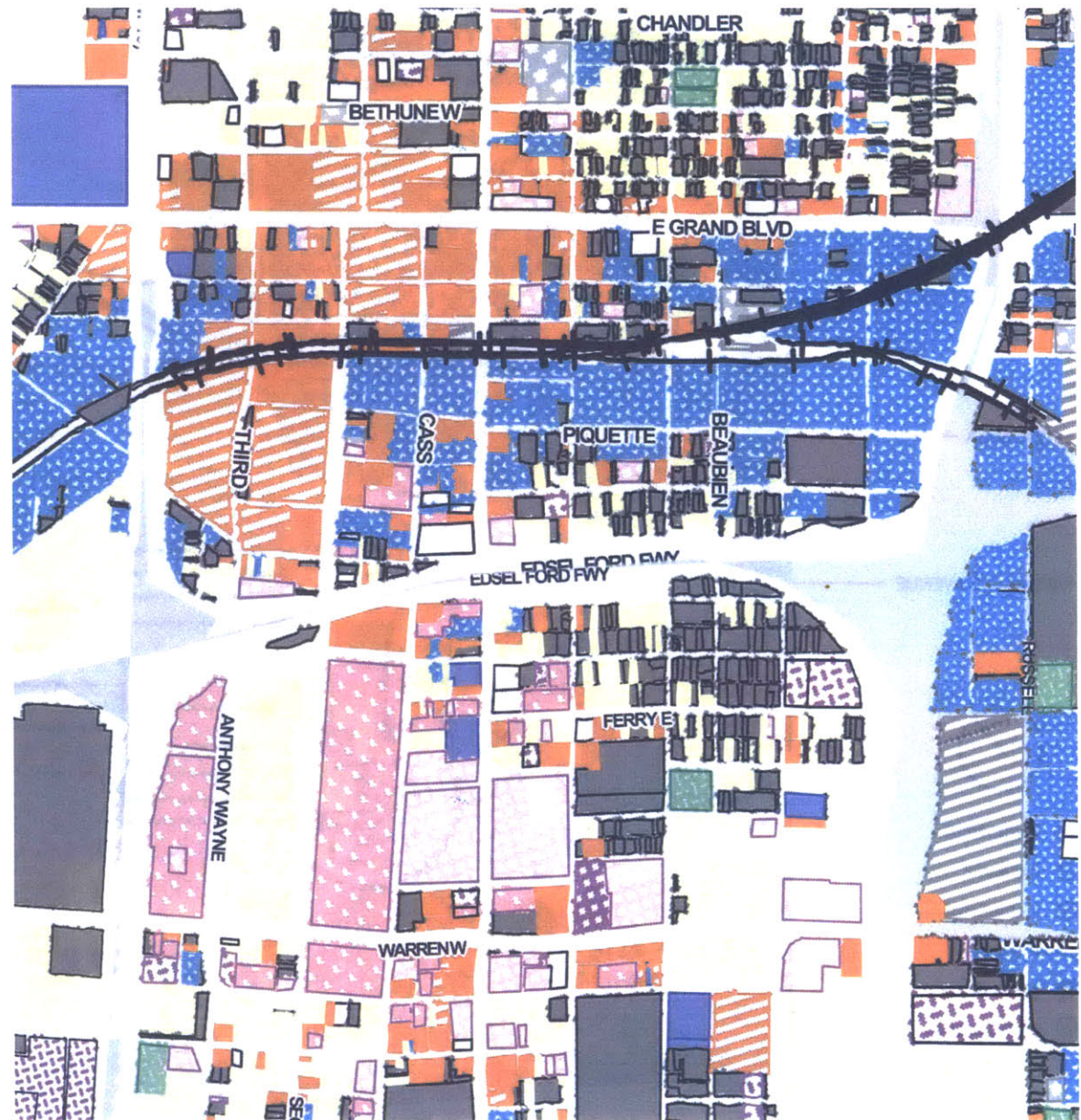


2.1 LAND USE OF WOODWARD AVENUE CORRIDOR

This particular neighborhood provides an extremely useful cross-section of the city, in which can be found examples of every post-industrial condition that defines Detroit as a whole. It is a site bounded on three sides by depressed freeways, bisected one way by the eight laned Woodward Avenue, and the other way by a four track elevated rail viaduct. At the intersection of Woodward and the rail corridor is the city's only Amtrak station. Almost 75% of the 265 acre site is vacant, and nearly 30% of the existing structures are abandoned. The Piquette Avenue industrial corridor is lined with the empty shells of the hulking masses that were once automobile factories, and there is an equally hulking, yet still thriving cluster of buildings that once formed the campus of the General Motors headquarters—a complex of office towers whose primary tenant is now the State of Michigan.

There are factory buildings, commercial towers, small retail buildings, warehouses, single-family-detached houses, parking garages, churches, university buildings, a hospital and a train station.

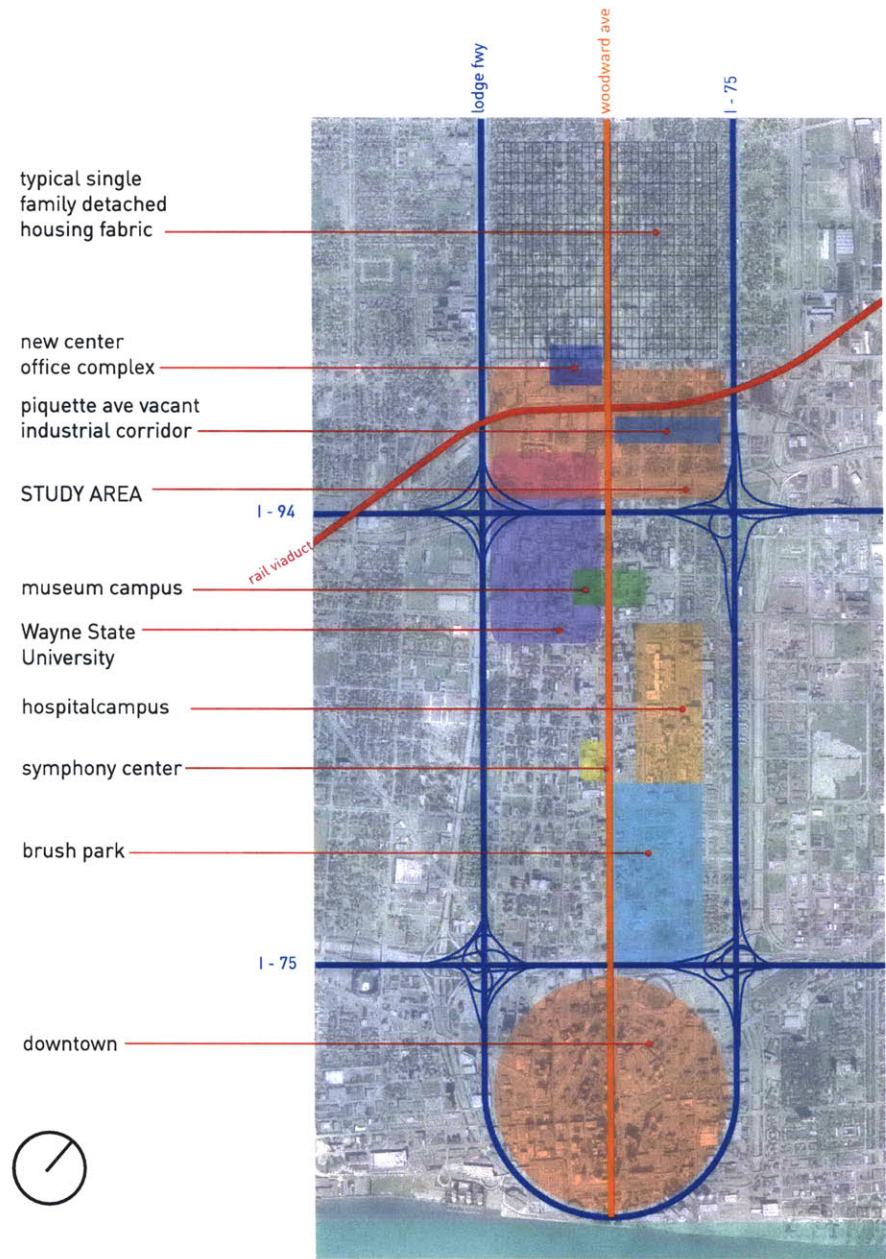
The New Center area forms the third link in a sequence of nodes beginning with the riverfront and heading north along Woodward Avenue (fig 2.3). Directly to the south, across I-94, is Wayne State University's main campus, providing the site with a significant institutional ballast and creating the central component to the potential programming of the design.



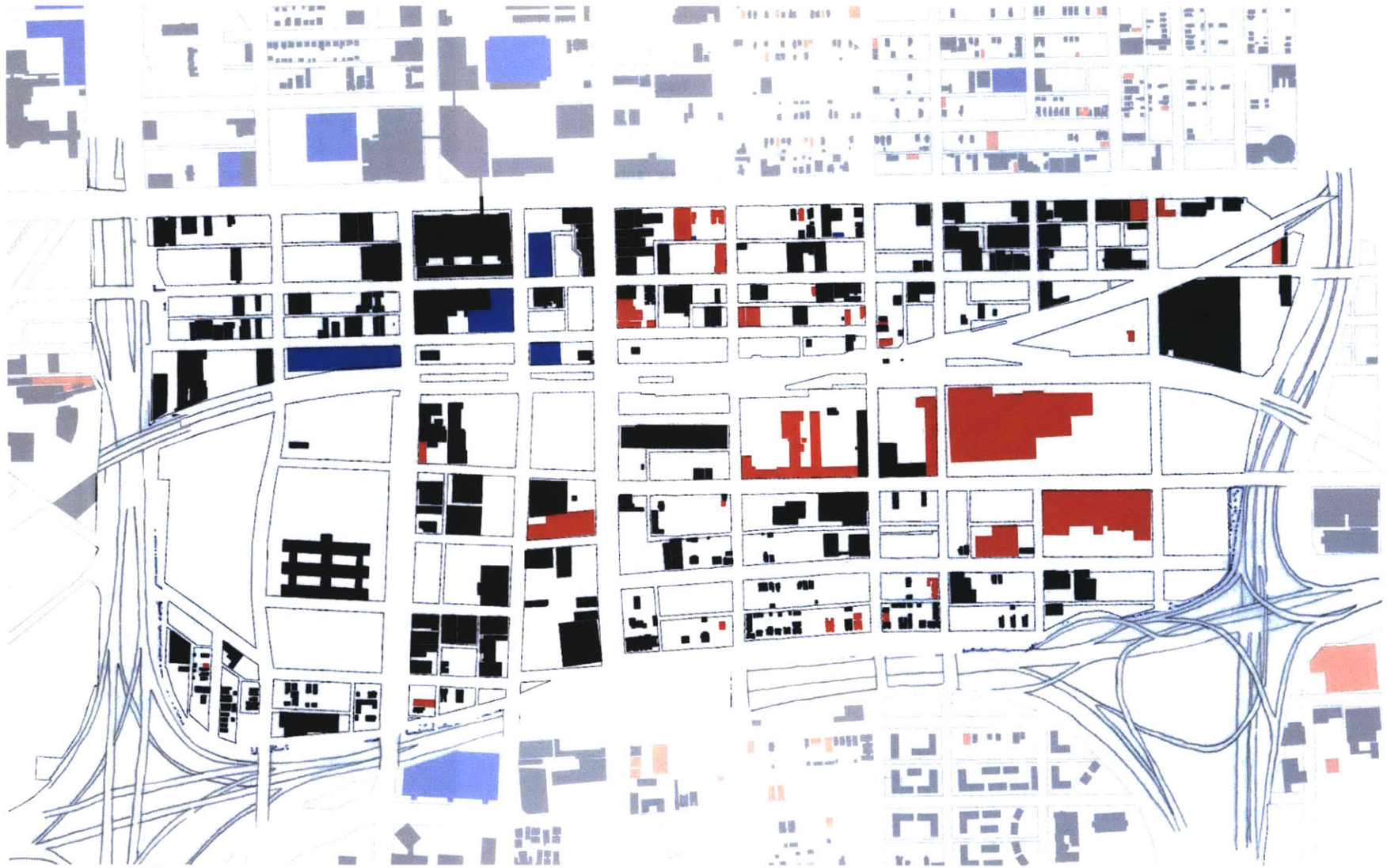
DETAIL OF SITE LAND USE MAP



2.2 WOODWARD AVENUE CORRIDOR AERIAL

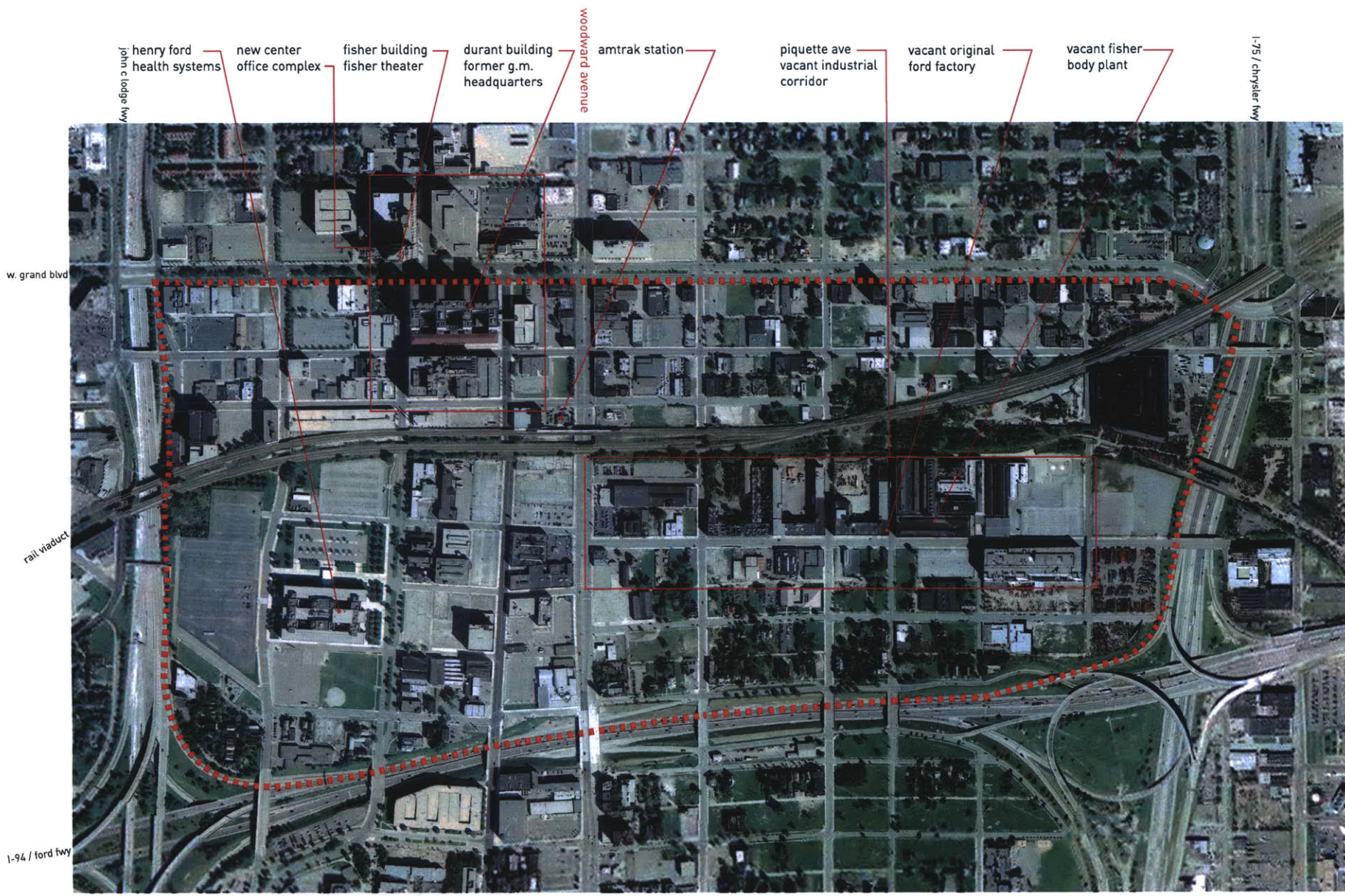


2.3 WOODWARD AVENUE CORRIDOR EXISTING INFLUENCES



- vacant building ●
- parking structure ●

2.4 EXISTING FIGURE GROUND DIAGRAM



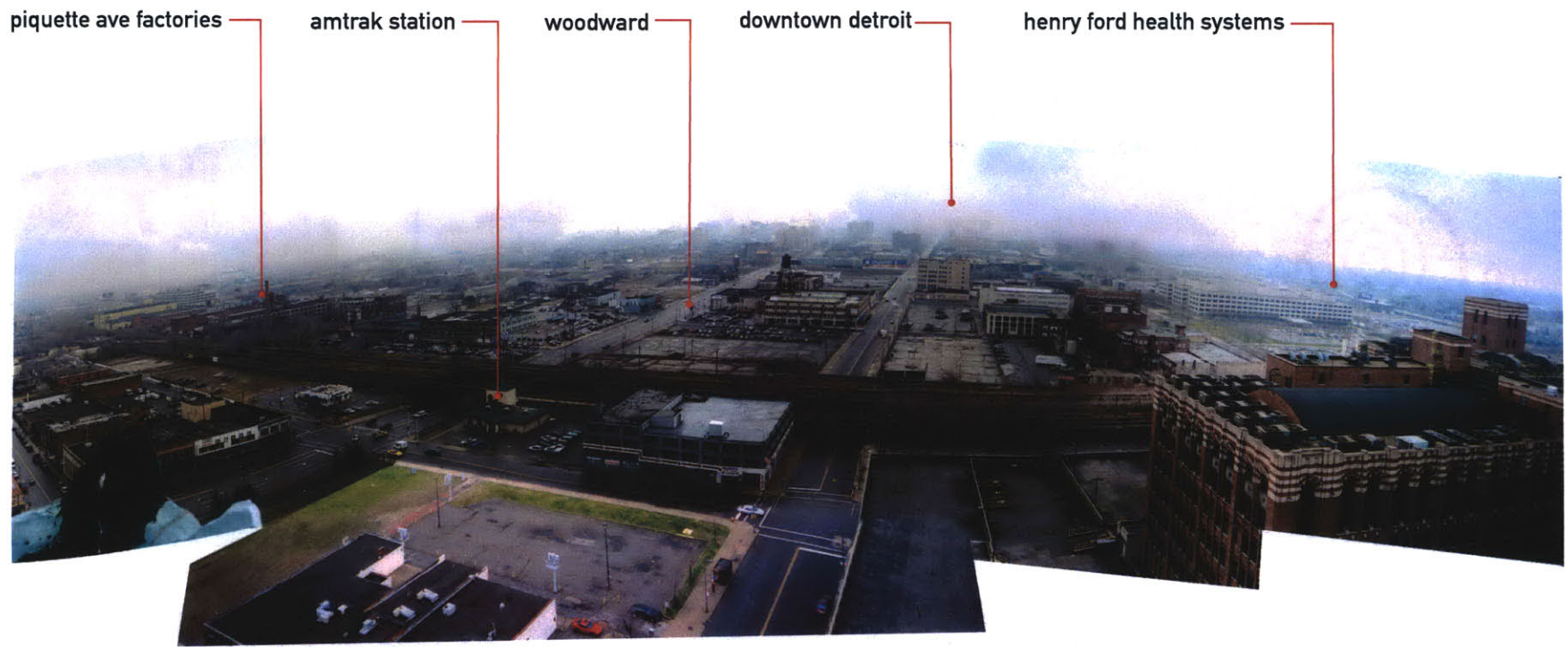
2.5 WOODWARD AVENUE CORRIDOR AERIAL



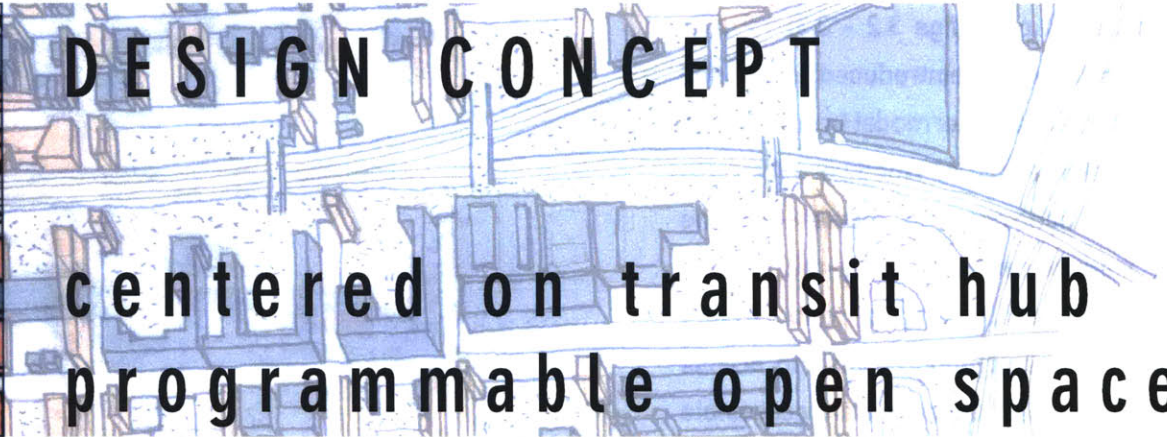
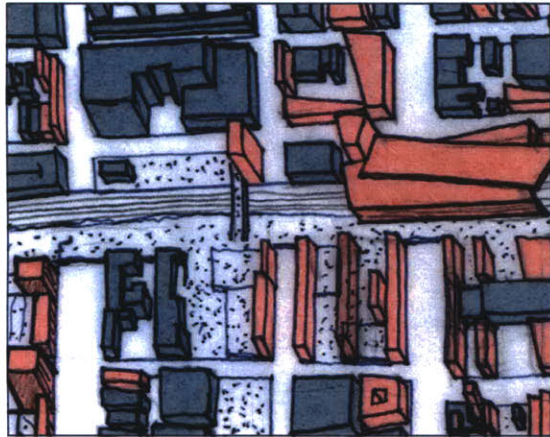
2.6 SITE PHOTOS



