PROPOSING A SUSTAINABLE URBAN DESIGN BY THE INTRODUCTION OF A NEW MULTI-MODAL TRANSPORTATION SYSTEM IN THE UNITED STATES: A CASE STUDY IN OXFORD, OHIO

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Abstract

Since the 20th century, considerable attention is paid in the United States to how sustainability applies in several mid-size American cities. Sustainable urban design leads to having a more convenient life, while improving economic conditions. Finding a sustainable approach to reach economic opportunities is desirable. Considering sustainable transportation has been the subject of much consideration now. Whereas, public transportation system provides people with shared mobility, ease of access to employment, and community engagement points; most of the U.S cities were designed to use private vehicles since 1950s. Now, U.S. is challenging with critical public transportation problems that force responsible parties to re-think urban planning of their cities. In addition, the expansion of low-density development sprawl resulting in more traffic congestion due to the usage of personal automobile, negatively affecting people's lives and increase the demand for more public transportation systems.

In this study, changing car-oriented cities to multi-modal public transit system that requires an urban transformation is addressed in the college town of Oxford, Ohio. Oxford, Ohio faces transportation challenges in its urban fabric. But in near future, there will be an AMTRAK stop from New York to Chicago route in the city. As a result, a design for AMTRAK stop is needed. Now, the infrastructure of the city does not support as many cars, bicycles, and pedestrians, especially around future AMTRAK station. There is a lack of safe, and reliable transportation alternatives in Oxford, Ohio.
Hence, this study will provide a multi-modal transportation by introduction of more walkable areas, bicycle lines, public places, and a mixed-use development including commercial, residential, hotel, research center, and station to support a transit-oriented development (TOD) around the station. This paper reviews best practices in several cities such as Stanford, California, Urbana Champaign, Illinois, and Copenhagen, Denmark, Europe to consider how cities, specifically the university towns, could benefit from specific policies where new architectural interventions would support more livable urban areas as well as more economic opportunities.

Introduction

Human welfare, which paves the ground for community development, comes from best practices in social, economic, and political conditions. There is a strong relation between transportation and economic growth. Transportation is a key section of the economy and a tool for development. Indeed, efficient transit system provides social and economic opportunities that result in better market accessibility, employment, entertainment, investment, therefore, better quality of life. US transportation is promoted by road, rail, air, and water ports, whereas vast majority of passenger travel by automobile[1]. Although automobile provides diverse advantages for people, the issues of traffic congestion, oil dependence, air pollution, and global warming are on the rise. Undeniably, U.S. is challenging with critical public transportation problems that force responsible parties to re-think urban planning of their cities. The report by the U.S. PIRG Education Fund stressed the need for more rail and bus in the transit system of U.S[2] that reveals the need for better access to public transportation systems. Public transportation system has diverse merits including financial progress, reduction in air pollution, increase in fuel efficiency, decrease in traffic congestion, increase in mobility, safer travel, and healthier environment[3].

On the other hand, climate change is a major issue in environmental science and efficiency of fossil fuel is under more investigation. Indeed, sustainability issues and requirements for reducing car pollution leads to improvement of public transportation systems. Still, there are various cities that fail to meet their resident's needs, as they do not meet their occupants' requirements such as having wide public spaces, entertainment places, and green areas. Making cities efficient, sustainable, and livable is an essential value for every communities. While urbanism is increasing in the new era, diverse cities around the world still maintain and protect natural systems. Many communities around the U.S. attempt diverse programs to meet sustainability. The theory of sustainable urbanism would be the most important progress toward solving environmental and social phenomenon.

Indeed, sustainability taken into considerable account from the standpoint of community to develop and implement a design that satisfy resident's needs. Many cities in United States from Chicago to Cleveland to Santa Monica apply sustainable actions. Yet, most of them are in their primitive stage and not enough attention is paid to the subject of sustainability. Hence, a model for urbanism that addresses sustainability is required in the U.S.[4] Meeting sustainable aspects in communities paves the ground for facing environmental challenges and detrimental effects of climate change. Although several studies propose sustainable urban planning, yet a new model is always a question. Sustainable solution leads to: 1) more speedy and safer transportation systems by reducing the number of cars, therefore traffic congestion, and 2) economic growth as a means of saving more budget by having less health issues, less waste, less usage of mechanical systems which are heavily based on electricity, parallel to improvement in usage of renewable energies and reduction of fossil fuels. Sustainability is advantageous in several ways. First, from the environmental point of view, it protects ecosystem due to reduction in waste and gas emission, in addition to conservation in water and energy supply. Then, from the economical perspective, it provides lower rate of energy usage which brings lower costs and higher productivity. As a result of sustainable design, air will be kept clean which will benefit people and their health[5].