2.7 SITE PHOTOS



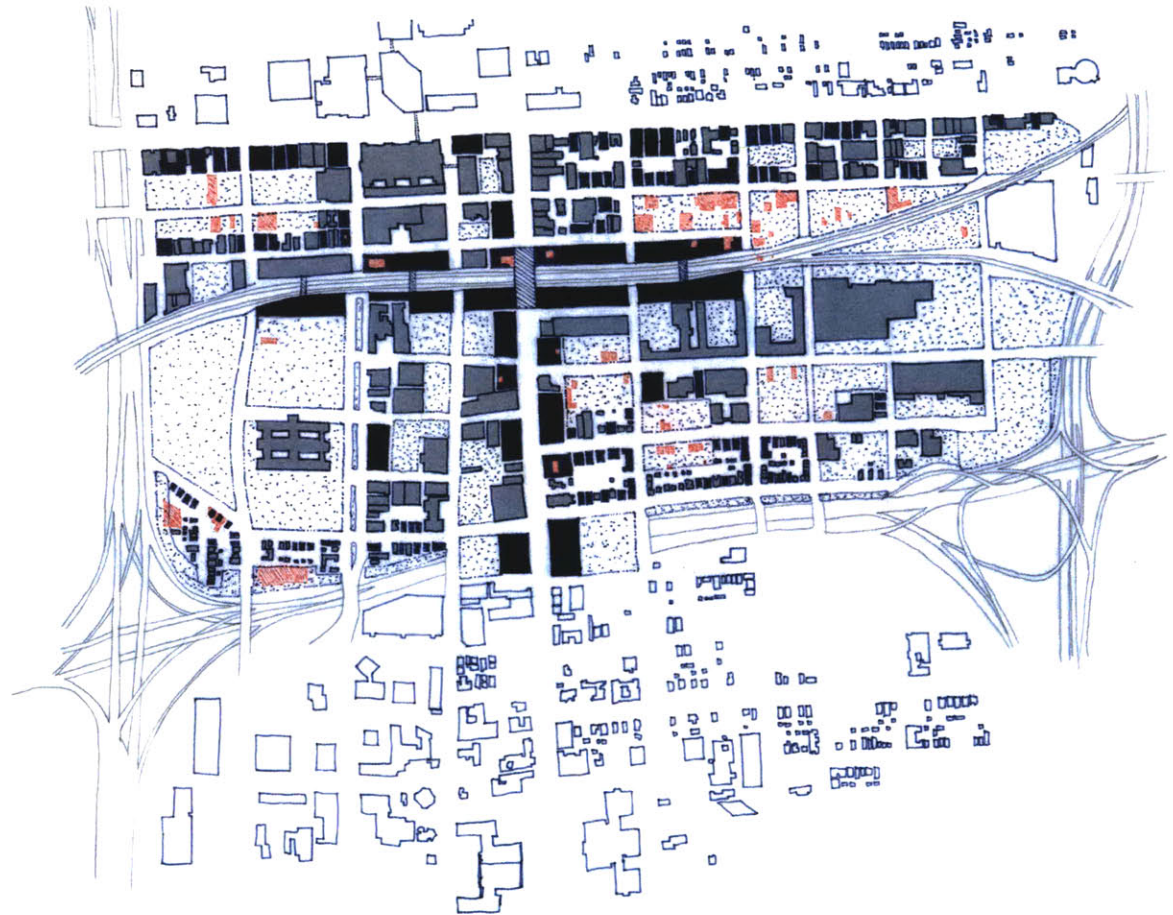
2.7 VIEW FROM ROOF OF THE FORMER GENERAL MOTORS HEADQUARTERS BUILDING



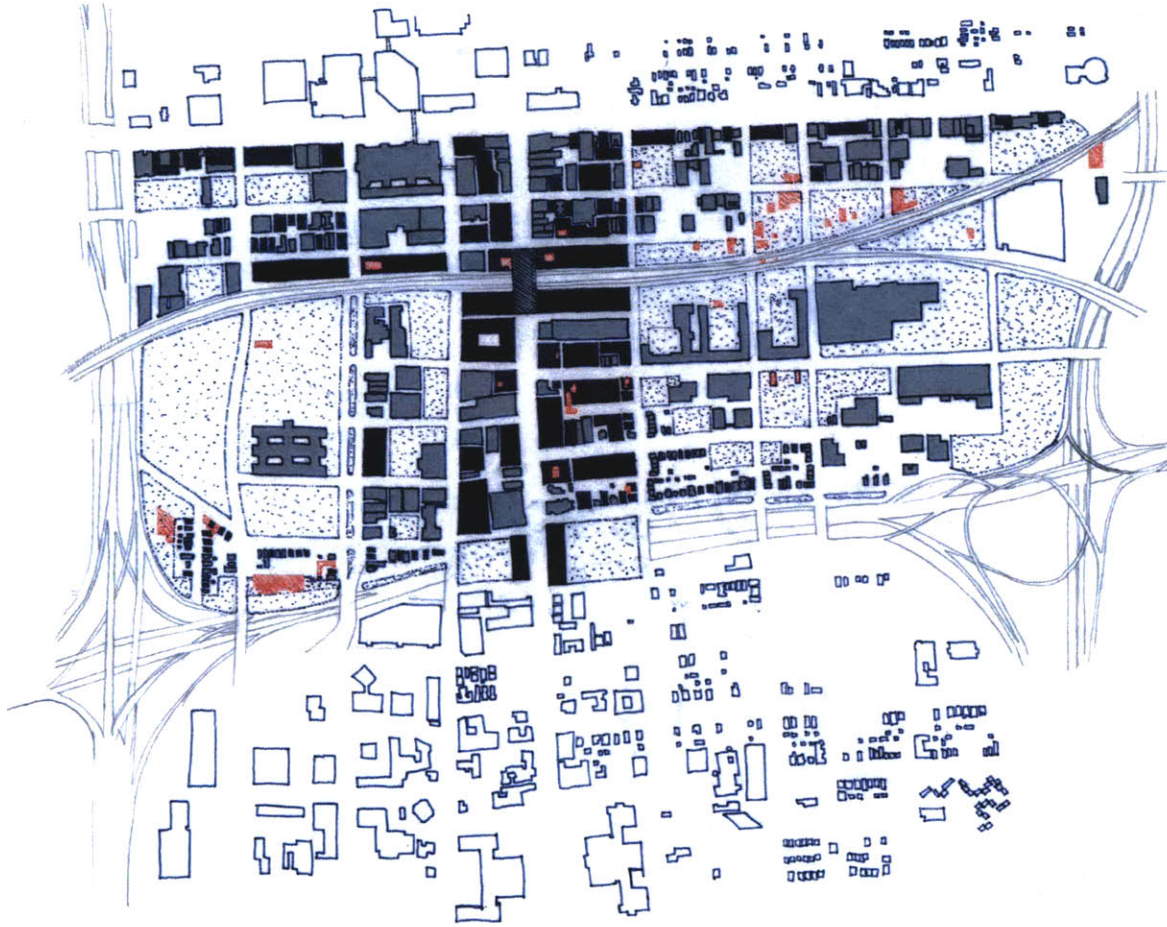
DESIGN CONCEPT

**centered on transit hub
programmable open space**

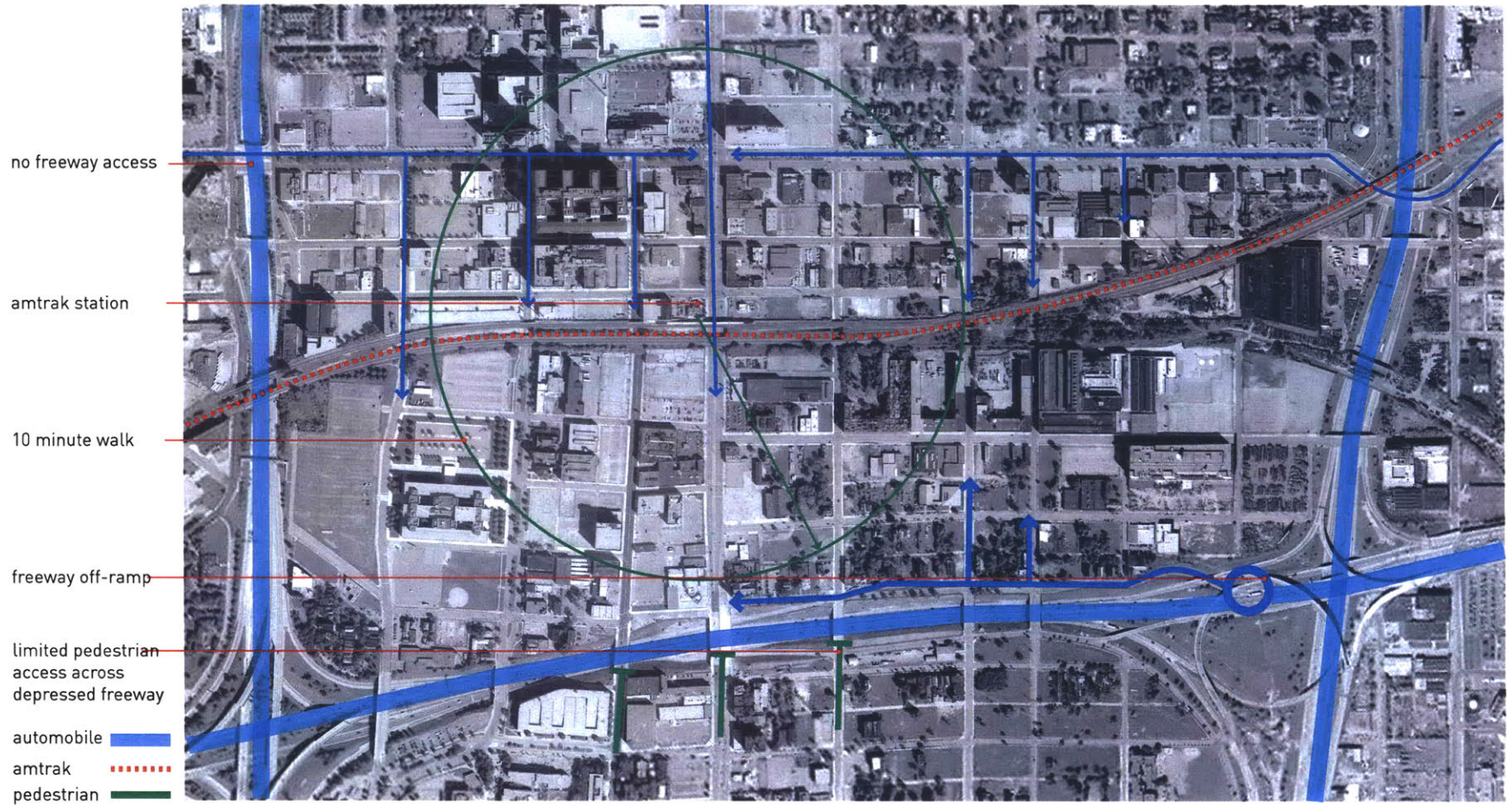
Urban design principles employed in this proposal focus on stabilizing the existing pockets of development—such as the New Center office complex—as well as introducing amenities that will attract reinvestment into the area. The initial intervention will act as the infrastructural interface between the New Center neighborhood and the proposed city-wide transit plan (figs 3.2 - 3.3). Public transportation is reintroduced to the site in the form of an intermodal transit station at the intersection of Woodward Avenue—carrying light-rail and busses—and the rail viaduct—carrying heavy-rail transit, commuter rail, Amtrak, and freight rail. The use of public transit to access the site entails a pedestrian accessible counter-part to the infrastructural investment, providing urban greenways and links across the freeways and rail viaduct. Automobile access—which will most likely remain the dominant mode of transportation in Detroit—will also be improved on the site by introducing on/off ramps to the flanking highways.



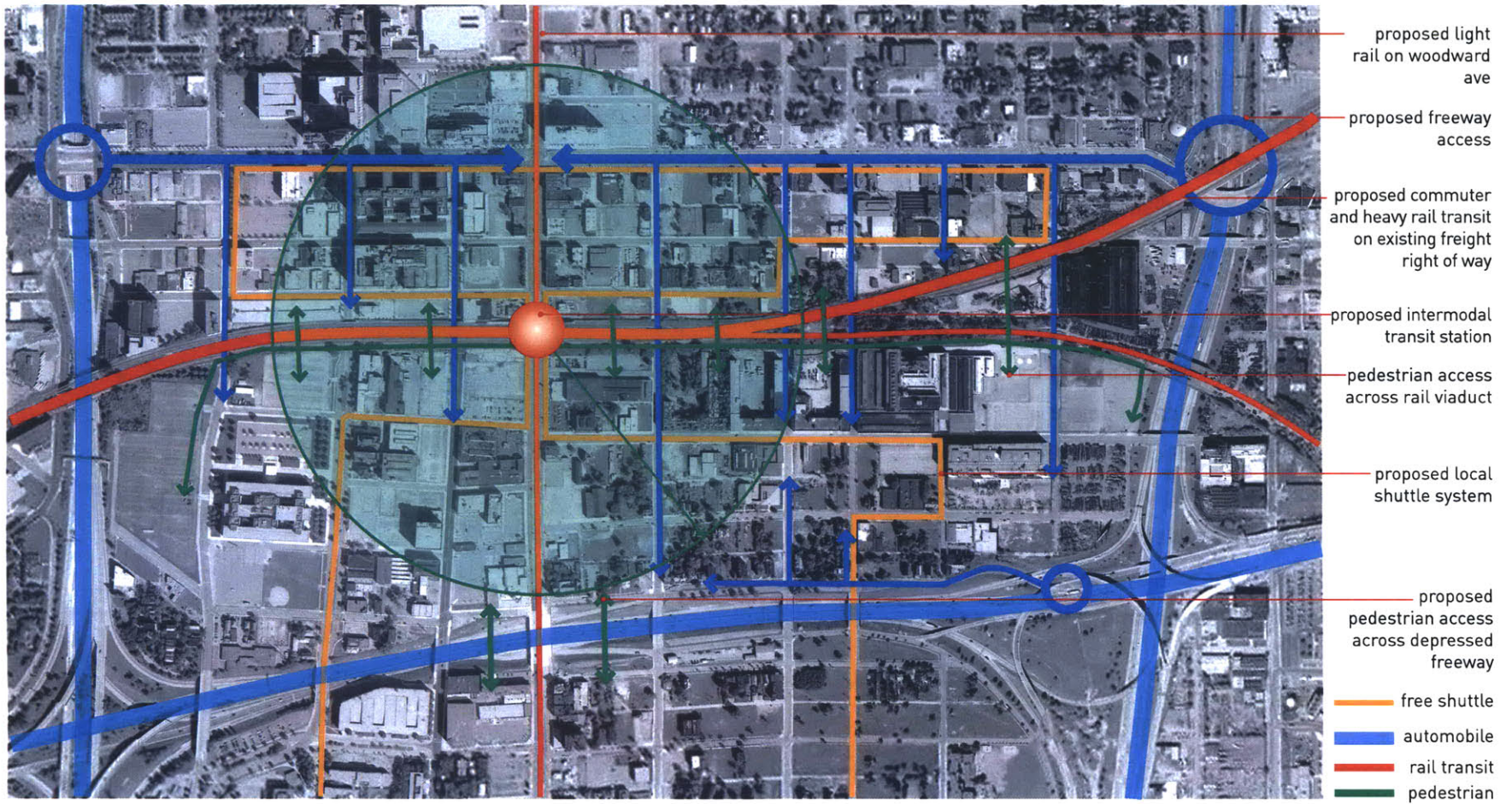
3.1 MASSING AND OPEN SPACE CONCEPT SKETCHES



In tandem with the infrastructural initiatives are programmatic principles which seek to exploit the existing assets of the site: the institutional ballast of Wayne State University, the high quality vacant building stock, the available land, the large volume of local automotive traffic provided by Woodward Avenue, and the site's proximity to downtown and the cultural district.



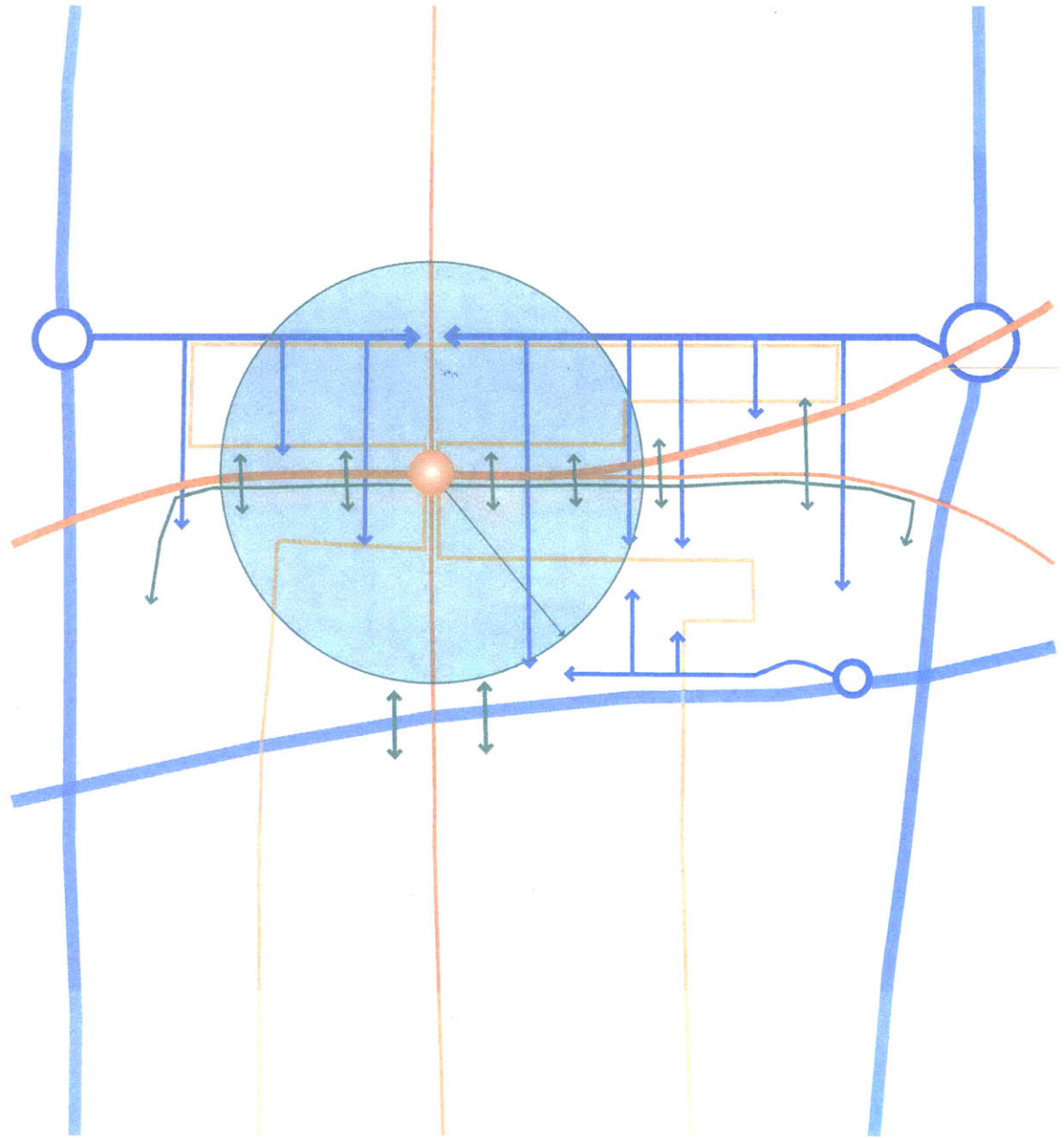
3.2 EXISTING TRAFFIC PATTERNS



3.3 PROPOSED TRAFFIC DIAGRAM

DESIGN PRINCIPLES:

- Promote building density along the entire length of Woodward Avenue by maintaining a continuous retail streetfront. This will achieve a connection to the nodal sequence set up by the central business district, the midtown cultural district, and Wayne State, forming a linear downtown.
- Reoccupy abandoned factory buildings with cultural amenities by transforming them into spaces that can house rehearsal, recording, production and performance venues for fledgling bands and record labels; a public athletic facility; an art and design incubator with live/work space; a magnet visual/performing arts high school.





3.4 URBAN DESIGN CONCEPT SKETCH

- Do not attempt to fill with unjustifiable amounts of program. Use small insertion of new program as a nexus for future development. The initial development consists primarily of a new technology campus currently being proposed as an extension of Wayne State. This eco-industrial park, under the title: NextEnergy, will be funded by a joint venture of various Michigan universities and the Big 3 auto companies as an initiative to explore alternative fuels for car engines. This limited line of research has the potential to expand into a center for multiple streams of environmental science including automobile recycling, phytoremediation of brownfield sites, and eco-friendly materials for both building and automotive construction. Among the various types of housing possible on this site would be dormitories and graduate housing for Wayne State, none of which currently exists on the present commuter campus, but is on the university's long-term agenda.

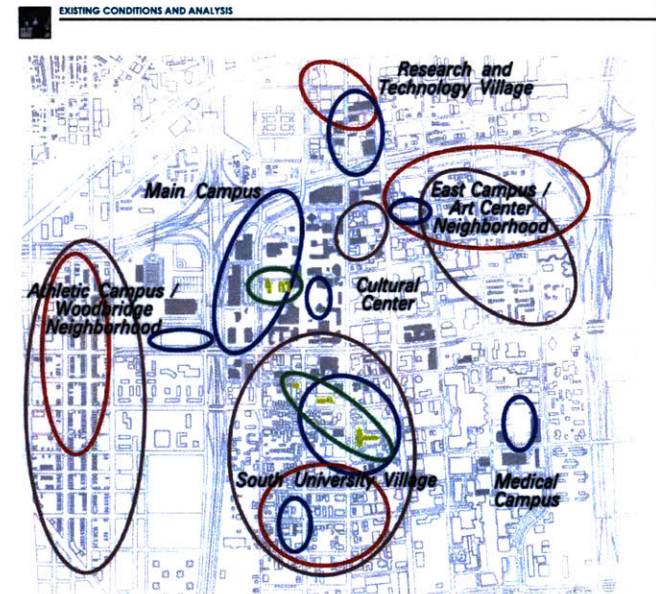
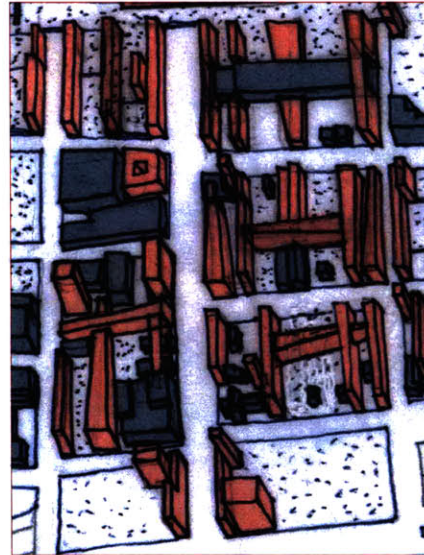
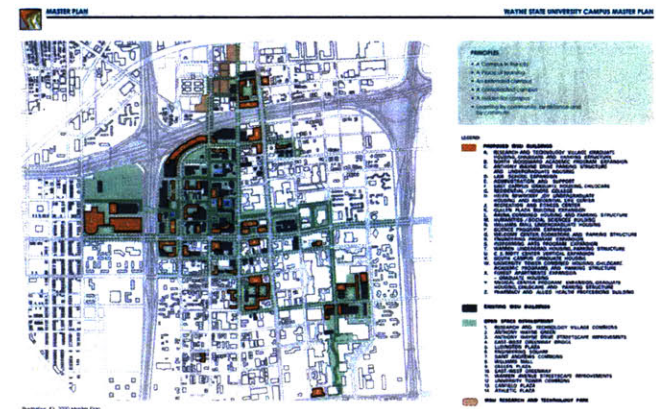


Illustration 30: Existing Housing Use on and Near Campus, 1998 Survey

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excerpts from the Wayne State University Master Plan
courtesy: Albert Kahn Associates

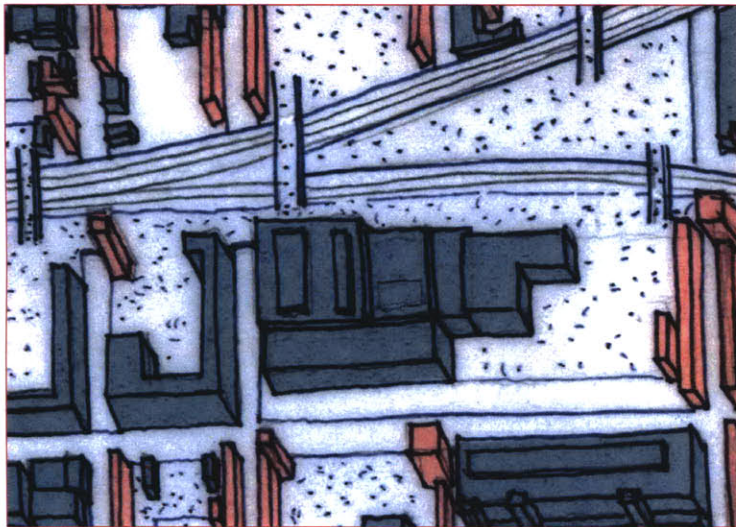
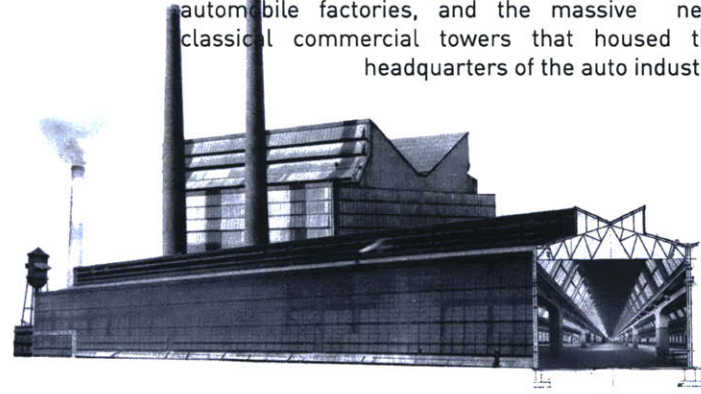
the research and technology campus—part of wayne state university's 2025 master plan—is a current collaboration of wayne state, university of michigan, michigan state and the big three auto companies in an effort to create alternative fuels for car engines. this line of research can broaden to incorporate other environmental technologies such as phytoremediation and materials re-use.



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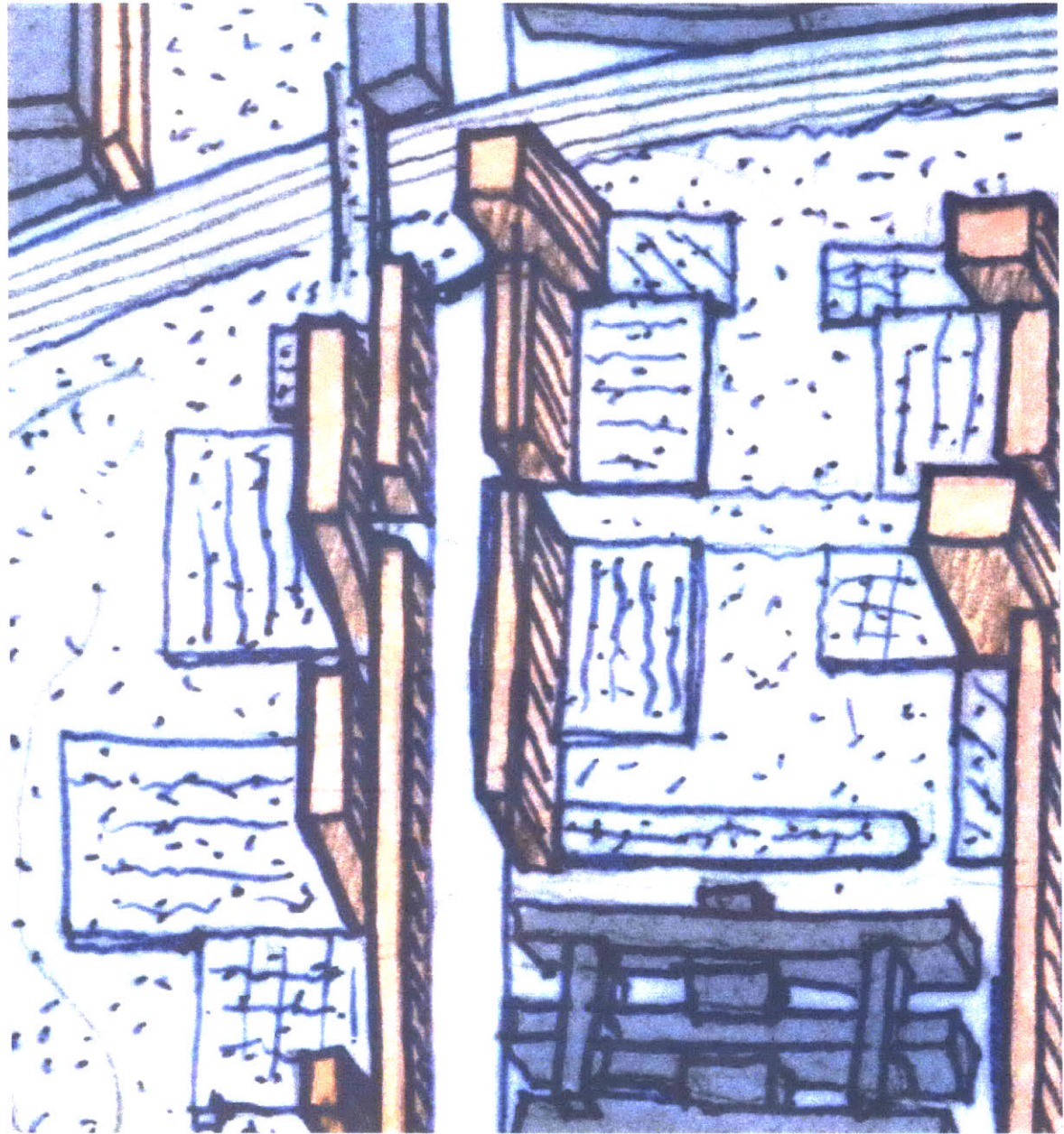
the intermodal transit station sits physically and architecturally between the two typologies with which albert kahn defined the form of detroit: the expansive skylit spaces of his proto-modern automobile factories, and the massive neo-classical commercial towers that housed the headquarters of the auto industry.



music incubator

jazz, blues, rock, punk, funk, motown, soul, gospel, techno, rap, hip-hop, fusion, house, dance, all thrive in one of the most powerful underground music scenes in the country. since the 50's, the gritty ghetto scenes of detroit's inner city, wed to the banal complacency of the middle class suburbs have given birth to dozens of bands and performers who have significantly changed the sound of pop music, with little or no help from the mainstream record industry. the proposed music incubator—housed in the former fisher body plant—provides young bands, dj's, and producers with financially subsidized spaces to write, rehearse, perform, and record music.

- Re-purpose vacant land by eliminating vast amounts of paved surface parking lots as a first step in creating a green network of multiple land uses. Pedestrian greenways will be created to provide access to Wayne State's main campus by bridging the freeway to the south as well as connect the quadrants of the site along and under the rail viaduct. By creating a block structure that posits the buildings along the perimeter and consolidates the open space on the interior, it allows for a system of community agricultural opportunities that can provide food and income for the residents. While the green spaces along the rail corridor and on the edges of the site are retained for recreational and pedestrian access, the majority of the interior block open spaces will be primarily used for various types of production: crops for food, phytoremediation plants, reforestation for lumber, and other urban agricultural uses.

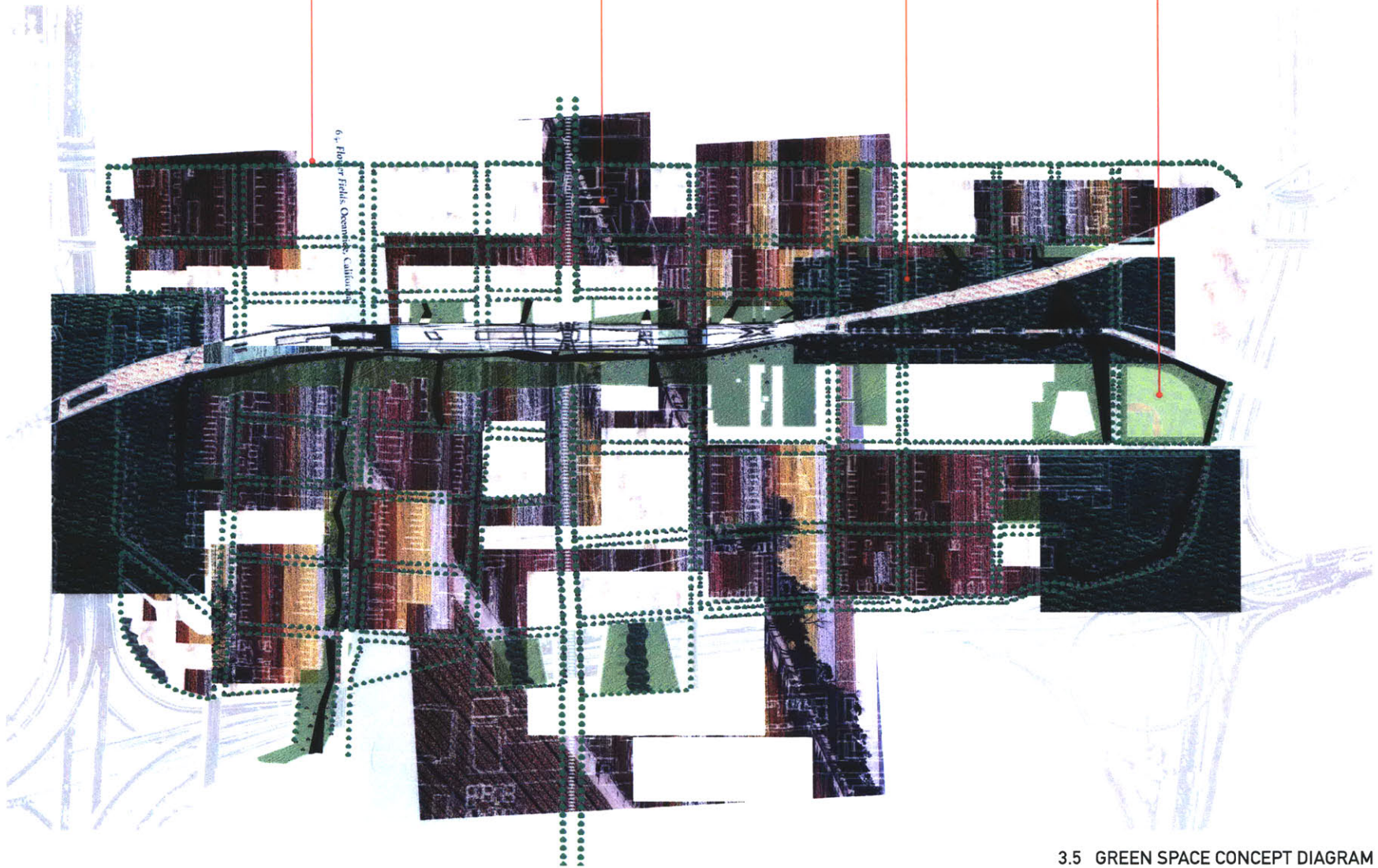


intensive streetfront
greening

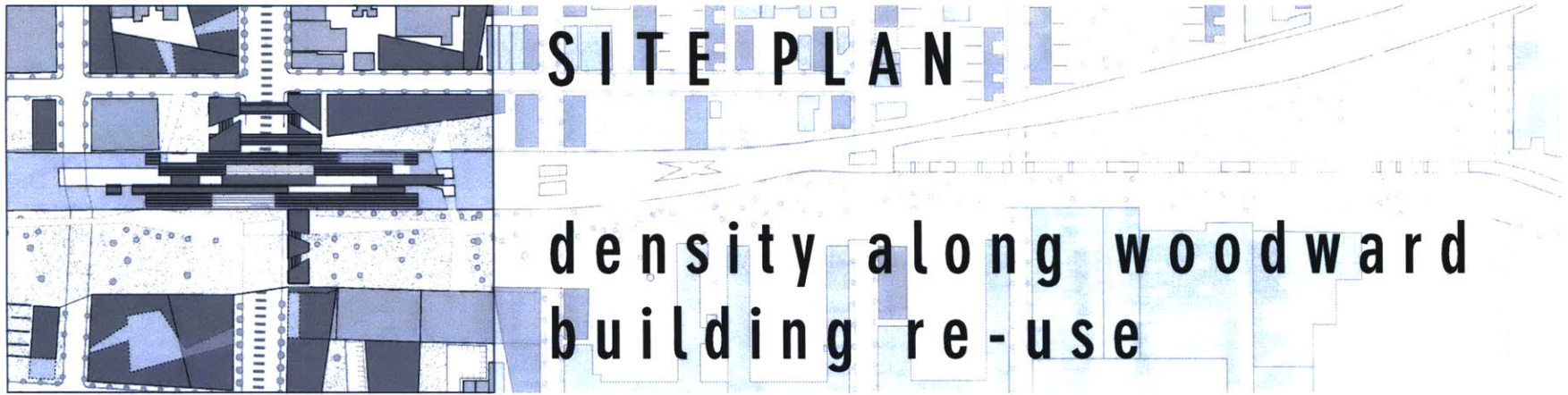
urban, community
based agriculture

reforestation for park
space, fruit production,
or lumber

recreational /
pedestrian oriented
greenspace

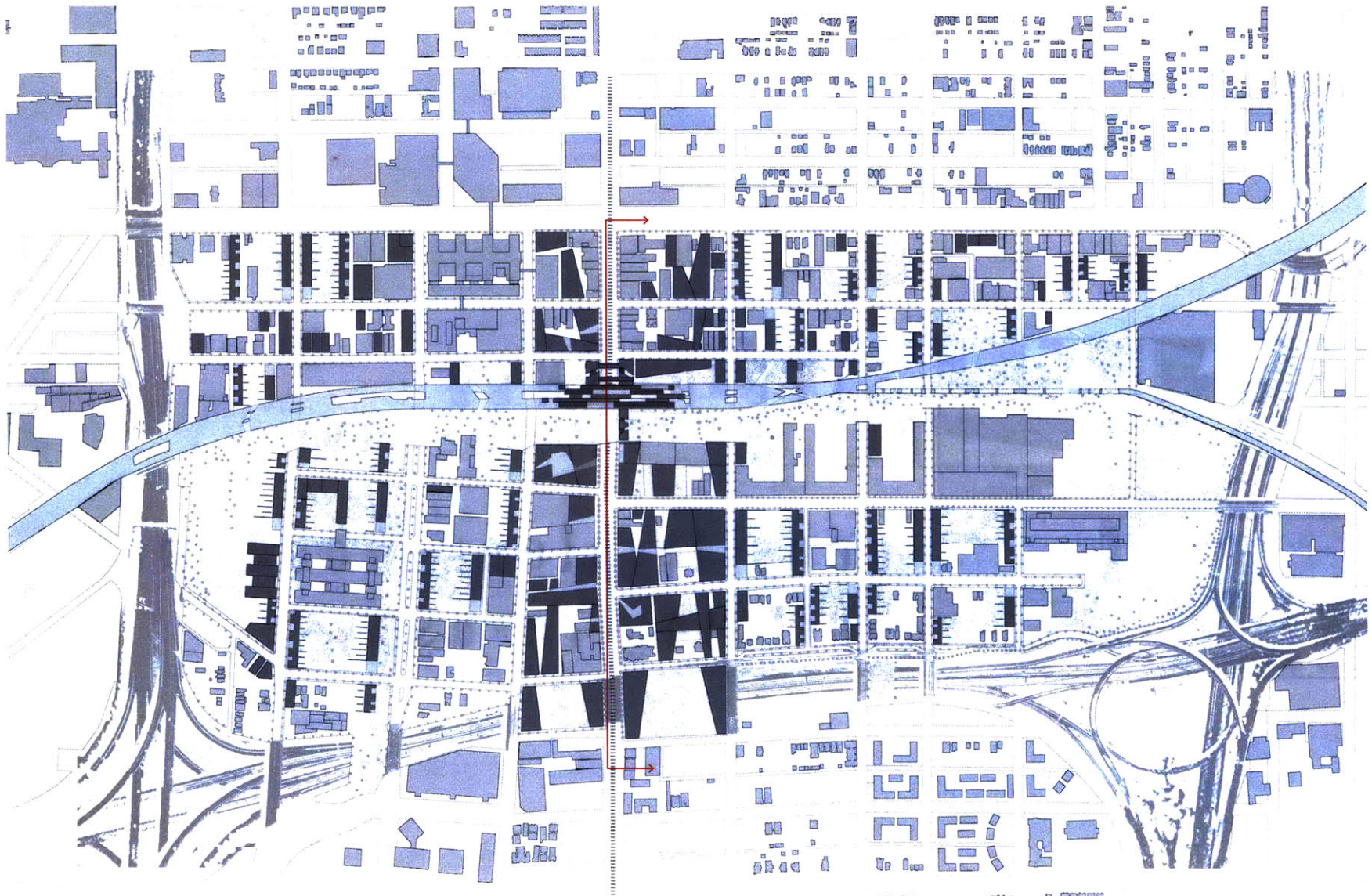


3.5 GREEN SPACE CONCEPT DIAGRAM

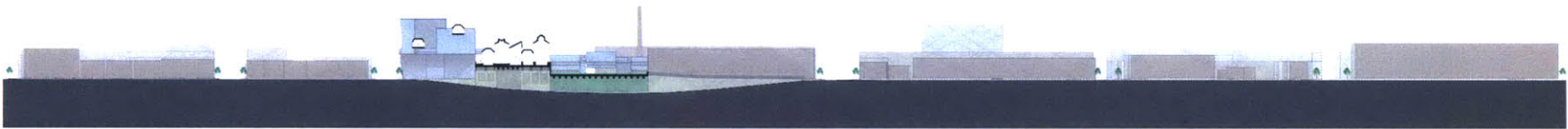


S I T E P L A N

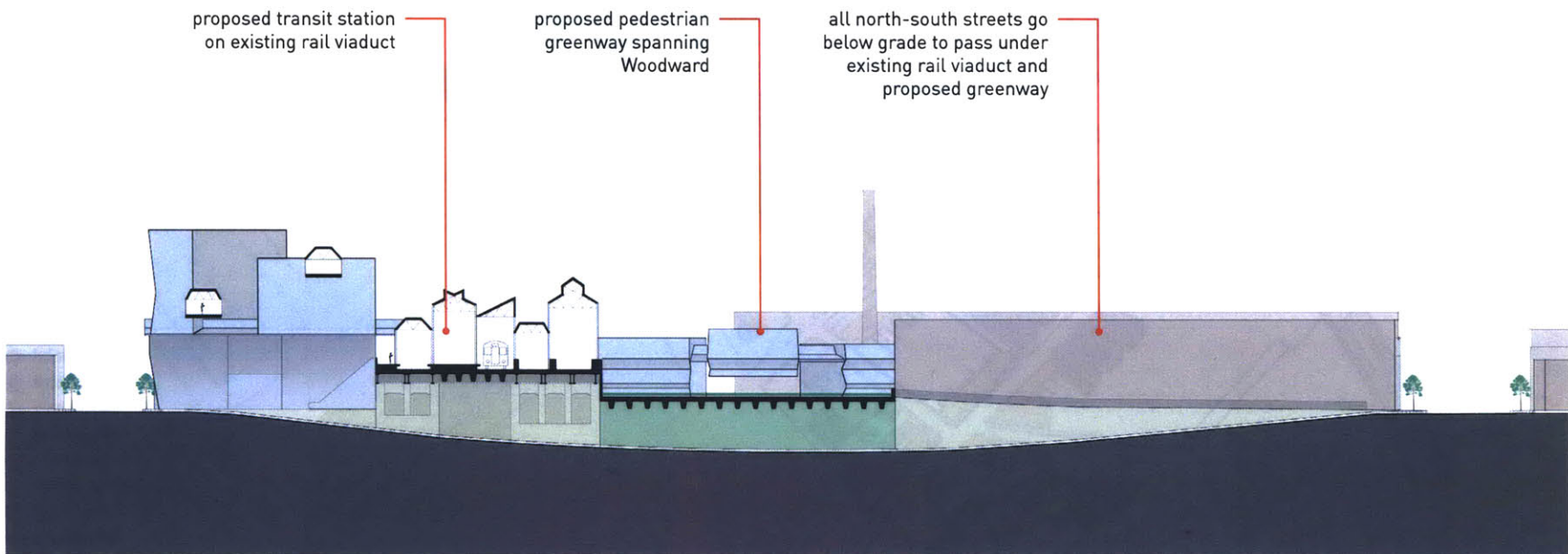
d e n s i t y a l o n g w o o d w a r d
b u i l d i n g r e - u s e