In the last decade, many people want to live in a city that has walkable spaces, public areas including bars, restaurants, offices, and green zones such as green roofs and parks. Despite the fact that several attempts have been made to conformed sustainable design (which will be provided in literature review section), still urban design considering sustainability factors has raise special attraction these days that requires more investigation to provide a better design. Consequently, this study investigates a novel urban design approach that supports a multi-modal transportation system to intensify

sustainable type of transit service in United States, specifically in Oxford, Ohio. This will support Transit-Oriented Development (TOD) in long term and will provide economic and population growth in the area. An in-depth study of other cities such Urbana-Champaign, IL and Stanford, CA, and Copenhagen, Denmark, Europe will assess as a case study.

Case Studies

Urbana-Champaign, IL

Urbana-Champaign city which was established to fulfill the need of an Illinois railroad, is another example of a prosperous city that the infrastructure of the city supports several transportation options such as train, bus, taxi, and bicycle. The city offers various types of public transportation including bus, bicycle, train, and airplane. As the picture reveals, Urbana-Champaign is in between an AMTRAK route from Chicago to New Orleans. In addition, the city is working on introduction of some parking for autonomous shuttle system which will initiated soon in future.

Fig. 1. AMTRAK Route from Chicago, IL to New Orleans, LA

There is an Illinois terminal expansion project in the city for 8-10 acres to complete until 2023 which will introduce: 200 apartment beds, retail space on the first floor, a 5,000 seat arena, four full size basketball courts, 24 wresting mats, 175-200 hotel rooms, 100,000 square feet of office space, more parking, three sheets of ice, 15 volleyball courts, and a public ice staking ring. This expansion project which will be accessible by bus, train, bicycles, and pedestrians, will growing connection between downtown, midtown, and Illinois's campus town. More analysis will provide in graphical presentation part.

Stanford, CA

Stanford, CA is a transit-friendly city which has mixed of train, light rails, bus services, carpool/ride share, bicycle paths, and walkable areas. It has a population around 23,636 during academic year. From the university to the commercial areas around is just a four minutes' walk. Allocation of several commercial districts as a sample of a public space and successful transportation system is the reason that Stanford, CA is selected as one of the best practices in urban planning of college towns.

Fig. 2. Stanford University, CA[11]

Copenhagen, Denmark, Europe

Copenhagen is one of the cities that practices an appropriate sustainable urban design in different ways. Its population was about 528,000 in 2012. In the middle of the 20th century, the city faced a crucial problem related to its building spaces and recreational spaces, especially, there has been an in-depth urban development in north side of the city, whereas suburbs were seems more appealing due to its environmental attraction such as woods, pools, waterfronts, and bay areas. After second World War, there was a drastic growth in Danish

Fig. 3. Urbana-Champaign, IL

population which caused migration of people from suburbs to city centers. Hence, the was a tremendous need for housing and settlement that takes development and growth of population in account. Within 1940s and 1960s, the number of houses that built by garden had highly raised. This boost paved the ground for industrial growth which was led by trade and public service development. As a result, there was a demand for building companies in more spacious districts. In addition, with the growth in population, people moved to neighbor areas that result in a growing problem. Since the price of land was less expensive in comparison to the price of the city centers, people moved to rural areas and made city centers low-density and unsafe place. As a result, there green plan was proposed in 1947 that settled new residents around suburban train lines. In this plan, firstly, the usage of car was minimized as a result of improvement in public transportation system. This decrease air and noise pollution while created a relief from everyday traffic. Secondly, it provided more mobility for people who do not have access to the car and using public transport system instead. Thirdly, it created high density areas which prevents people from scattering around cities. Today, it's vital to follow such this planning since it reduces air and noise pollution as well as reduction of traffic congestion. This plan considers urban development by locating offices near train station to encourage people to use public transportation systems. Hence, several years after, still city keeps its clean air due to reduction in CO2 emission. There has been a municipal plan in Copenhagen since 1989 that concentrates on progress of urban areas, housing, green coverage, sustainability in neighborhood, trade, and industry. Following are some strategies used in Copenhagen[10]:

1. One strategy is to support public transport services with the aim of keeping traffic uncongested by collecting traffic in a few local roads. Public transport access point was located close to the business and industry districts. Services, employees, and visitors who provide a high traffic volume was located six hundred further of traffic junctions. Moreover, building a metro had an important effect on reducing car traffic.

2. Define regulation on car traffic to pave the way for sustainable traffic progress with the purpose of decrease in energy consumption, decline of detrimental environmental effect, and lessen the traffic bothersome. Hence, using public transport systems, riding a bicycle, or walking were encouraged to reach this aim. As a result, several green routes included the cycle path and pedestrian walkable area were built.