4.1 PROPOSED URBAN DESIGN PLAN

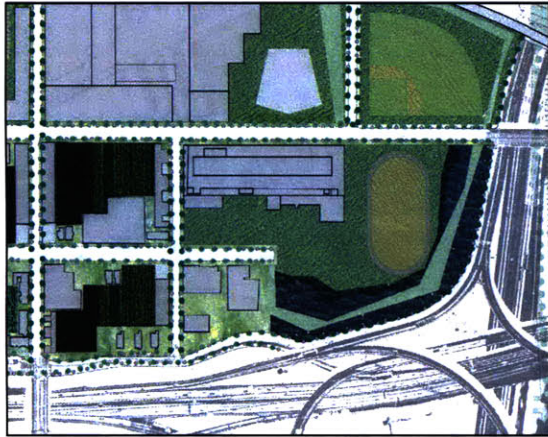


4.2 SITE SECTION THROUGH WOODWARD



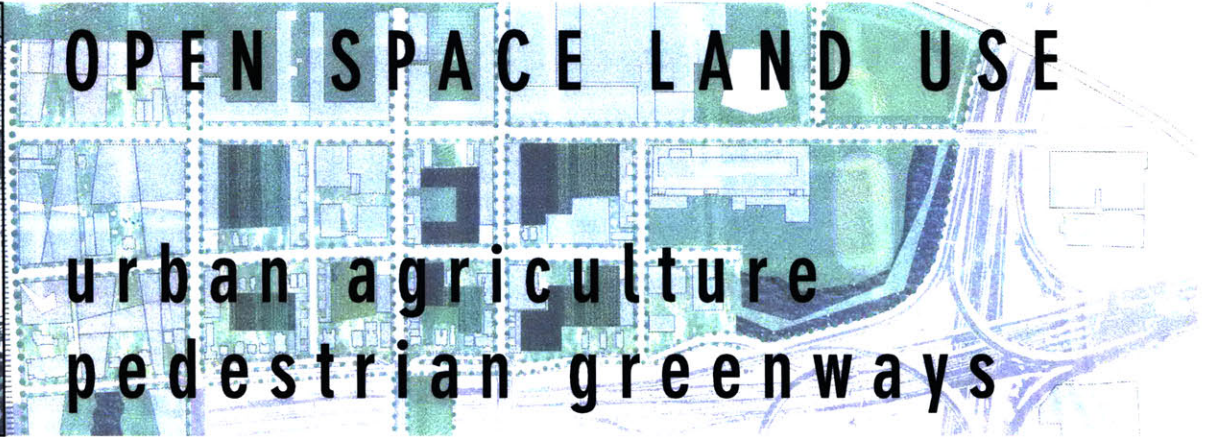
4.3 SECTION THROUGH WOODWARD AT TRANSIT STATION

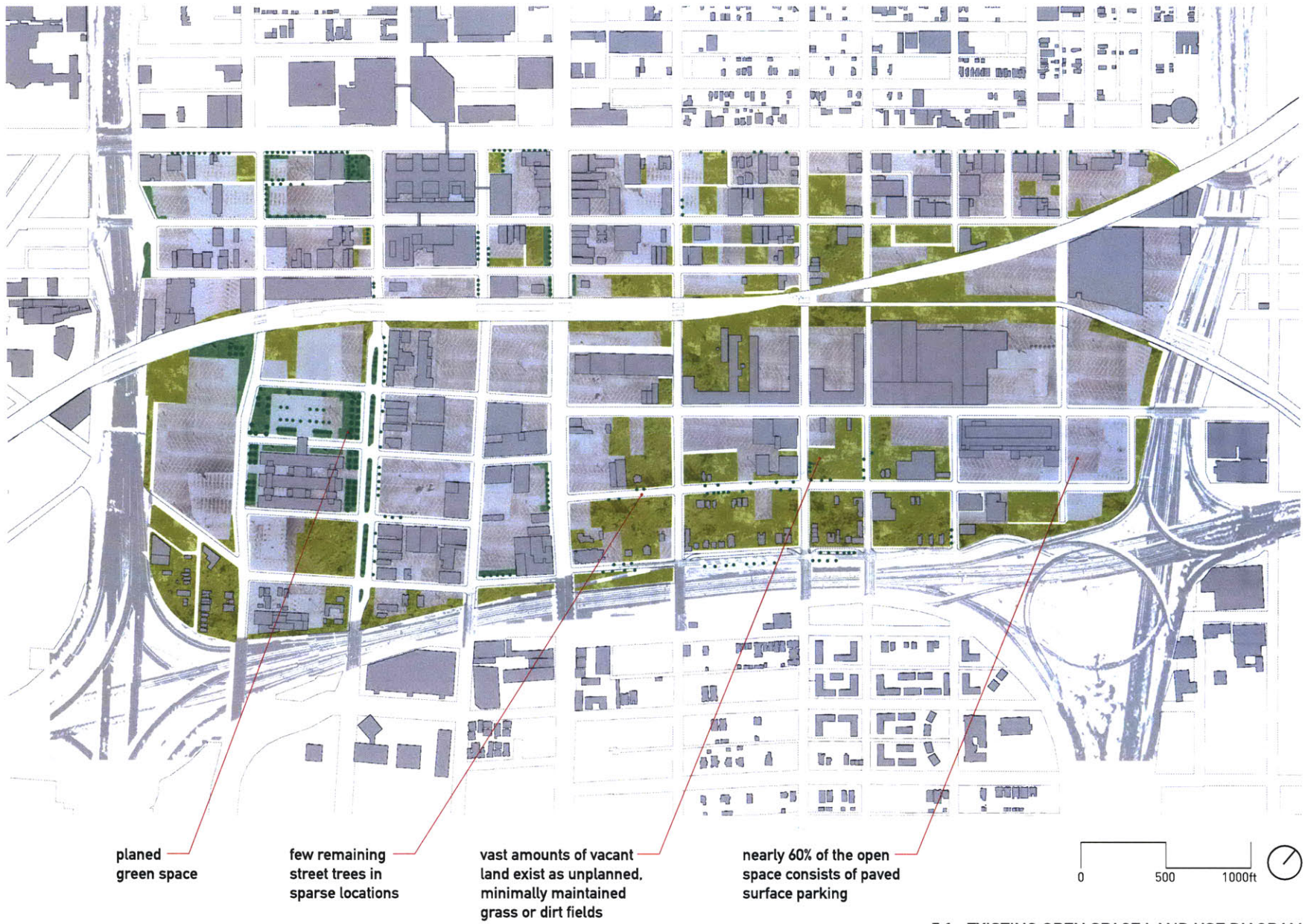




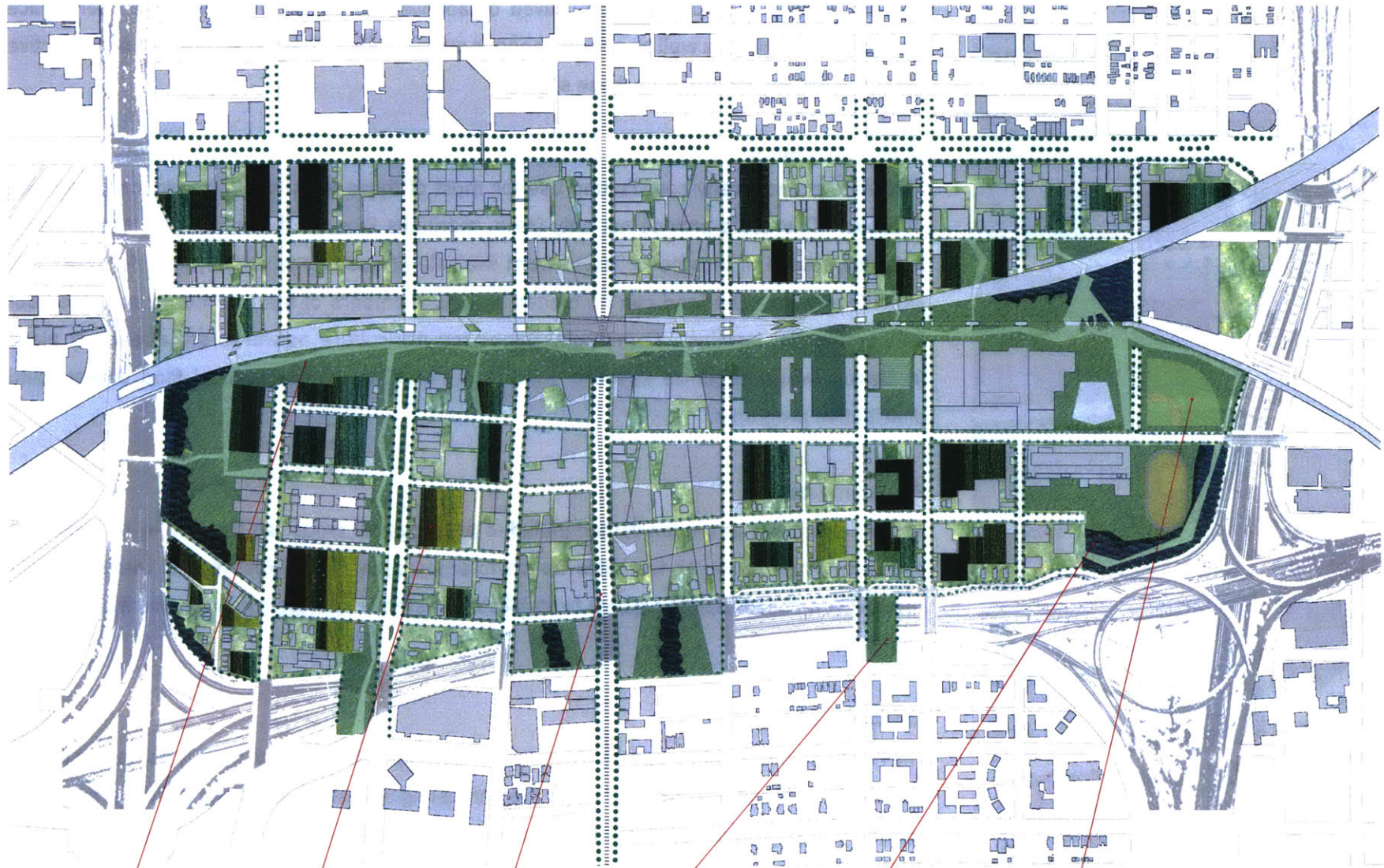
OPEN SPACE LAND USE

**urban agriculture
pedestrian greenways**





5.1 EXISTING OPEN SPACE LAND USE DIAGRAM



pedestrian greenway

urban, community based agriculture adjacent to residential development

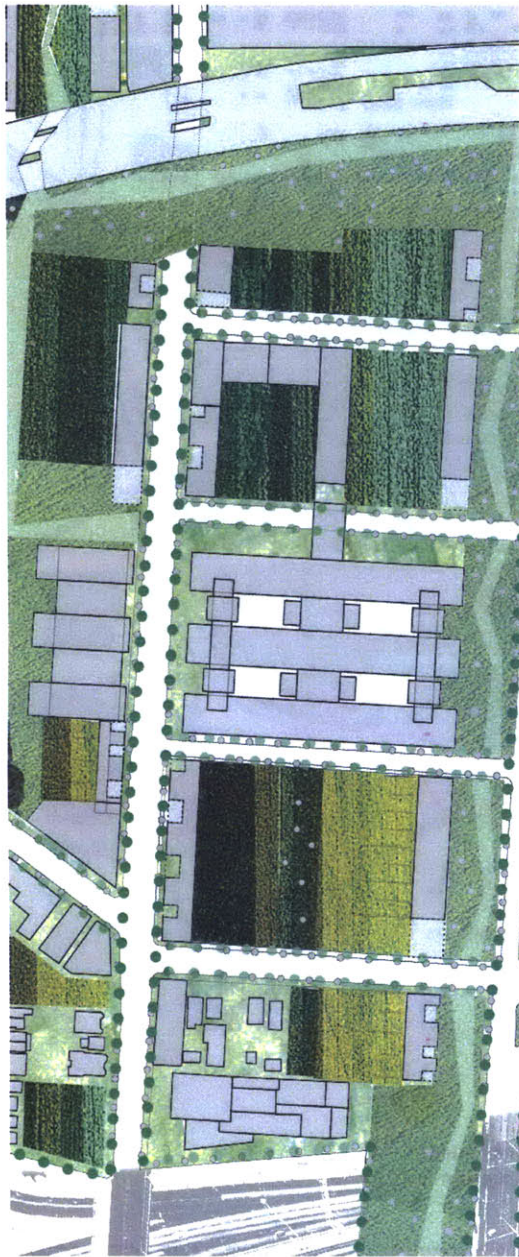
street trees planted throughout site with increased density along woodward and west grand ave

pedestrian greenspace spanning depressed freeway

re-forestation for park space, fruit production or lumber

pedestrian oriented recreational green space

5.2 PROPOSED OPEN SPACE LAND USE DIAGRAM



The conversion of landscape from paved or abandoned lots to programmable open space promotes ecological as well as socio-economic sustainability. There are a number of productive uses that can be employed on these sites.

Urban Agriculture:

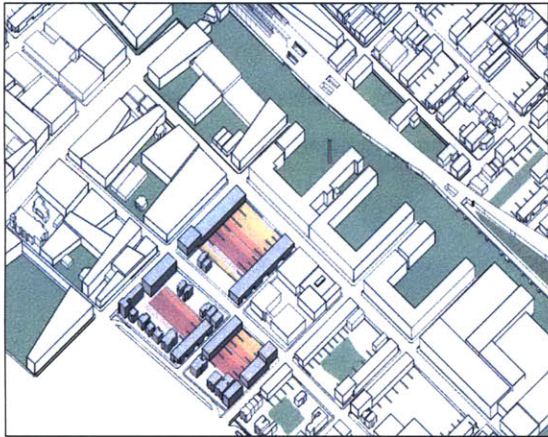
The most economically contributing use for most of these sites would be for the production of crops. This could provide not only fresh, nutritious food for the community, but is also a potential source of income—collected from the sale of goods—and employment for local, low skilled workers. The land can be tended by paid members of the community or leased out for commercial farming. Community Supported Agriculture networks are already in place in Detroit, which organize farmers' markets as well as affordable local food delivery and distribution programs.

Phytoremediation:

Brownfield sites that are too contaminated to produce safe crops can be used by the research and technology center as test sites for phytoremediation. This experimental method of site remediation utilizes specific plants to stabilize, transfer, or remove contaminants from the soil and groundwater.

Reforestation:

The reintroduction of large canopy trees can improve both the image of the city as well as the air quality. Groves can also be planted for the harvesting of lumber and other building materials, providing income and employment for the area. As with the urban agriculture, additional jobs are created in order to process and package the products for consumption.

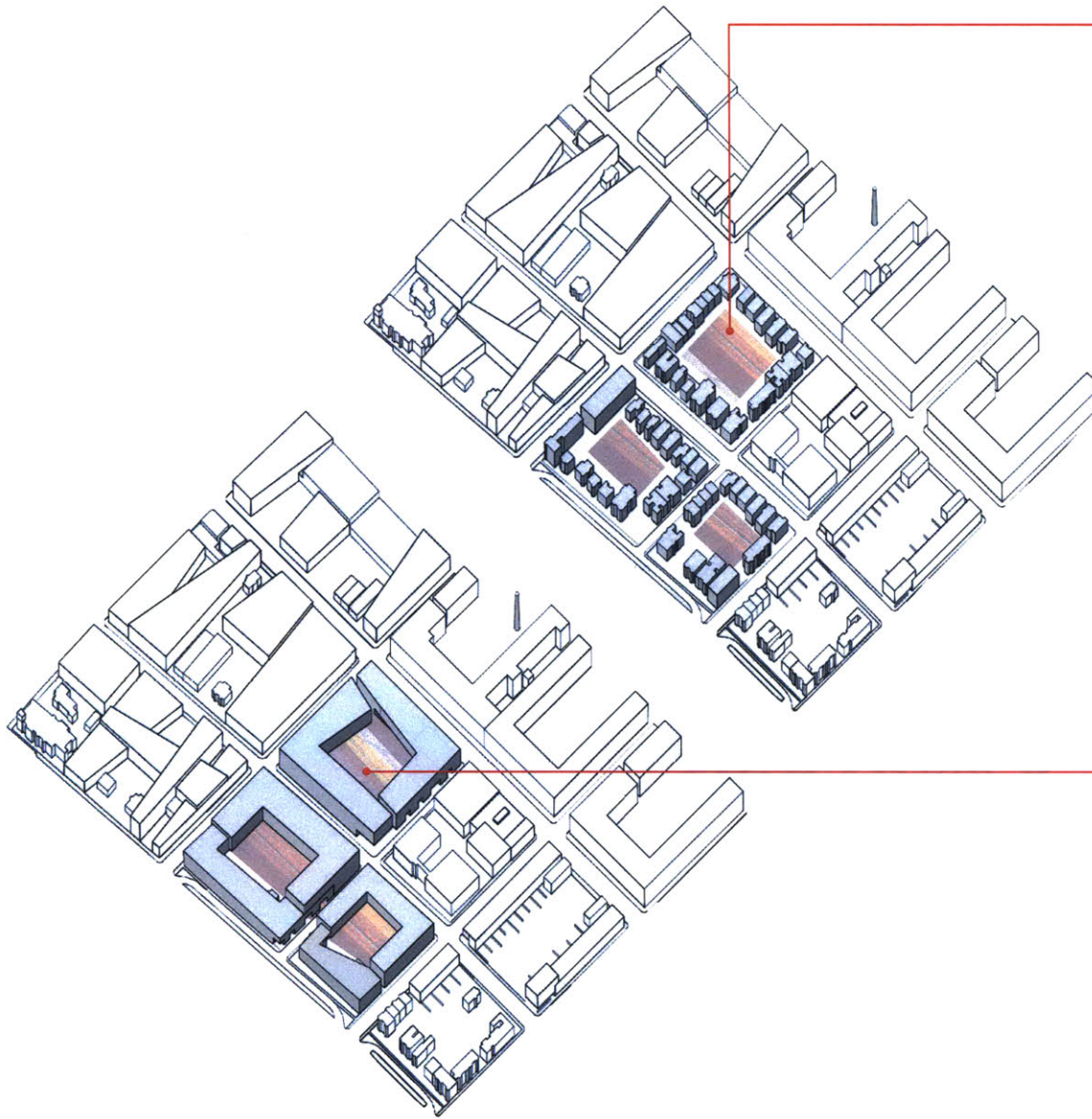


BLOCK VARIATIONS

reinforce streetfront
accessibility to open space



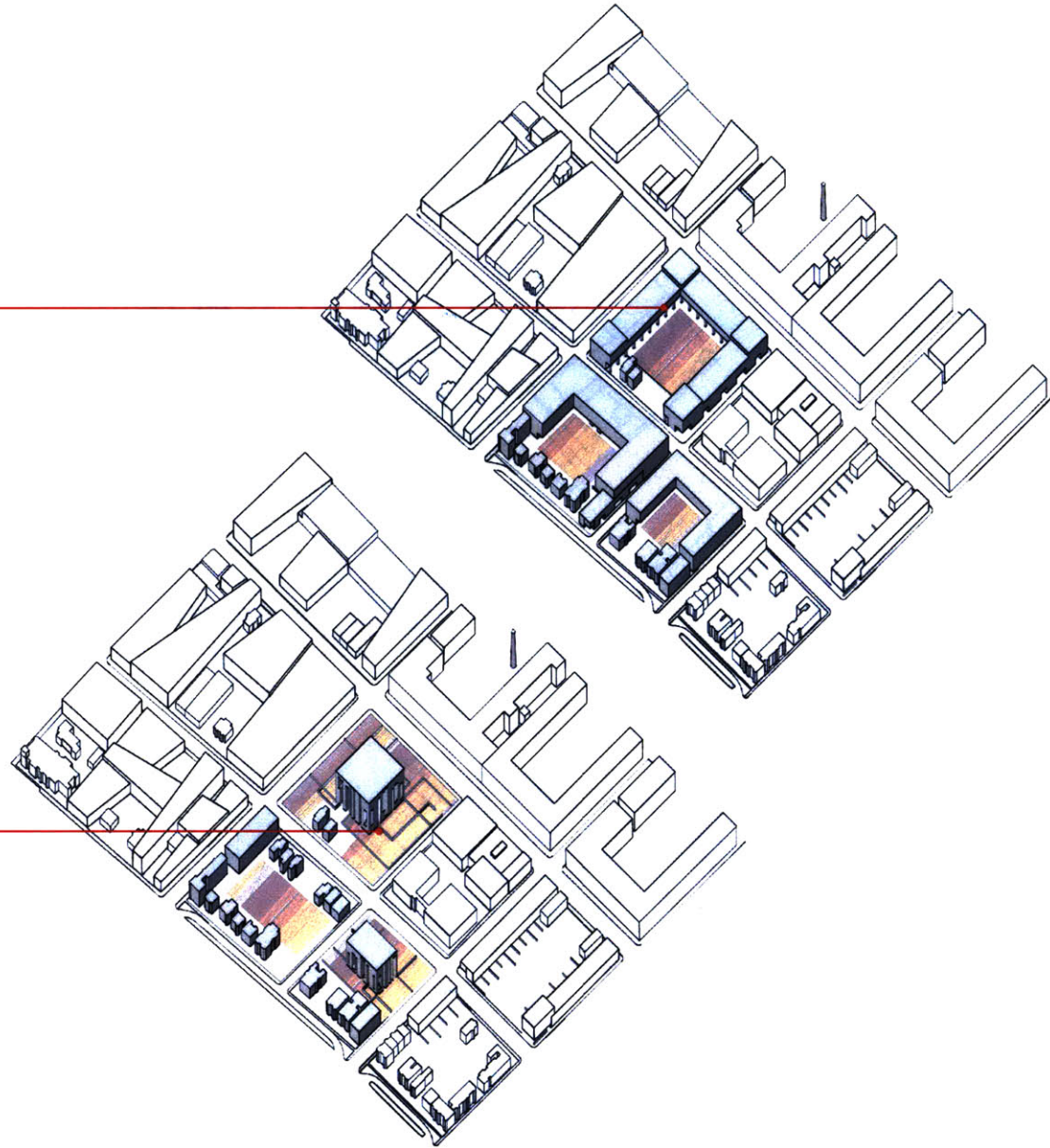
Infilling any remaining block perimeter on the north-south streets with multi-unit buildings while allowing the east-west street frontage to gradually fill in as the market for detached housing returns. this defines the agricultural open space as an initial step but allows for the building to happen in phases. it also promotes mixed income housing due to the different typologies possible on one block, and it does not require the removal of any existing structures



Using the existing neighborhood housing typology of predominately single-family detached three story houses to infill the block perimeter. this provides a uniformly built street front on all sides, while maintaining a porous edge to access the agricultural space in the center.

Defining the block perimeter with a dominant single building mass using a large-scale courtyard typology. this provides a uniform streetfront while providing security for the more private open space in the center. strategic breaks in the perimeter must be made in order to facilitate the agricultural use of the open space. any existing buildings on this block must be removed.

Infilling any remaining vacant or mostly vacant perimeter edges with multi-unit buildings without privileging the north-south streetfronts. this requires a larger initial investment and the removal of some existing structures, while still maintaining a semi-private central open space and promoting mixed housing.



Abandoning the block perimeter in favor of a centralized residential tower. this greatly weakens the street edge and forces the agricultural space to be divided, thus reducing its productive capacity



PHASING STRATEGY

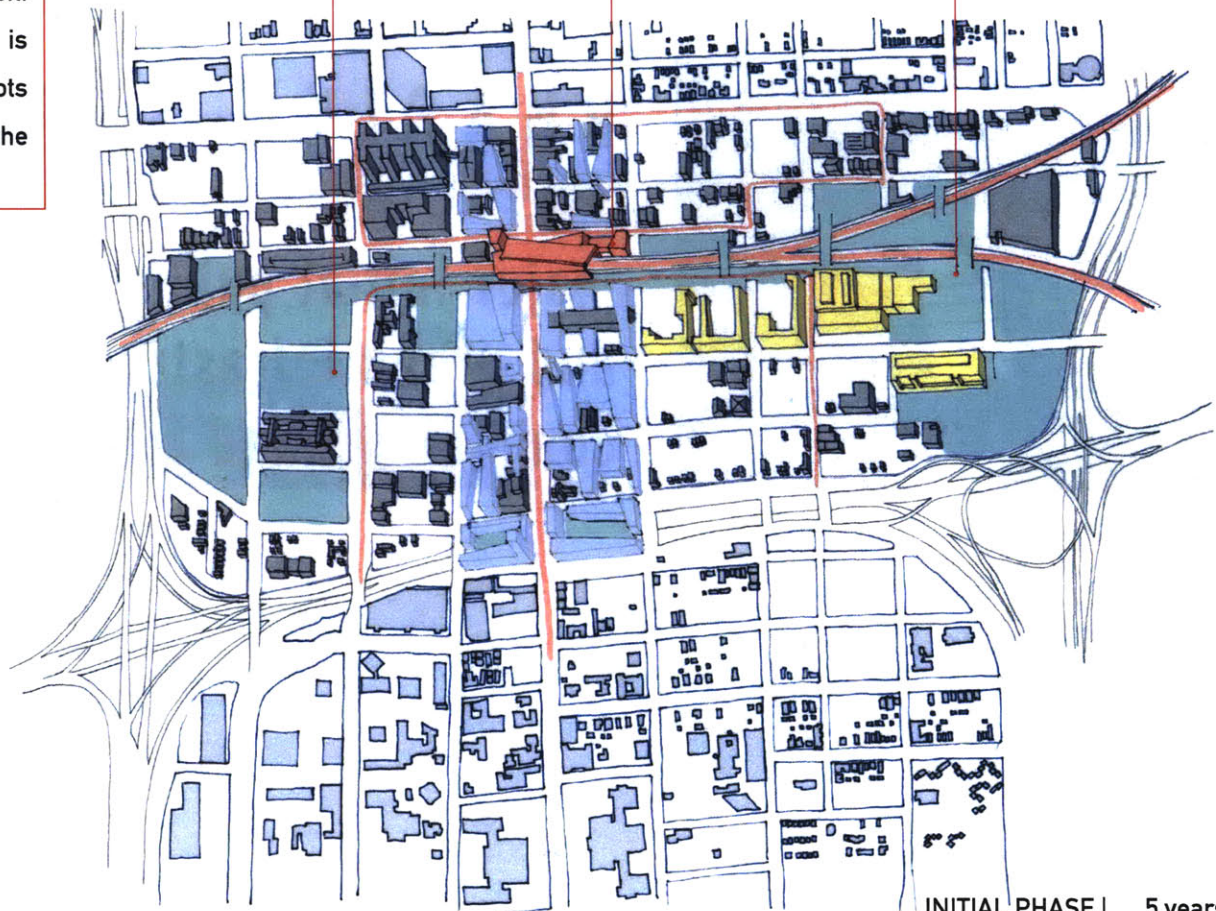
major initial public investment on transit and green infrastructure to attract commercial and residential development

Before any private development can be enticed back into the neighborhood, a major public investment in infrastructure must be made. The first step is the re-introduction of light rail on Woodward Avenue, as well as the improvement of the freight/Amtrak rail corridor to also carry urban mass transit. Included in this initial public investment is the demolition of the large paved surface lots in preparation for their conversion into the various types of green spaces.

removal of large surface parking lots in preparation for green and agricultural re-use

major public investment in transit infrastructure

major public investment in pedestrian greenway

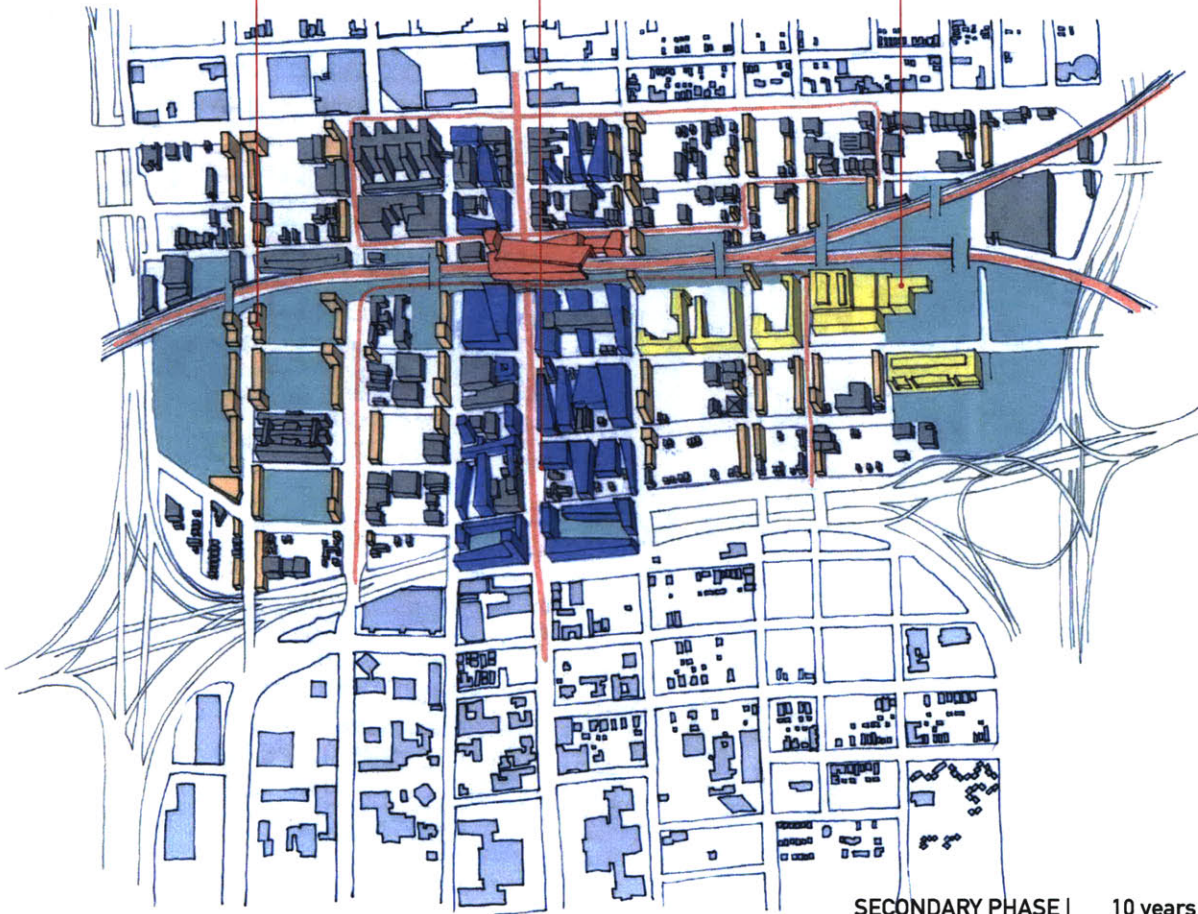


INITIAL PHASE | 5 years

residential and other small scale development off of woodward with adjacent green spaces

private institutional investment of research and technology park along woodward ave

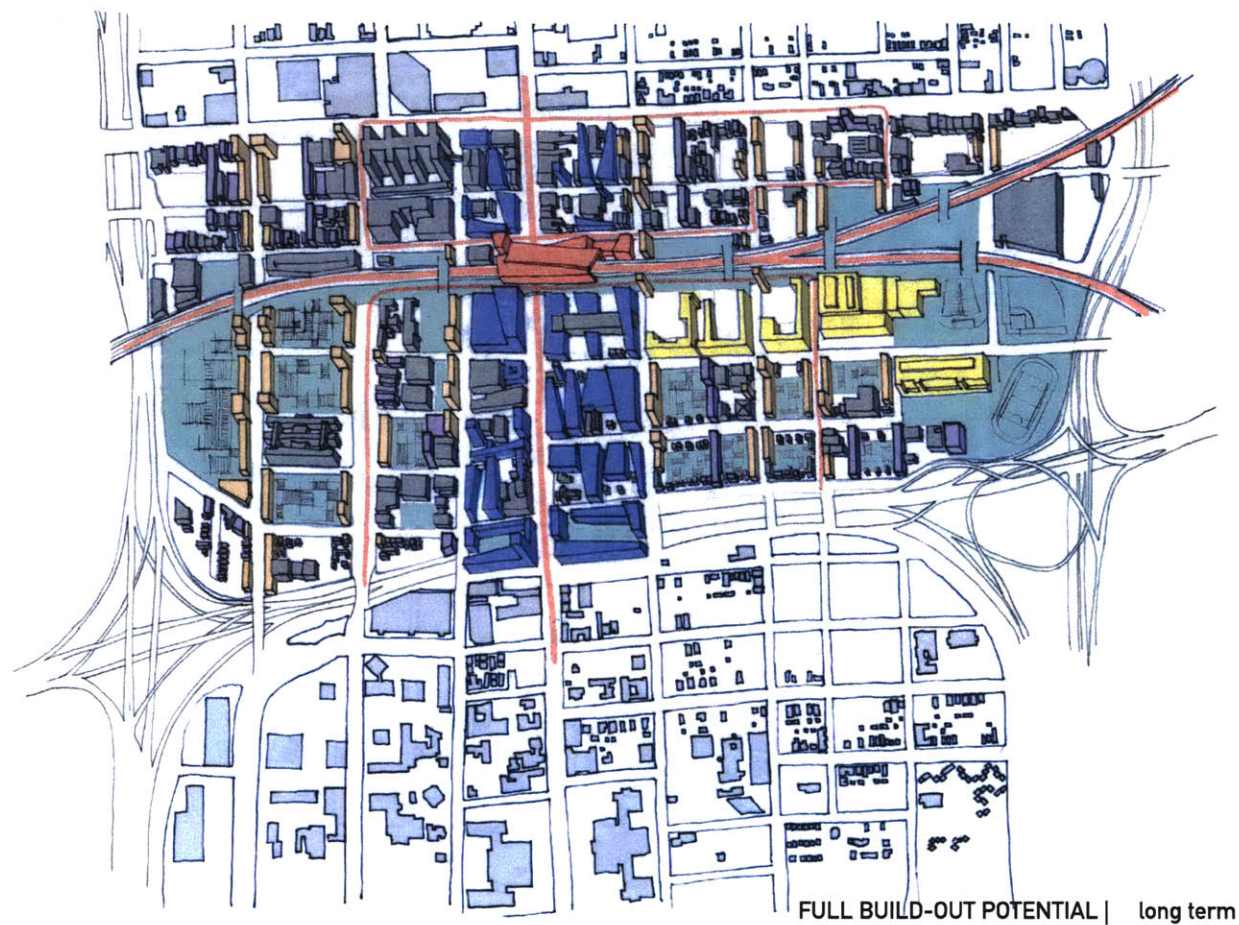
conversion of abandoned factories into music and arts incubator spaces



The first area to receive increased development will be the blocks on either side of Woodward Avenue, primarily consisting of the Wayne State tech campus. The object is to re-densify the Woodward street frontage with retail uses on the ground floor, and lab, office, or residential spaces above. A combination of public and private investment will be required to re-occupy the large factory buildings as well as provide funding for their operations as visual and performing arts centers.

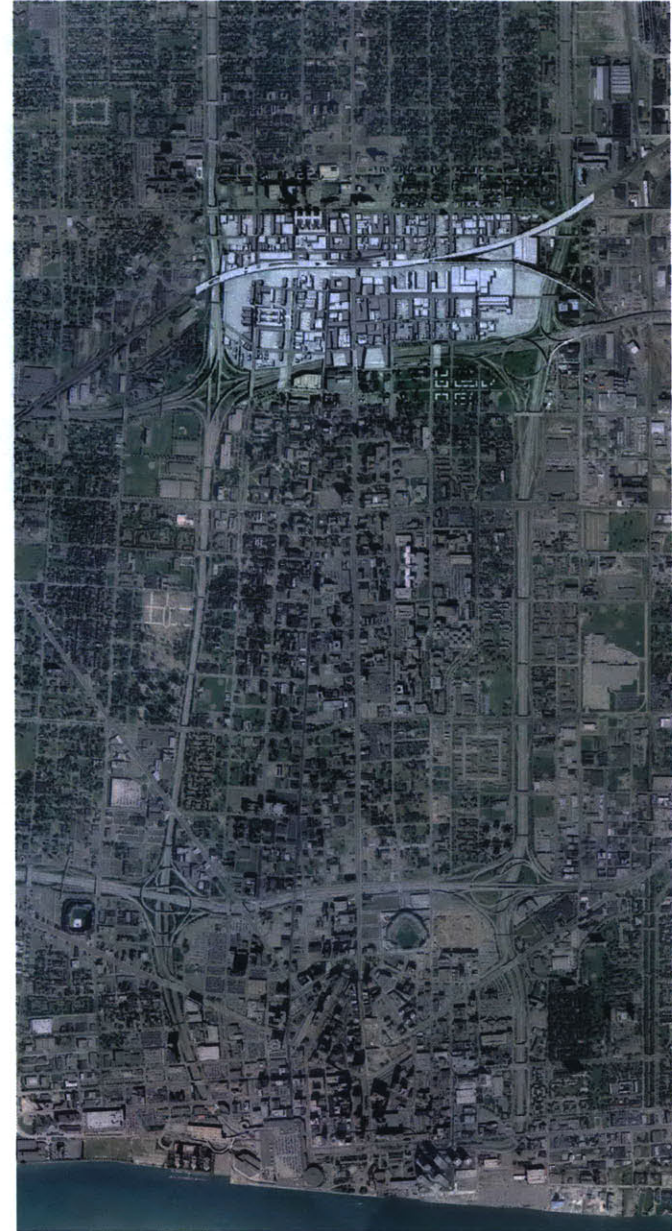
SECONDARY PHASE | 10 years

Small and medium scale residential—along with its adjacent agricultural space—will be developed on the perimeters of the remaining blocks, as the market dictates.

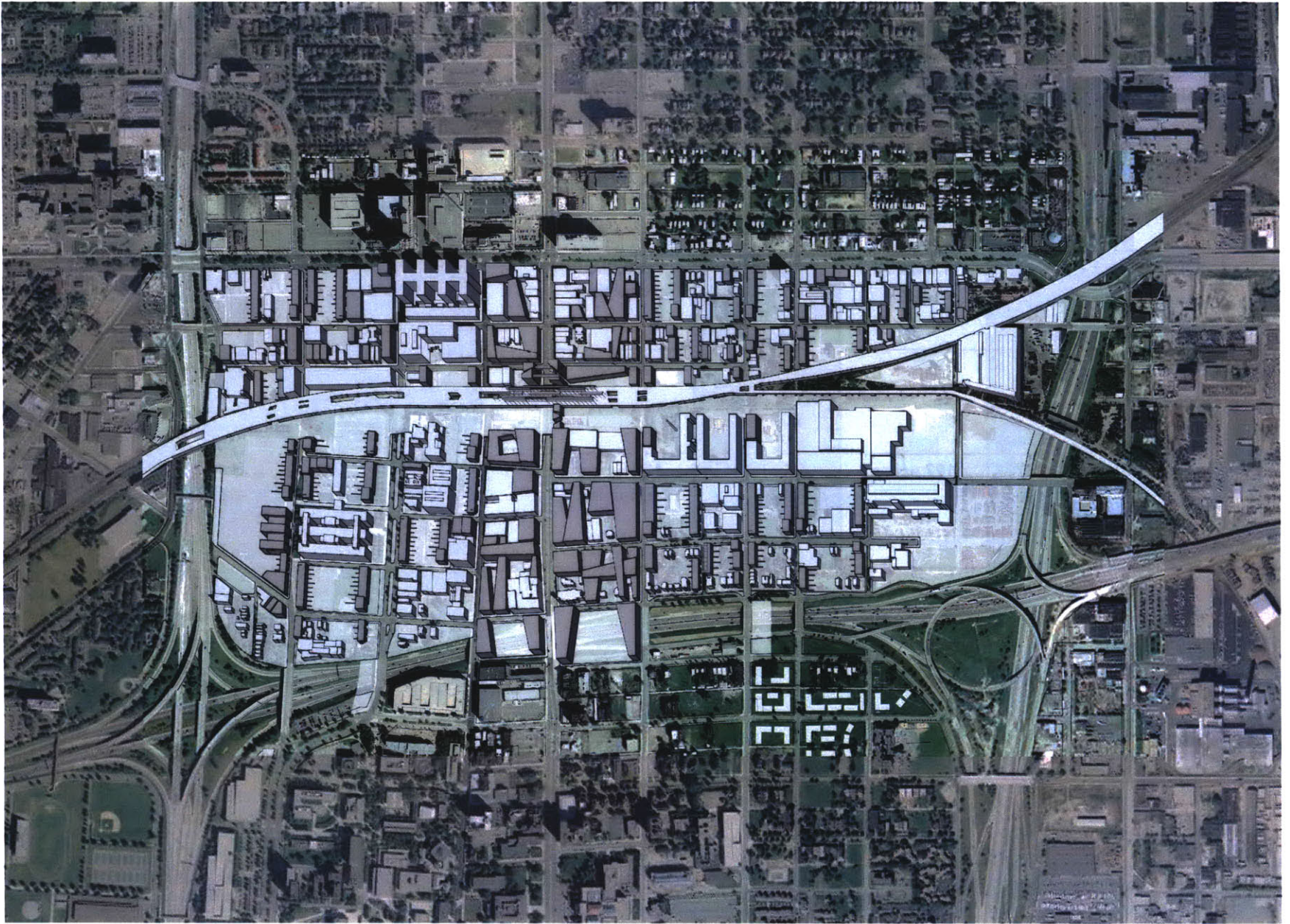


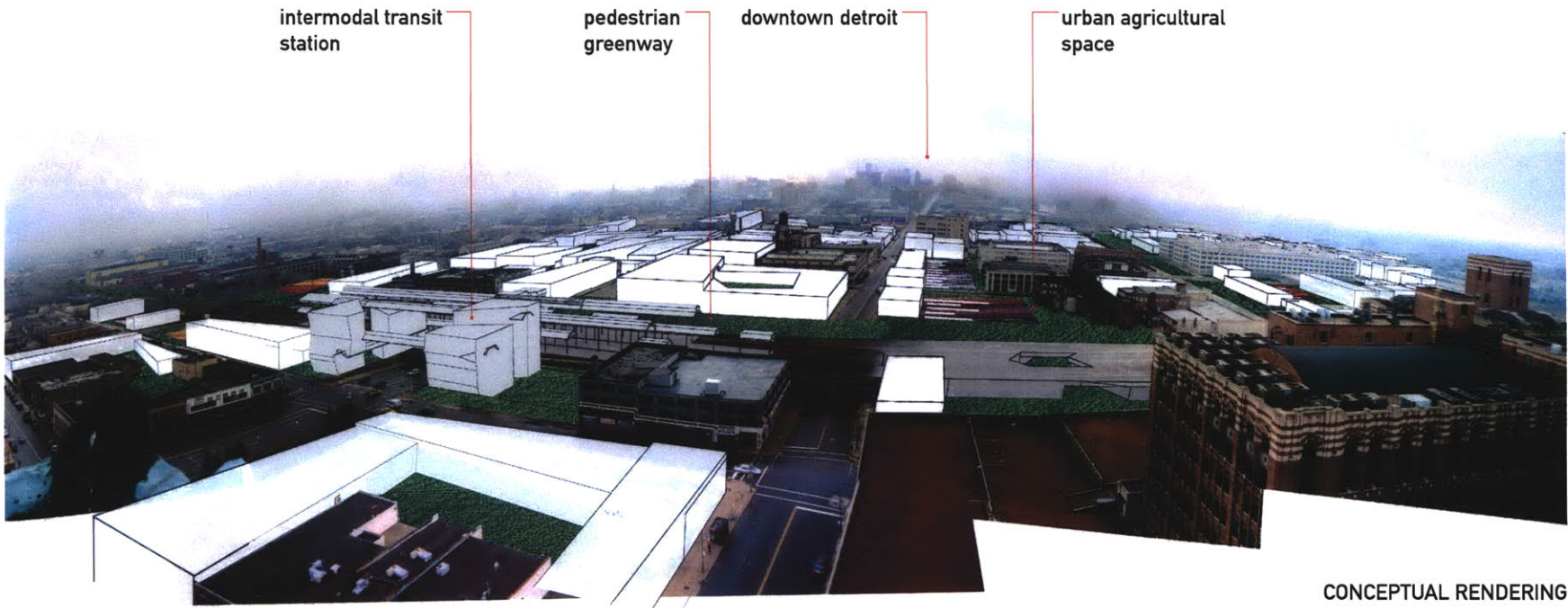
AREA CALCULATIONS				
	existing		proposed	total
residential	293,000sf	732 people	1,302,000	1,595,000 3987 people
commercial / office spa	5,198,000	175,000 vacant	5,000,000	10,198,000
industrial	1,850,000	1,642,000 vacant	no new industrial	225,000 remaining
public facility			1,642,000	1,642,000
open space	8,570,000	197 acres	6,550,000	150 acres remaining