In high density cities, green and blue coverage including parks and waterfront areas are valuable, since they are beneficial from the cultural heritage perspective as well as urban environmental point of view. Hence, having easy access and a good view of these features are key factors for residents of the city. Residents of Copenhagen have easy access to gardens, parks, and green spaces close to their homes. Moreover, as a recreational purpose, people can swim in several zones around the coastline. In 1962, pedestrian area was approximately 13,700 square kilometers. In 1973, it increased to 50,150 square meters. And in 1996, it developed to 94,000 square meters. One aspect of this change is in squares formation which was previously covered by

asphalt, traffic, and parking, now changes with stone pavements, cafes, and green spaces. The movement form vehicle-oriented place to people-oriented areas has been occurred by assistant of architect Jan Gehl. In conclusion, Copenhagen has maintained diverse strategies to be pioneer in sustainability by supporting bicycle policy, appropriate area planning that uses public transport systems as a first way for commuting in the city, widening pedestrian areas, building urban life up and more secure. Moreover, sustainable urban design has taken into special account since 1998 and several buildings constructed in a sustainable manner. Still, the city suffers from car traffic and its negative consequences, but as a whole Copenhagen is one of the leaders in sustainable urban planning[11].

Methodology

Proposing a guide to better design a city based on sustainability is the aim of this paper. Evaluation of cities from historical point of view is an important matter in design an urban layout. Understanding the historical places, assessing the development and evolution of cities is required in this stage. It should be clear that what is the historical and most important street in Oxford, OH, what is the orientation of the buildings, and where is the location of business districts in the city. Analyzing these aspects will help the design of urban fabric in a more appropriate way.

Oxford, OH

Miami University started working in 1809. City of Oxford was established because of the University of Miami that has a huge effect on Oxford's future development. Two of the most important historical buildings in Oxford, Ohio are Elliot and Stoddard Halls. Elliot was built in 1828 as a dorm and Stoddard Halls was built in 1838 for the same function. They named with the name of Miami University's faculties. Another historical building is in High St. that called The Old Manse house which was built in 1852 and it's style is a combination of Italianate style by a tower on top and Federal style including 6 pane and 2 parted windows, a chimney and symmetrical shape. This building is the headquarter of Miami's important programs. Some of the most ancient buildings are in Uptown and they have a mixture of Greek Revival and Italianate styles. In Oxford, Ohio most of the building materials are from red brick and white wood that represent the revival of Classical era. The buildings are shaped close to each other to display a sense of a small town. Going along the East Spring St., some houses are belonging to 1930s. For instance, Tudor houses is significant due to its hilly ceiling and narrow windows. Most of the houses in this part belong to Colonial Revival periods that the houses have symmetrical shapes. Down to the main St. in conjunction with Chestnut Ave. there are houses from 1940s, mostly follow Colonial Revival styles. Oxford housing style is mostly about minimalist traditional style. After World War II, Oxford's population increased drastically because people are able to buy a house, as well as going to the college for education. Hence, the population charts reveal a boom from 3000 in 1940 to 7000 in 1950, then 16,000 in 1970.

Some areas in Oxford, Ohio require a better design to address sustainability. For instance, East Chestnut Ave. and South Locust St. do not provide enough pedestrian paths while suffering from high traffic congestion. Some walkable neighborhoods in Oxford, Ohio are hard to sustain since the surrounded housing are not energy efficient. This is evident in Chestnut Street, the opposite side of street from Verge apartments, as well as Spring Street, and South Locust Ave.

Now, the Butler County Regional Transit Authority (BCRTA) is the only organization in charge of public transportation system in Oxford, Ohio. BCRTA provided a support to build a Chestnut Street Multimodal Station and Shared Services Facility in Oxford, Ohio.

From the standpoint of transit-oriented development (TOD), South Locust St. is located near one of the main business districts in Oxford, Ohio which also has a good potential for Transit-Oriented Development (TOD). In addition, College Corner Pike is another commercial district with good potential of economic development.

In sum up, this study uses literature review as the first method of studying. In addition, Information has gathered from the city of Oxford by analyzing its geographical location, interviewing professionals as well as their residents utilizing key aspects of sustainability. Interviewing different people was conducted by participation of Oxford's mayor, city council, city planners, BCRTA board members, planning and special projects manager, Oxford's economic development director, community development director, and other professionals in related areas. Finally, site analysis including the introduction of buildings forms and shapes, their historical vision, major public transportation systems, public spaces, walkable areas, and public via private properties has provided. Analyzing the existing condition of the city is required to complement the method that provides in this study.

Sustainability Principle by Jane Jacob[6]

To illustrate the issue of sustainable design, some principles should apply to streets as one of the important factors in designing a city which should be taken into account from several perspectives including a road for residents' movement as well as a public place for people's gathering. First principle in designing a street from the stand point of Jane Jacob which mentions in her book called "The death and life of great American cities" is that the street has an economic value as much as being a functional part. Appropriate design streets welcome more businesses, while intensify surrounding buildings' value. Second one is about safety. Indeed, walkable areas, parking lots, shopping centers, bicycle lines, roading system all together should provide a safe environment for pedestrian as well as drivers. Third, street acts as an ecosystem. So, sustainability should be considered in its design.