total site area: 265 acres

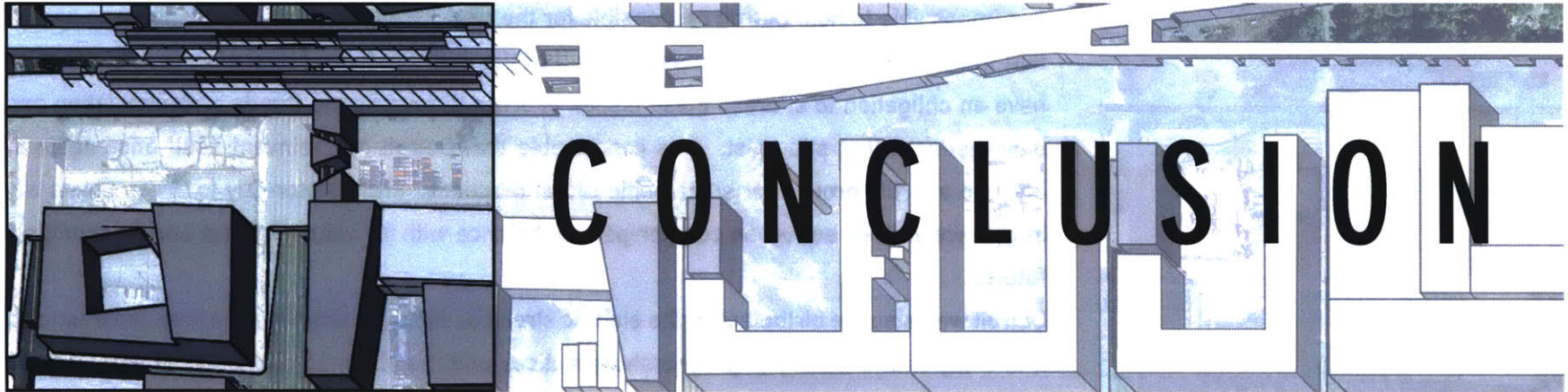


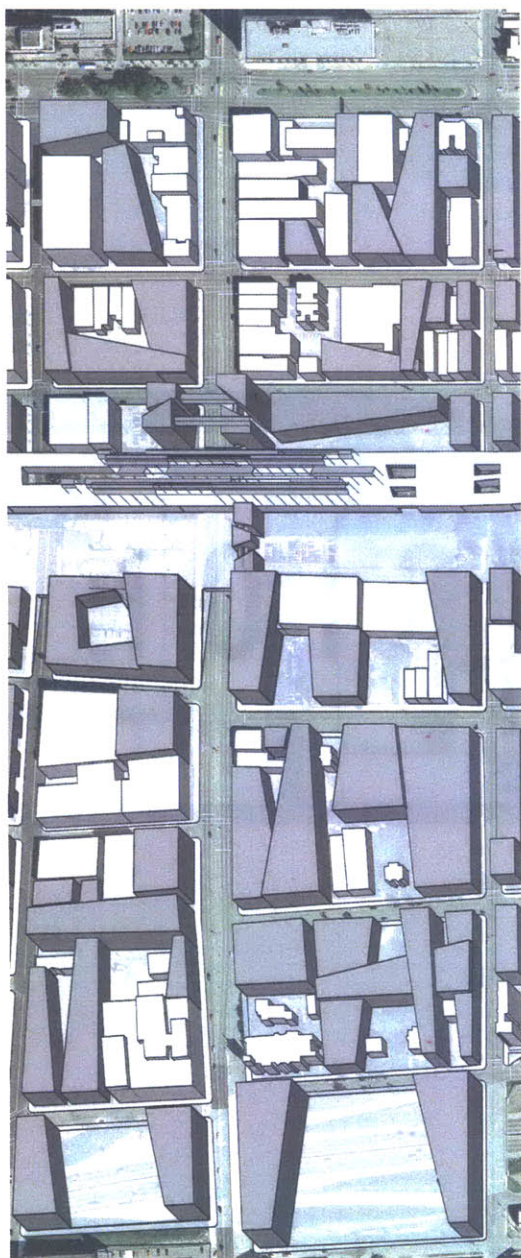
DESIGN PROPOSAL IN CONTEXT





CONCEPTUAL RENDERING





CONCLUSION

Detroit was the birthplace of the automobile, the assembly line, and the highway. These three elements were fundamental to the formation of a modern urban society free from the trappings of the centralized medieval city. The industrial processes and products perfected in Detroit, and exported to every other industrial town in the country, transformed the city into an urban factory—whose product was the middle-class American behind the wheel of a car, traveling on the highway to his home in the suburbs.

It is impossible to hold Detroit responsible for the post-industrial decline and suburban sprawl that the country suffered in the second half of the 20th Century. Nevertheless, the city does have an obligation to address these issues in order to reverse the trends of depopulation and disinvestment that still exist. It is conceivable that Detroit can reinvent itself once again to become a fertile ground for sustainable urban practices. From Motor-City to Green City; a city in balance with its suburban counter-part, in balance with its industrial past and its economic future.

Detroit was also the birthplace of the electric streetcar, Motown, and the American labor unions. It is a city with a history of progressive practices and the ability to make sweeping and rapid infrastructural changes which set major precedents used throughout the country. Detroit is poised to set the next example of urban transformation.

By reconceptualizing the value and potential of its vacant land and transit infrastructure, and identifying the nodes of urban activity, the post-industrial city can sustain existing development while applying new strategies to attract reinvestment.

APPENDICES

Appendix 1

The Derailment of Detroit:

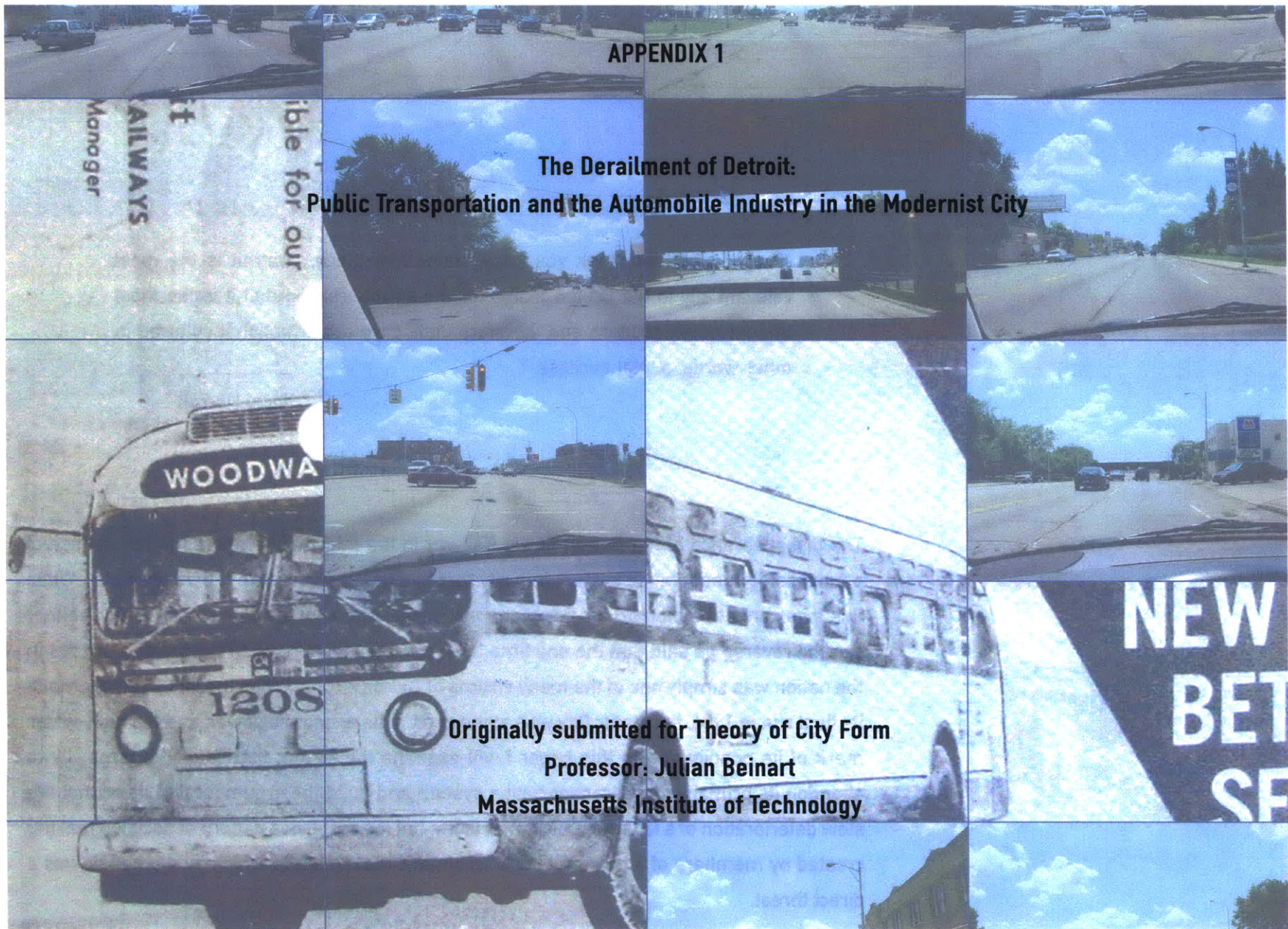
Public Transportation and the Automobile Industry in the
Modernist City

Appendix 2

New, Non-Traditional Land Uses for the City of Detroit

Appendix 3

Current Census Statistics for the City of Detroit



APPENDIX 1

**The Derailment of Detroit:
Public Transportation and the Automobile Industry in the Modernist City**

**Originally submitted for Theory of City Form
Professor: Julian Beinart
Massachusetts Institute of Technology**

"Forget what you think you know about this place. Detroit is the most relevant city in the United States for the simple reason that it is the most unequivocally modern and therefore distinctive of our national culture: in other words, a total success."¹

Jerry Herron

The disappearance of the Detroit Street Railway in the mid 1950's ushered in the demise of a functioning mass transit system in a city that had found such a thing to be obsolete. While this loss cannot be blamed for the economic, social, and spatial collapse of the city, neither can the reverse be said that the one time largest urban network of streetcars and busses in the nation was simply one of the many victims of Detroit's ruin. When the last streetcar made its final run in 1956, the Motor City was at the peak of its economic power, and the high-water mark of its population. In this paper I will examine the factors that caused a large city to abandon its primary mass transportation system and build the argument that it was not the slow deterioration of a failing municipal amenity, but the result of a pattern of decision making created by members of a powerful socio-economic movement to which public transit was a direct threat.

A pair of contradictions arises when discussing the story of mass transit in Detroit, but it is in confronting these that the nature of the city becomes clear. The first is attempting to examine the history of a place for which the erasure of the past was a fundamental instrument of progress. The second is the analysis of public transportation in the city that sought to make such a thing obsolete. At the root of these two paradoxes lies the key to understanding what made Detroit the most important industrial city in the world, before turning it into the most infamous example of urban decay. Detroit has become the most feared city in America by exposing the susceptibility of all successful capitalist cities to share its fate.

Detroit's rise to industrial power was facilitated by its relationship to the machine with which the city would become synonymous. The Motor-City industrialists identified the automobile as being the definitive modern apparatus, a valuable commodity that provided individual freedom through mechanization. While creating the methods to mass-produce it, they also built the infrastructure on which to use it, and instilled in the nation a desire to consume it. Detroit set the precedent for reshaping the city and the landscape, restructuring the government and the economy, and redefining culture and class lines around the success of a single product. It also recognized and eliminated anything that impeded on the dominance of the automobile—such as a centralized urban population, threats to capitalism, and public transportation. The ultimate result of this success vastly contributed to the establishment of a nation of middle class suburbs dependent on the highways which guided, and the oil that propelled their private carriages into the future. A future that was defined by simply being beyond the past.

This rejection of history was inherent to the type modernism that Detroit assembled. The city, according to Dan Hoffman in his essay, The Best The World Has to Offer, “define[d] itself through its pursuit of material perfections, and by forgetting the past in order to make way for technologies that promise greater accuracy and production efficiencies. Perfection is not a spiritual thing... It comes rolling off the line every other second in the form of a new car.”² This perfection could only be approached through rapid mass production coupled with constant reinvention and redesign.



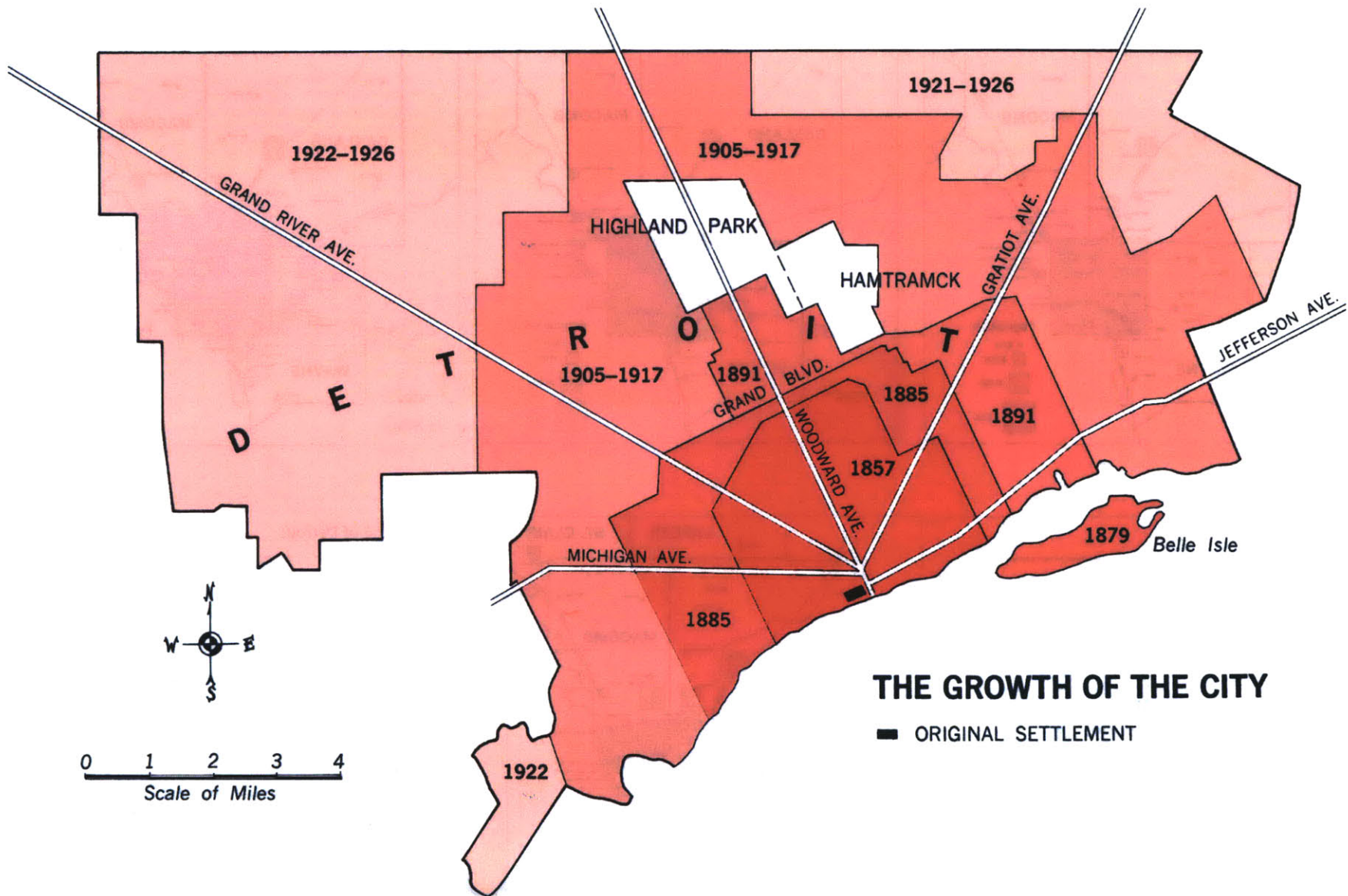
*Detail from 'Detroit Industry' by Diego Rivera, 1932
depicting workers on Ford's assembly line*



*Ford's Highland Park Model-T Plant
designed by Albert Kahn in 1909*

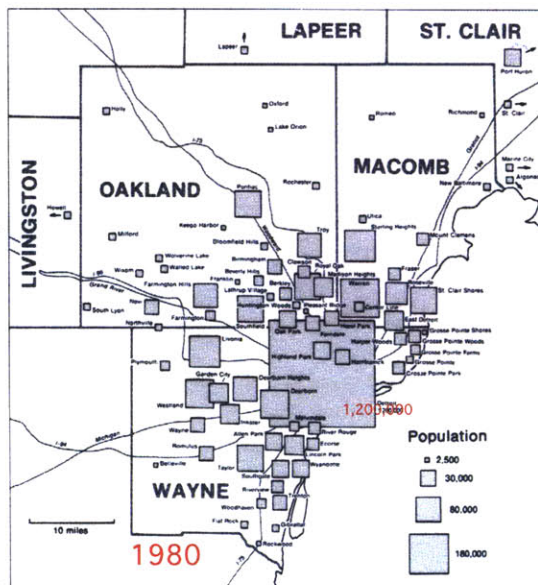
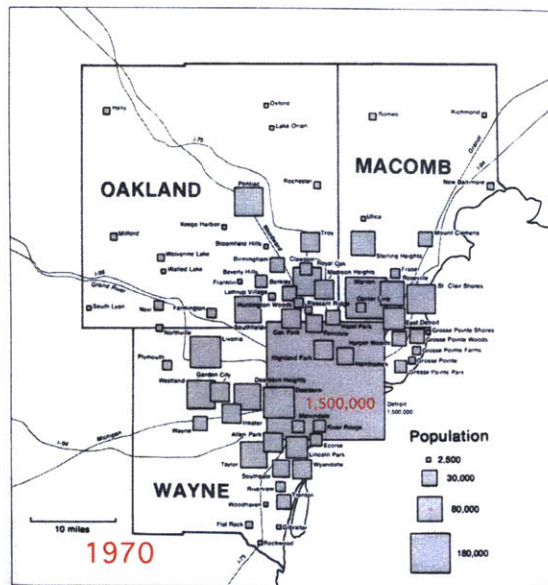
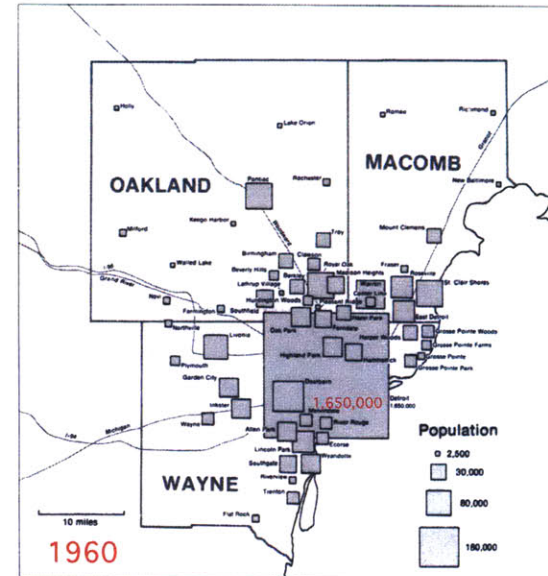
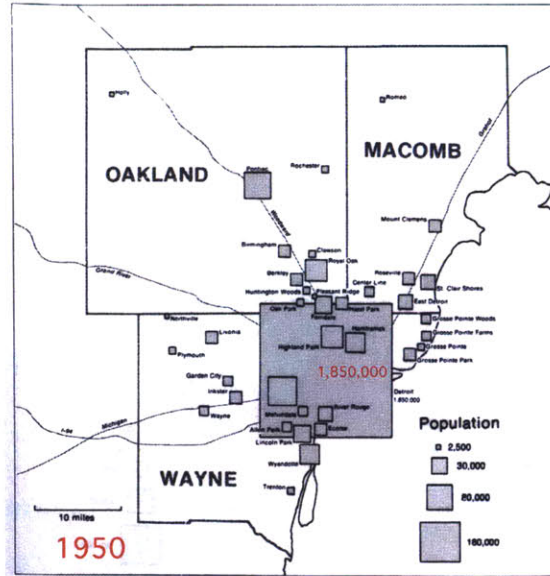
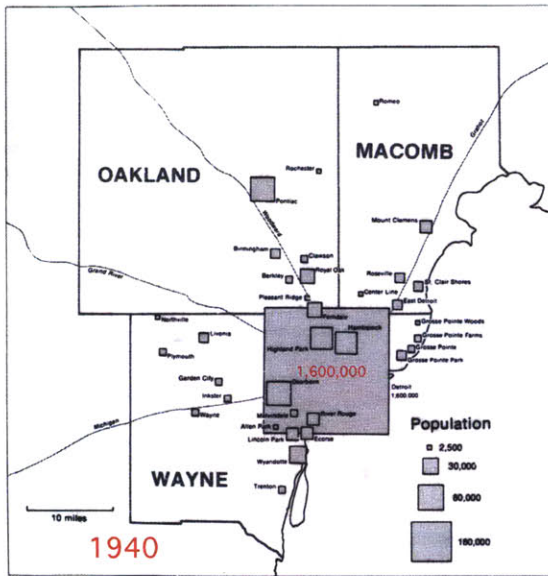
Last year's model was always inherently flawed, and next year's model was perpetually in production.

The most profound developments in the methods of mass production were formulated in the factories of Henry Ford. An article written in 1923 described him as being "not a human creature. He is a principle, or better, a relentless process."³ This principle that Ford represented, along with the generalization of the policies of the Ford Motor Corporation, became the model for developing industrial cities around the world. When Ford was quoted as saying: "History is Bunk", he was revealing the basis of Fordism, and making way for the methodology of a production process that was the foundation of Detroit's industrial power. At the core of Fordism was the refinement of this particular production method that would become one of the most important contributions to the modernist period: the moving assembly line. Henry Ford's abilities were not in inventing or engineering; his unique skill was in assembling. Just as his Model-T was an assemblage of pre-engineered parts⁴, the implementation of the moving assembly line was a combination of an existing production method with Fredrick Winslow Taylor's principles of scientific management and efficiency.⁵ In Ford's factory, automobile production evolved from being an artisan's craft to being a scientific process. The labor became "scientific: observable, controllable, and modifiable. Individual laborer's tasks were recorded, analyzed, and broken down into elementary movements. Efficiency was optimized by the reconfiguration of tasks within time and space according to the dialectic of differentiation and repetition. Within this concept of order the flow of production over time was the controlling parameter."⁶ The nascent automobiles on the assembly line were in a continual state of preparation for their next stage of completion. The worker did not conceive of a previous station from which the car was coming from, he only knew of the subsequent station and the fixed amount of time he had to prepare the car for it. The worker was placed on the edge of this assembly line, amidst this ahistorical current of material, to perform his singular contribution as a stationary marker of progress. The final station was the placement of the consumer inside the machine, perpetually expanding



Map showing pattern of land annexation of the city of Detroit.

Source: Robert Conot, *American Odyssey*



Population of Detroit:

1900 - 285,704	38.8% increase from previous decade
1910 - 465,766	63% increase
1920 - 993,678	113.3% increase
1930 - 1,568,662	57.9% increase
1940 - 1,623,452	3.5% increase
1950 - 1,849,568	14% increase
1960 - 1,670,144	10% decrease from previous decade
1970 - 1,514,063	9% decrease
1980 - 1,203,368	21% decrease
1990 - 1,027,974	15% decrease
2000 - 951,270	8% decrease

Maps comparing size of Detroit's population with those of surrounding suburban municipalities.

Source: *Detroit, Race and Uneven development.*

the assembly line beyond the factory and beyond the city.

Detroit repeatedly transformed itself according to the decentralized spatial logic of Fordist urbanism. Architects such as Albert Kahn translated the basic principles of production efficiency into built form. Multiple single story buildings, each facilitating a specific process, were joined together and extruded to the required length. The factories decentralized their production floors in order to accommodate the horizontal space required for the assembly line process. The inner city mid-rise factory buildings were abandoned for more efficient sprawling multi building assembly lines, located in the open space beyond the city center. Once built, these new factories became the seeds of suburban towns that supported the multitudes of plant workers. The disinvestment of the automobile factories from downtown was the first step towards the large scale decentralization that would transform Detroit into an urban assembly line, its contents spread horizontally into the vast suburban space; its center, like its past, was bunk.

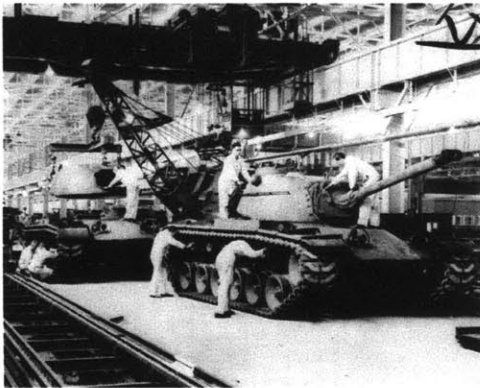
As early as the 1920's the multi-storied urban factories near downtown Detroit were being left behind in order to achieve the land expansion needed for the Fordist production methods. As more automobiles were consumed in the city, it became increasingly more difficult to manufacture them there. Factory owners were put off by the high tax rates, inadequate space for growth and employee parking, and the difficulty of servicing plants in the inner city. This congestion worsened as the trucks themselves undertook deliveries to and from the plants, overloading the confined urban streets. Beyond the spatial considerations, there were various social and labor motivated issues that pushed the factories out. Henry Ford, for example, was notorious for his animosity towards organized labor. He quickly realized that the longer he maintained a factory in one area, the stronger the workers' organization became. His selection of new plant locations was heavily influenced by his ability to exploit certain non-unionized labor pools outside of the city. Additionally, General Motors had a long-standing policy of decentralized manufacturing based on what they claimed were social grounds. In his book, Motor City: The Impact of the Automobile Industry



Aerial photograph of Ford's River Rouge plant



B-24 bomber production at Ford's Willow run plant



Patton tank production at Chrysler's tank arsenal

Upon Detroit, 1900-1975, Thomas Ticknor states that: "G.M. believed that decentralization made it easier to meet the increased demands for housing and social services created by plant expansion, softened the burden of frequent lay-offs in the industry by distributing it among various communities, and took advantage of lower costs of living and more desirable living conditions than if production were concentrated in Detroit."⁷

World War II introduced broader national pressure for a rapid decentralization of Detroit. Even before America's involvement in the war, the major car companies began re-tooling their plants for the manufacture of military vehicles for European armies on both sides of the conflict. As America joined in the fighting, Detroit was counted on to supply over eighty percent of the cars, trucks, tanks, fighter planes, and bombers to the U.S. armed forces. It was during those years that the city was known as the 'Arsenal of Democracy', prompting General Eisenhower to proclaim: "Detroit... came to mean, in war, practically everything we needed to defeat the enemy... Detroit is a symbol of the strength our enemies came to fear."⁸ But the citizens of this 'Arsehole of Democracy', as it came to be called, understood the predicament of this city's importance in the war effort. Coupled with the extremely long and stressful work hours was the looming fear that 'Hitler will come here first'. The Federal government was quick to acknowledge the vulnerability of having the majority of the country's military manufacturing in one place. This anxiety was greatly multiplied by the end of the war as the realization of a nuclear threat gripped the nation. Military contractors became subject to a strict post-war Defense Department policy that demanded the dispersal of all new plants away from Detroit to limit the consequence of atomic attack.

Although there were numerous short-term benefits and outside circumstances that motivated the disinvestment of the auto companies from Detroit, the severe decentralization that occurred was not simply the result of discreet acts of this industrial and social relocation. The unique structure of Detroit's economy was such that it was completely dependent on one single product, the automobile. This meant that whatever legal, political, or urban planning

decisions that were in the best long term interests of the automobile industry were what prevailed. The ultimate interests of the car companies centered around selling cars, which was initially achieved by creating, maintaining, and facilitating a demand for them. Urban economist and theorist of urban decay, Jane Jacobs examines Detroit in relation to the automobile. In The Death and Life of Great American Cities, she writes about the phenomena of 'negative feedback' from the unhealthy demand of automobiles in Detroit. It is when "an action produces a reaction which in turn intensifies the condition responsible for the action. This intensifies the need for repeating the first action, which in turn intensifies the reaction..."⁹ In her view, the unnecessary amount of inefficiently used private passenger vehicles necessitates more roadbed and parking space to be taken from the city. In order to accommodate the amount of land required, the city must spread out its other economic uses horizontally. Pedestrian access to a multiplicity of these uses is no longer convenient, as a result of the greater distances between them. In other major cities, this gap has been filled with public transportation. Detroit, as I will discuss later in this paper, was unable to maintain that service. Thus the need arises for even more automobiles for these individual users, coupled with the need for more space to accommodate these new cars. Put simply: the more new space that is provided for cars, the greater the demand for new cars to traverse this ever-expanding space. In tracing the source of this unhealthy relationship between cars and city space, Jacobs believes that "the interval of the automobile's development as everyday transportation has corresponded precisely with the interval during which the ideal of the suburbanized anti-city was developed architecturally, sociologically, legislatively, and financially."¹⁰ Mistakenly, she draws only a parallel between the development of the automobile and that of the suburbs, while failing to make the connection that suburbia was a made possible by the legislature, economics, and infrastructure that was heavily influenced by the automobile industry. Jacobs points to well-meaning but misguided planners, highwaymen, and traffic engineers as being responsible for the erosion of urban fabric, rather than the corporate powers behind the actual decision making and design process. The complete dominance of one single industry in Detroit meant that there



Aerial photograph of Ford's River Rouge plant

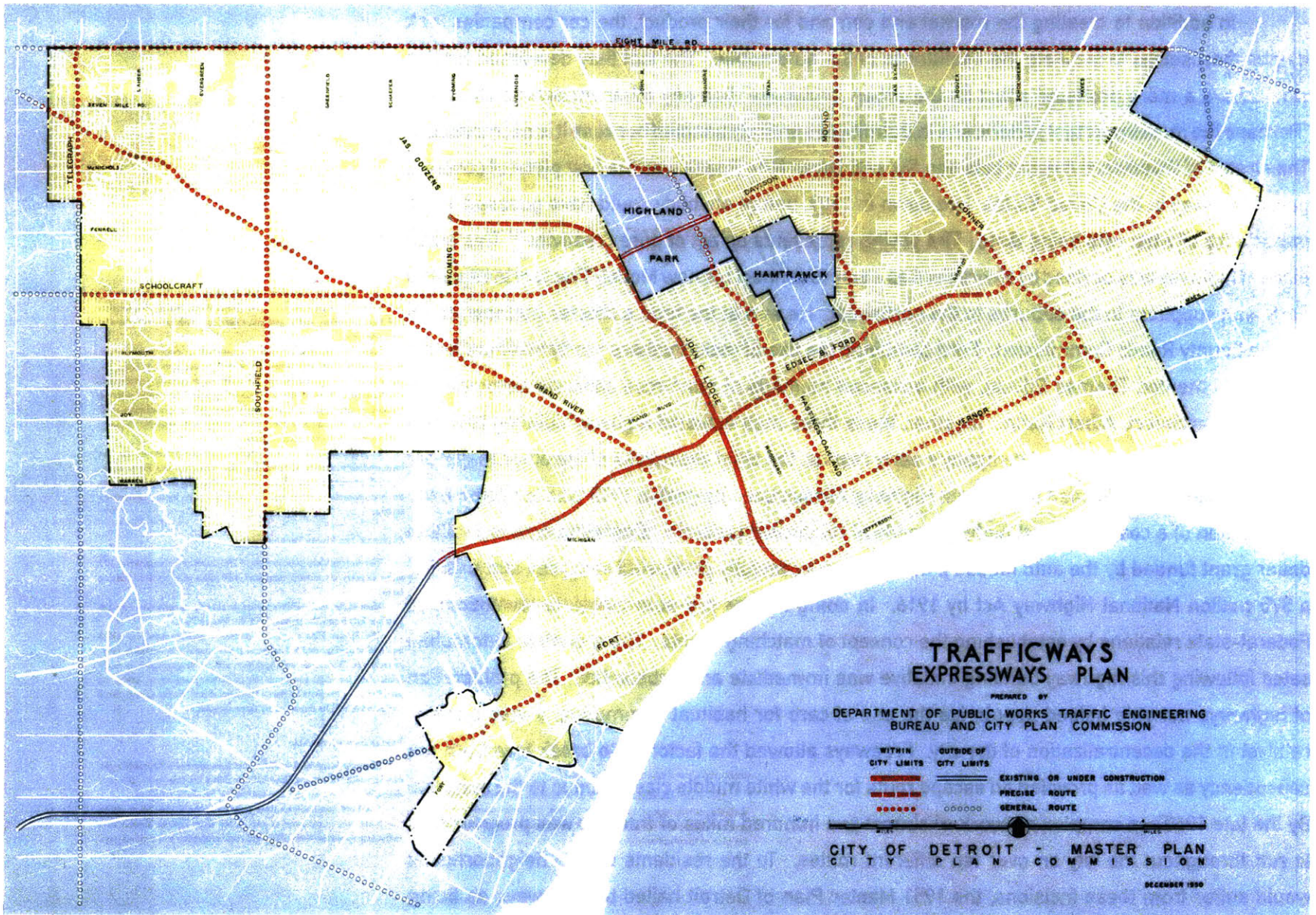


Aerial photograph of downtown Detroit and I-75 interchange

was very little opposition to the planning decisions that were executed in the best interests of these companies. The low-density sprawl that Detroit became was the ultimate achievement of industrial modernism in urban planning. The horizontal separation of city functions, the homogeneity of the suburbs, and the overreaching logic of transportation infrastructures onto the landscape of Detroit became the model for modern urban designers. Fordism crept into the design concepts of Le Corbusier's 'La Ville Radieuse', of Mies Van de Rohe's Detroit Lafayette Park, of Ludwig Hilbersheimer's plans for Chicago, and of Wright's 'Broad Acres City'. The decentralization of Detroit was as much a function of modernism as it was the result of carefully planned and executed policies of the automobile industry.

The combined economic, political, social, and intellectual power of the car companies produced a number of tools to manipulate both the market and the legislature in order to ensure their success. The primary tool was the creation of a 'car culture' that would lead consumers to convince themselves that they needed automobiles to complete their households. The economies of scale that Henry Ford achieved with the assembly line allowed him to continuously drop the price of his Model-T well into the range of the middle class worker or farmer. The motivation behind this tactic was his dream of supplying a car to every American family. The first to buy into this vision of cheap cars for the masses were Ford's own workers in Detroit, who were coerced into purchasing Model-T's under the threat of losing their jobs if they did not. The desirability of automobiles for both utility and pleasure was amplified greatly through developing trends in advertisement. An enormous proportion of the car companies' overhead went towards advertisements — at the height of the depression Chrysler alone spent fifteen million dollars a year as its advertising budget. Automobiles made further inroads into popular culture through Hollywood publicity and sport racing. As the industry gained economic dominance in the market and in turn employed nearly one in every seven Americans, the general attitude in government could be gauged by such truisms, as 'what is good for General Motors is good for the country'. Owning a domestic automobile became a patriotic act.

In addition to creating the market and demand for their product, the car companies took it upon themselves to facilitate the usefulness of the automobile. The tool they developed for this would have a more profound effect on the urban landscape than any other modernist structure. "Perhaps the most important historic site in Detroit goes entirely unnoted because it is not marked... The stretch of Woodward Avenue between Six and Seven Mile Roads was the first piece of concrete paved highway in the United States, laid down in 1909, before anybody could have guessed at the importance of what was being done. The paving represents an act of pure creativity."¹¹ This initial piece of highway was devised by Henry Ford as a way to connect his new Model-T factory in Highland Park with suppliers in the suburbs to the northwest. He was at the time a charter member of the Wayne County Roads Commission. Ford combined the use of rock crushers newly invented by his friend and mentor, Thomas Edison, with advanced methods of reinforced concrete developed by his factory architect, Albert Kahn. Together, these three men elevated highway building to a new industry. Inspired by Ford and company's early results, the chief executives of the other major car companies in Detroit formed the Lincoln Highway Association. Its goal in 1913 was to promote the construction of a coast-to-coast highway made of reinforced concrete. Operating on a ten million dollar grant funded by the auto industry, the L.H.A. successfully pressured congress into passing a \$75 million National Highway Act by 1916. In doing so, the pro-auto lobbyists revolutionized Federal-state relations by establishing the concept of matching grants. The growth in automobile sales following this highway building initiative was immediate and substantial. The proliferation of highways not only helped popularize the use of cars for habitual commuting, it was a major catalyst in the decentralization of the city. Freeways allowed the factories to break free from rail dependency as well as provided an escape route for the white middle class exodus to the suburbs. By the late 1940's, a complex network of almost two hundred miles of freeway was programmed to run throughout the city on over ten different routes. To the residents whose neighborhoods would suffer from these incisions, the 1951 Master Plan of Detroit hailed the freeways as being "landscaped strips approximately 300 feet wide... Fully recognized, this characteristic will be an



asset to the sections which the expressways pass through.”¹²

As the population, job market, and wealth disinvested from downtown and reinvested along the highway routes and junctions, the basic functions of the central city followed. These functions reinserted themselves in the rapidly growing suburban centers that had evolved out of the various factory towns. The manufacturing that had once been a dominant feature of downtown Detroit primarily relocated in the northern suburb, Warren, or in the southern suburbs Dearborn and River Rouge. The white-collar businesses and corporate headquarters favored the Northwest Passage along Woodward Avenue. Originating at the riverfront, Woodward bisects the downtown before continuing northwest to connect prominent towns such as Royal Oak, Birmingham, Cranbrook, Bloomfield Hills, and Pontiac, all of which would amass so much wealth from the urban migration out of Detroit to be distinguished as the richest suburbs in the world. Before long, the Woodward corridor would have more leasable office space than downtown and house most of the professionals in the region. Even renowned architects such as the Saarinen, Yamasaki, and Birkerts took part in this urban migration, finding a more lucrative practice in the suburbs than in the city.

Once the industrial and service sectors fled the city, the downtown relied more upon its retail shops and department stores to attract capital. But these too would feel the pull of decentralization, and be enticed to leave the city limits. In 1951, J.L. Hudson, Detroit's largest retailer and founder of the Hudson Motorcar Company, conceived and built what was to solidify the economy of the suburbs, and drain the downtown of what commercial viability it had left. The company constructed Northland, the first regional shopping center in America, just outside of 8-Mile Road, the northern boundary line of Detroit proper. Northland concentrated small retail stores around an anchor, which was the Hudson's Department Store. Unlike Hudson's downtown skyscraper, which was one of the largest department stores in the world, the new complex was oriented according to the Fordist logic of horizontality. Located at the intersection of the major routes connecting the southern and northwestern suburbs, Northland was accessible only by car

Figure-Ground studies of the Woodward corridor in Downtown Detroit illustrating the development and subsequent unbuilding of the city.



and provided unlimited parking. This 'hub' design would become the prototype for the suburban shopping mall, and had an immediate effect on downtown sales.

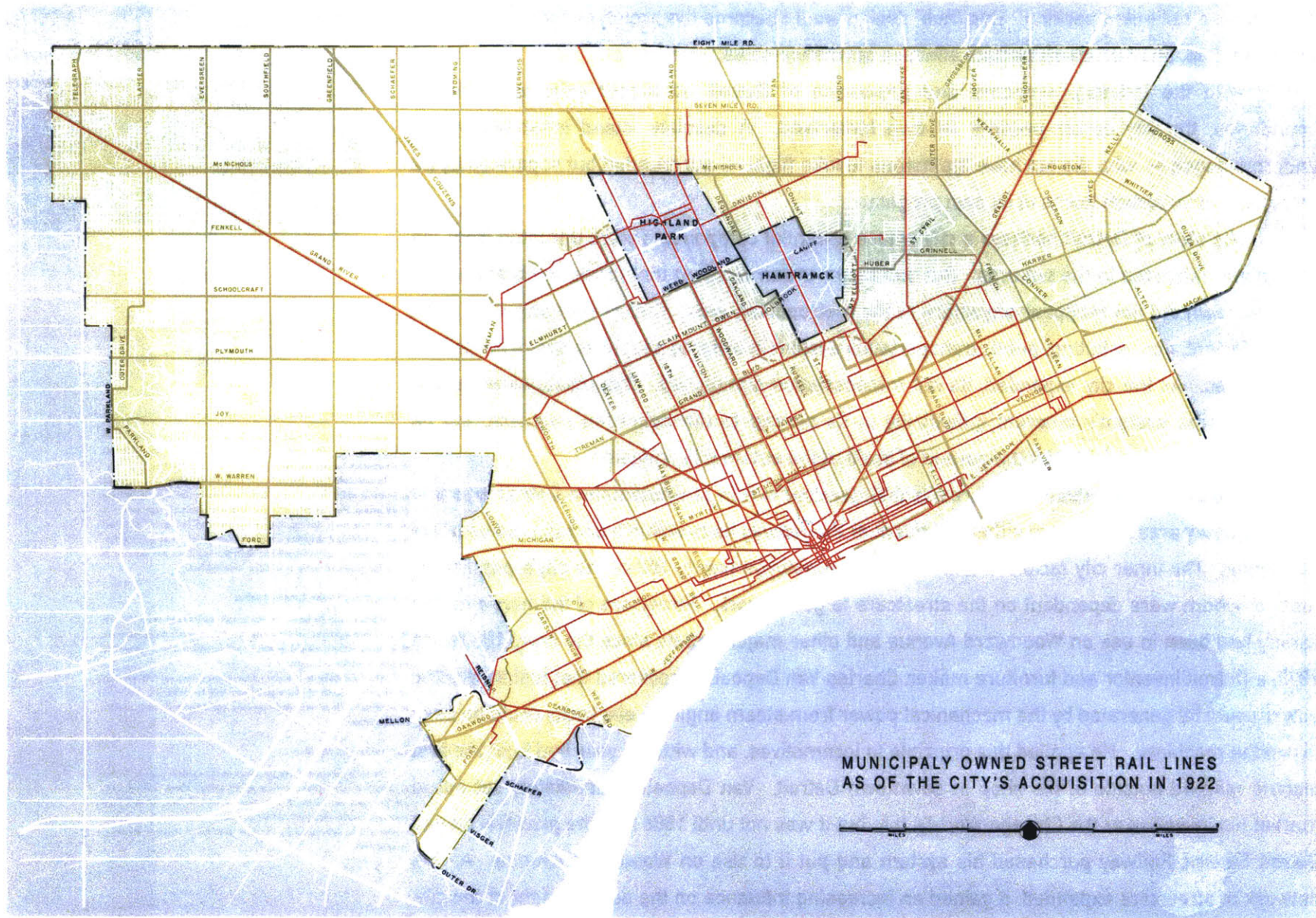
With the industry, economy, and population of Detroit no longer existing within its boundaries, the city center became its own hinterland. A desolate island inhabited by the underprivileged — who did not have the means to take flight — surrounded but separated by an archipelago of suburban towns of its own progeny.

The story of Detroit portrays a city whose essential components were uprooted from the center, and relocated in the suburbs. But one major urban element that formerly characterized the downtown did not reappear anywhere in the metropolitan area. Detroit overlooked its need for an efficient, non-polluting, public transportation system in order to satiate its desire for private automobiles. As the city expanded, its rail transportation diminished. This disappearance was blamed on the system's inherent inflexibility in its service to the suburban populace, but its dismantling was also driven by the pursuit of profit of the automobile industry.

The pattern of industrial and residential development in pre-automotive Detroit was that of high density areas tangent to either the rivers or the railway belts within a six mile radius of the city center. The inner city factories and dry-docks employed nearly 40% of the city's population, most of whom were dependent on the streetcars to get to work. Streetcars of the horse-drawn variety had been in use on Woodward Avenue and other major streets since the early 1860's. In 1873, a Detroit inventor and furniture maker, Charles Van Depoele discovered that just as electric power could be generated by the mechanical power from steam engines, electricity could be used to run the machines. He applied this principle to locomotives, and within a year had built the first electric railroad outside of his shop in downtown Detroit. Van Depoele immediately set out to market his invention at the Chicago World's fair, but it was not until 1886 that the privately owned Detroit Electric Railway purchased his system and put it to use on Woodward Avenue. As the network of streetcars expanded, it gained an increasing influence on the development of the city. The various intra-urban and inter-city electric rail lines that operated in Detroit remained privately



BIRD'S EYE VIEW - SHOWING ABOUT THREE MILES SQUARE - OF THE CENTRAL PORTION OF THE CITY OF DETROIT, MICHIGAN



MUNICIPALLY OWNED STREET RAIL LINES
AS OF THE CITY'S ACQUISITION IN 1922



owned and operated until 1922, when the city ended a grueling thirty year campaign to appropriate the entire network. The newly formed Detroit Street Railway was the largest municipally owned transit system in the world, ironically, in the city which also boasted the world's largest percentage of automobile ownership. As large as this system was, however, its importance and stability were in peril as soon as the automobile industry gained its stronghold on the city.

Even before any significant decentralization had occurred, the shifting employment patterns that the auto plants imposed on the urban workforce had a drastic effect on transit ridership. Previous to the highway act and other road paving initiatives, the poor quality of the mostly dirt roads made most automobile use a seasonal activity. As a result, the sale and manufacture of cars became seasonal as well, with long breaks of unemployment between production periods. Due to the general lack of a seniority system at most plants, workers were not guaranteed that their jobs would be vacant when the work started up again. Frequently, semi-skilled laborers would be employed by a different company each season, making it nearly impossible for workers to maintain housing in proximity to their jobs. Although many of the factories were located along the major radial streets and serviced by streetcars, the lack of sufficient crosstown routes forced many blue-collar commuters to waste time traveling downtown to make transfers to the appropriate lines. Ridership suffered greatly as these frustrated workers turned to the increasingly accessible form of private transportation.

Detroit's disproportionately high factory wages made it possible for more and more blue-collar workers to purchase cars, and eliminate their reliance on public transit. By the late 1930's, there were forty percent more cars per each one hundred people in the Motor-City than the average all the large U.S. cities.¹³ As the auto magnates grew in political and economic power, they sought to convert the remaining street railway commuters into automobile owners by any means they saw fit. As the factories moved outwards, the street rail lines that were promised by the city never came to fruition. Those families with the suitable racial makeup and financial status bought cars and moved out to the newly settled subdivisions that surrounded these factories. Those who



Woodward Avenue in the late 1800's



Maps showing the Metropolitan Detroit region's interurban rail network shortly before municipal acquisition in 1922



stayed behind — mostly poor immigrants, blacks, and elderly people— were left to contend with an eroding city that offered no access to the jobs that lay outside its borders.

The absence of significant public transportation systems connecting most American cities to their suburbs is easily blamed on a number of factors. A community's undisclosed desire for racial or economic segregation, and its unwillingness to incur the expense of building and maintaining transit infrastructure are the most common deterrents of public transportation. In Detroit, however, a single industry's basic drive for increased profits, via the elimination of a competitive product, had as much of an impact on the demise of the city's mass transit than any racial or socio-economic agenda.

The automobile executives were swift in accruing political influence over the operations of the city's mass transit. In 1913, when the effort to achieve full municipal ownership of the various streetcar systems was officially approved by the voting public, city hall created the Detroit Street Railway Commission. This commission had the responsibility of completing the initial acquisition of the entire system, and subsequently operating and managing it. The first members to be appointed to this commission were John Dodge, partner of Dodge Brothers Motor Car Company; and James Couzens, general manager of Ford Motor Company. Throughout its existence, the D.S.R. would often be chaired by auto-executives, without any inquiries ever being made into this inherent conflict of interest. At one point in his tenure on the commission, Couzens along with Henry Ford threatened to replace a troubled streetcar line with a thousand model-T's. A number of years later, as mayor of Detroit,

Couzens rejected a plan already approved by the voters, that called for the reduction of traffic congestion and increased streetcar efficiency through the construction of a downtown subway. Nearly as soon as the commission was chartered, it adopted many auto-centric working principles that steered its actions for the next forty years. It was the general belief among the succession of commission members that urban rail transportation was inherently inefficient, inflexible, and incapable of fulfilling the needs of the modern commuter. The only acceptable option for public transportation system in Detroit was one that was powered by internal combustion and ran on rubber tires. Within its first year the D.S.R. commission began experimenting with motor coach routes. In 1925 they succeeded in opening the first permanent bus route, using Dodge Motors buses.

By the late 1920's, the transit riders were publicly complaining about the D.S.R.'s obvious preference for buses over streetcars. Both commuters and transit workers felt that streetcars were more attractive, quieter, cleaner, faster, more comfortable, and required less maintenance than motorbuses. Nevertheless, the D.S.R. commission habitually ignored the voters' repeated requests for extended rail routes, a downtown subway, and the general longevity of rail operations. Although sixty percent of the public transit being used at the current time was on the streetcars, most of the D.S.R.'s budget was being spent on what was essentially a competing bus system. At the end of the 1930's, the commission was steadfast in its commitment to buses as the primary carriers. A moratorium on the purchase of new streetcars went into effect, and every major car line was coupled with a bus route competing for the same passengers. While the war years of the early forties saw a promising increase in rail ridership and a temporary cessation to the advancement of bus routes, the trends that were to lead to complete rail abandonment by the D.S.R. were already in motion. In 1946, the commission made public its plans to discontinue all rail use in favor of buses. This was outlined in a D.S.R. report that was a direct response to a Mayoral committee of the previous year. The committee advocated "a network of radial expressways, as well as a cross-town superhighway. Each of these new roads was to include a center portion



Woodward Avenue in the late 1800's

for high-speed rail lines, which would be operated with multiple-unit streetcars in trains... Streetcars would enter a subway at the edge of the central business district and run to a new underground terminal."¹⁴ The D.S.R. realized the inevitability of the highway construction that the Mayoral committee proposed, but would ensure that the new expressways would not move anything on rails. Their response to the committee's plan was to substitute the high-speed rails with high-speed bus routes. The D.S.R. report stated that: "The ultimate form of rapid transportation will be by modern motor buses operating over the expressway highway network... It is a superior type of rapid transit that cannot be economically achieved by any other means because of the physical characteristics of Detroit. Rapid transit by bus operation on the expressways will immediately create extensive demand for this superior service".¹⁵ The early expressways were built according to the D.S.R. recommendations and without the downtown subway. But by 1948, these high speed busways were eliminated as buses were constantly being trapped in expressway traffic, and thus unable to maintain a working schedule. Despite this setback, the D.S.R. continued its campaign to dismantle the streetcar system at a rate predicated by that of highway construction. The first sections of track to be torn up were those that lay in the direct path of the proposed freeways. As more highways were planned, bus routes replaced every streetcar line that the new construction was to intersect, leaving only the major radial streets of the city with rail transport by the early 1950's.

In 1951, the Transportation Survey Department of the General Motors Corporation, Trucks and Coach Division released a report assessing the condition of the Detroit Street Railway operations. This report identified the D.S.R.'s primary routes while pointing out the inefficiency and decreasing ridership of the system. It also outlined for the commission a clear and immediate solution to these problems. The solution proposed to the D.S.R. was that it should acquire nearly four hundred General Motors diesel buses for both the conversion of these major rail routes as well as the replacement of its existing fleet. The automobile industry's influence was such that the commission heeded this advice, and began the conversion of the routes

mentioned within that same year. The direct involvement of General Motors in the dismantling of the city's rail system was not exclusive to Detroit. The infamous conspiracy, in which G.M. undermined the mass transit systems of America's cities, was the subject of almost thirty years' worth of Federal antitrust hearings, beginning in 1949. G.M.'s interest in motor bus transportation was, according to former San Francisco mayor Joseph Alioto's testimony in front of the Senate Sub-Committee on Antitrust and Monopoly: "a deliberate concerted action with the oil companies and the tire companies...for the purpose of destroying a vital form of competition; namely electric rapid transit."¹⁶ General Motors and the allied highway interests were accused of destroying one hundred electric rail and electric bus systems in fifty-six cities. In a study undertaken for the Senate Subcommittee on Antitrust and Monopoly, entitled "American Ground Transport", Assistant Counsel Bradford C. Snell took these accusations a step further. He states: "a war has been raging in this country between automobiles and mass transit, and that this war has, in effect, shaped American society. It began as an economic struggle between competing methods of transportation. It became a relentless campaign to destroy America's rail and bus systems...[General Motors, Ford, and Chrysler] eliminated competition among themselves, secured control over rival bus and rail industries, and then maximized profits by substituting cars and trucks for every other competing method of transportation, including trains, streetcars, subways, and buses. In short, they put America on wheels."¹⁷ The report, along with Snell's testimony in a 1974 Congressional hearing, provides evidence of how G.M. colluded with Standard Oil, Firestone Tires, and others to form holding companies that discarded electric trains and tore up the tracks and transmission lines. These companies were then authorized to replace the train systems with G.M. motor buses fueled by Standard Oil and equipped with Firestone Tires. In order to prevent these unfortunate cities from rebuilding their rail or electric bus systems, the holding companies used contracts that prohibited the purchase of "any new equipment using any fuel or means of propulsion other than gas."¹⁸ The result, according to Snell, was that the "noisy, foul-smelling buses turned earlier patrons of the high-speed rail systems away from public transportation and, in effect, sold millions

of private automobiles.”¹⁹

Amidst the commencement of these trials involving G.M.'s illicit role in the mass transit monopolies, the General Manager of the Detroit Street Railway, bolstered by his recent contract with the accused company, released his own report pleading the case for rail abandonment. Citing the danger of street loading onto streetcars; the massive capital outlay of track maintenance and route expansion; and the inability of an inflexible rail based system to react in a Civil Defense emergency, the D.S.R. outlined its final plan for derailment. Despite rigorous public objection, the full conversion of Detroit's transit system to diesel buses was completed in April 1956, when the last electric streetcar rolled down Woodward Avenue. Ironically, the transit authority operated the buses under the name Detroit Street Railway until 1974, at which point it was replaced by the Detroit Department of Transportation. During the eighteen years between the demise of the streetcars and the end of the D.S.R. transit ridership dropped from 205 million passengers per year to just under seventy million. As the city dissolved and the suburbs grew, the level of service of the bus system continued to decline. Jobs continued to hemorrhage into the suburbs, but the buses failed to provide adequate access to these areas.

Although over one half of its population has left the city since the late 1950's, Detroit is still left with close to a million people living within its city limits. Most of the remaining residents are in low-income situations and over fifty percent are not registered as owning an automobile, due in part to the inordinately high insurance rates. The unsatisfactory public transit system leaves those without the means to acquire private transportation locked out of the suburbs, and bereft of the fruits of industrial modernism.

The degree to which capitalism was allowed to shape the urban environment and define the culture in such a direct manner is what made Detroit the most successful modernist city of the twentieth century. The city's single source of capital was the ability to move individuals at a rapid speed, independent from one another. It defined the individual by placing them in a

modern conveyance, and giving them the freedom to go in their chosen direction, at their chosen velocity, in solitude. This freedom came at the expense of the city's centrality of cultural activity and social interaction. In Detroit, the urban functions were spatially reorganized year after year based on a logic of horizontally increasing distance and a network of paths leading out of the city. As automobiles became faster, these distances grew exponentially, and the paths became more pronounced. Dan Hoffman describes the relational function of Ford's assembly line as being "a moving machine produces a machine that moves".²⁰ Detroit itself became an assembly line, expanding horizontally and discarding its past. Its product was the modern middle class American who would strive to move in the same direction, out of the city slums and into the suburban bliss. Everything Detroit produced moved out of Detroit. To the operators of this assembly line, public transportation disrupted the flow, restricting a mass of potential consumers to a single location inside the city, but outside of the market. It maintained a connectivity to the urban center which was weighed down by the burden of history. While cars traveled on a linear path away from this center, mass transit moved in a cyclical pattern, always returning to the location of its past. From the vantage point of the individual in his automobile, the collective group incarcerated within the public transit system was stationary. These passengers were motionless, moneyless, and powerless. The network of streetcar tracks and bus routes was a web wound around the center of the city, in which was caught the trappings of the past. But the future of Detroit, as left in the hands of the automobile companies, was also to be forgotten about—a footnote in the story of its suburbs. Jane Jacobs blames the decline of this city on the 'dead-end' situation of its singular economic dependence on the automobile industry; when it went sour, the city's economy simply followed. But the current state of Detroit is as much the result of urban trends set in motion during the greatest period of the industry's power, trends that went unopposed and whose sole benefit was to the industry itself. Detroit's success was its ability to organize its pursuit of profit into a spatial logic, one that justified the product while simultaneously creating its market, controlling its labor force, and eliminating its competition. Detroit's success was in its ability to reinvent itself as

a commodity driven by the market forces that it created and controlled. Detroit's success was in its singular commitment to the industrial production of technologies that would profoundly affect the culture and space of every modern city. Detroit's success was its failure.

Endnotes

- ¹ Jerry Herron, "Three Meditations On the Ruins of Detroit," in *Stalking Detroit*. Eds. Georgia Daskalakis, Charles Waldheim, Jason Young (Barcelona: Actar, 2001), p.33
- ² Dan Hoffman, "The Best the World Has to Offer," in *Stalking Detroit*. Eds. Georgia Daskalakis, Charles Waldheim, Jason Young (Barcelona: Actar, 2001), p. 42.
- ³ M. Josephson, "Henry Ford," in *Broom* (October 5, 1923), quoted in Gerhard Fehl, "Welcher Fordismus?" in: *Zukunft aus Amerika: Fordismus in der Zwischenkriegszeit* (Dessau: Stiftung Bauhaus, 1995).
- ⁴ Ford's Model-T consisted of Dodge Brothers' engine, chassis, and transmission; and C.R. Wilson Carriage Company's body and cushions. He relied fully on his engineer Harold Wills for the design of the car.
- ⁵ The origin of the assembly line technique of production is considered to be in the slaughterhouses of Cincinnati, where pig carcasses were moved on hooks through the various stages of slaughtering and butchering.
- ⁶ Patrick Schumacher and Christian Rogner, "After Ford," in *Stalking Detroit*. Eds. Georgia Daskalakis, Charles Waldheim, Jason Young (Barcelona: Actar, 2001), pg 49.
- ⁷ Thomas Ticknor, *Motor City: The Impact of the Automobile Industry Upon Detroit, 1900-1975* (Ann Arbor, The University of Michigan, Ph.D., 1978), pg 118-119.
- ⁸ *Ibid.*, pg 248.

⁹ Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, 1961), pg 349-350.

¹⁰ *Ibid.*, pg 343.

¹¹ Jerry Herron, *op.cit.*, pg 39.

¹² City Plan Commission, *City of Detroit 1951, Detroit Master Plan: Plans for a Finer City. The Official Comprehensive Plan for the development and improvement of Detroit as approved by the Mayor and the Common Council* (Published in 1951 on Detroit's 250th anniversary), pg. 70.

¹³ Thomas Ticknor, *op.cit.*, pg. 200.

¹⁴ Jack E. Schramm, William H. Henning, and Thomas J. Dworman, *Detroit's Street Railways: Volume 2, 1922-1956 Bulletin 120: Central Electric Railfans' Association* pg83.

¹⁵ *Ibid.*

¹⁶ *The Industrial Reorganization Act: Hearings Before the Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary United States Senate, Ninety-Third Congress: Second Session on S. 1167, Part 3: Ground Transportation Industries, February 26, 27, 28; and March 1, 1974* (Washington: U.S. Government Printing Office, 1974), pg. 1786.

¹⁷ *Ibid.*, pg 1840-1841.

¹⁸ *Ibid.*, pg 1845.

¹⁹ *Ibid.*, pg 1844.

²⁰ Dan Hoffman, *op.cit.*, pg 44.

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APPENDIX 2:

Appendix 1 and 2 contain information summarized from a collaborative report to which the author contributed. The original document was written as partial requirements for a Detroit Research Seminar attended in the Fall of 2003 at the Harvard Graduate School of Design, Department of Urban Planning. The purpose of this seminar was to assess the current state of Detroit and identify new and non-traditional land uses as a way to address the city's vacant land issues. The Professors of this seminar were Alex Krieger and Matthew Kiefer.

Non-Traditional Land Uses

Foreign Trade Zones:

Areas within the geographical boundary of the U.S. that are outside of customs territory. Companies may bring foreign and domestic merchandise into an FTZ for storage, testing, re-labeling, displaying and manufacturing without having to pay customs duties or excise taxes.

Environmental Remediation:

Detroit can become an incubator for companies which specialize in brownfield clean-up technology.

Materials Reprocessing:

One of the largest sources of scrap steel is the reprocessing of old automobiles. Abandoned factories can be re-tooled to run backwards, dismantling the cars they once produced. Detroit's other leading industry is healthcare. There is a potential for inner city medical materials reprocessing facilities to generate low skilled jobs.

Eco-Industrial Parks:

Detroit's high availability of large areas of vacant land can attract the environmentally friendly corporations who wish to integrate sustainable ecological practices into their landscaped campuses.

Urban Agriculture:

Discussed above

Greeninfrastructure:

Discussed above

Urban Forestry:

Discussed above

APPENDIX 3:

Current Statistics of Detroit

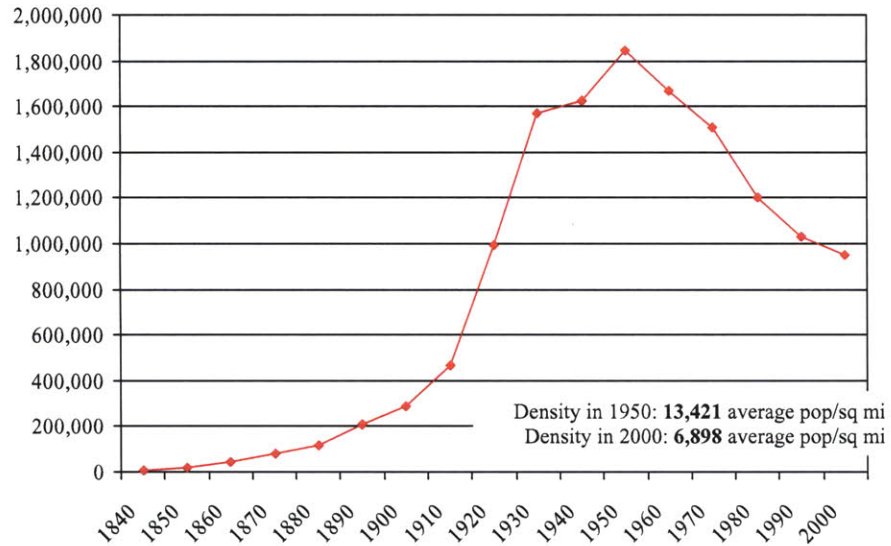
TABLE 2.1: COMPARATIVE ANALYSIS OF CITIES

	Detroit
Total Population	951,270
Land Area (square miles)	138.7
Population per Square mile	6,858
Median Age	30.9
Foreign Born	4.8%
Median HH Income	\$29,526
Median Family Income	\$33,853
% Below Poverty Families	21.7%
% Below Poverty Individuals	26.1%
Housing Units	375,096
Occupied	89.7%
Vacant	10.3%
Median Home Value	\$63,600

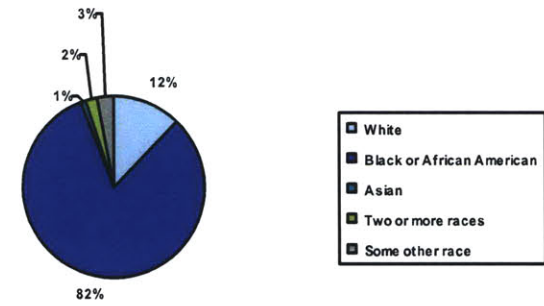
Top 5 Industries of Employment	
Education, Health, Social Services	20.9%
Manufacturing	18.8%
Professional, Management, Admin, Waste Mgmt Services	9.0%
Retail Trade	9.5%
Finance/Insurance/Real Estate Arts/Entertainment, Recreation, Accommodation, and food services Transportation/Warehousing,& Utilities	6.7%
Level of Education Completed	
Less than 9th Grade	7.8%
High School Graduate	30.0%
Bachelor's Degree	6.8%
Graduate Degree	4.2%

Source: 2000 US Census Data

GRAPH 3.1 DETROIT POPULATION LOSS FROM 1950 HEIGHT: 898,298 (49%)



Racial Distribution Chart



	2000 Census	(January 2004)	2030 Forecast
Total Population	951,270	(919,411)	865,623
Households*	336,428	(324,524)	292,163
Breakdown by Age			
Age 0-4	76,232		70,457
Age 5-17	219,477		189,973
Age 18-34	236,450		204,021
Age 35-64	320,055		255,220
Age 65+	99,056		145,952
Total Population	951,270		865,623

Source: Southeast Michigan council of Governments. (November 2002) "Detroit Community Profile for the University of Michigan and Urban Land Institute's 16th Annual Real Estate Forum"