Sustainability Principle by Douglas Farr [7]

Another regulation to address sustainability that extracted from literature review toward a more sustainable design is from "Sustainable Urbanism: Urban Design with Nature[8] book by Douglas Farr. It introduces sustainable design of urban fabric and it highlights the creation of more walkable areas and different places that support high-performance infrastructure and buildings. In this book he demonstrates how to achieve a sustainable urbanism through administration and connection of cities and communities. He believes sustainability will increase through the practice of creating more density, combination of transportation and land use, mixed-used housing, areas free of vehicles, retail stores, pedestrian paths, and accessible places. He thinks that human benefit if there will be a strong connection between human and nature. He also provides several examples of England, Australia, California, and China. He asserts some problems in American's lifestyle including obesity, indoor activities, economic expense, and some psychological issues as a matter of not having enough walkable spaces. This book mentions that sustainable urbanism is a result of late 20th century's 3 movements which builds the path to have a sustainable lifestyle. These movements are 1) smart growth, 2) new urbanism, and 3) green building movement. The smart growth shift is a bout design of compact's buildings. The concentration of new urbanism is on designing more walkable spaces and mixed-use neighborhoods. The green building movement focuses on stormwater filtration, life cycle cost of the buildings, and islands' warming. There are five areas of concern that suggested in this book in order to meet sustainability: biophilia, corridors, density, high-performance buildings and surrounding areas, and infrastructure.

1. Density

The first thing to consider reaching a sustainable urbanism is density. Douglas Farr contends that sustainable metropolitanism comes from lower density housing below 7-8 dwelling units per acre which is four times more than average density at U.S. This density is enough to allocate walkable areas and prevent from traffic congestion.

2. Corridors

Corridors are places that provides connection to support diversity and prevent from isolation and society separation. They increase diversity by linking neighborhoods and other districts

together. The area of the corridor that includes density and mixed-land use should supports enough pedestrian way for people to be free of automobile. It should also support enough density for the transfer of public transportation systems.

3. Biophilia

In designing sustainable cities, flow of resources should be clear and experimental. This could include foods that produce locally, local waste management, stormwater management, and biotopes.

4. High-Performance Buildings and Infrastructure

The focus of this area is to improve the performance of pathways consists of streets, pedestrian ways, critical infrastructure, stormwater systems, and landscapes.

5. Sustainable Neighborhood

Sustainable neighborhood is the form of neighborhood that meets housing, shopping, and work environments requirements in condense, complete, and connected format. To reach a sustainable neighborhood there are some key factors which require to be addressed in a design process. Below are some of them:

1. Detectable center and edge to the neighborhood,

2. Areas of walkability,

3. Housing without off-street parking and mixed-use development,

4. Walkable streets,

5. Districts for civic purpose,

6. Availability of retail stores,

7. Community engagement places,

8. Car sharing, and management of transportation requirements.

Sustainability Principle by Jan Gehl[8]

Another source which will be reviewed in this study is a book called "Cities for people"[8] by Jan Gehl that provides a vision to reach a sustainable city by creating balance between consumption and production, and management of waste to reach a long-term health. Gehl believed that old pattern of design was built on segregation resulted in isolation of communities, isolation of people, and isolation within activities. He thinks previous design did not consider people as a lively organism. Constructions ignore public places, climate, community engagement zones, and they surrounded people in separated areas. Jan Gehl contends that cities should build in a way to remove segregation and address sustainable approach by responding to the climate, developing mixed use housing and activities, and providing more walkable spaces for people. This study uses his strategies for design people and bicycle friendly environment. He attracts people to walk by using an appealing strategy named "the human scale". The human scale is to allocate interesting factors at eye level of human in order to encourage human to walk and stay on the street. Glass walls and high rises are not interesting for people gathering. Gehl believes areas that support cyclists and pedestrians are more likely to attract people for community engagement rather than places that design for vehicles as a basis of design. He emphasizes on creating more walkable and cyclist areas since he thinks city survives only if people gather and use public spaces in a continuous way and this will reach just by creating clean, safe, and appealing places. He criticizes modern planning because of traffic flow and hard-edge designs, where the situation of a city worsens by creating more individual buildings and unfavorable facades. Gehl uses soft edges in his design to provide comfortable place for people that can be an appropriate place to gather and engage, both physically and verbally. Below are some key points of his design approaches:

1. Necessary via optional activities:

Jan Gehl highlighted the difference between needed, optional, and social activities. He

mentions that necessary activities can occur regardless of the quality of place, whereas occurrence of optional activities highly depend on attraction of the environment. The higher the quality of a place, the more community engagement happens, and the more people will stay there. Another activity is related to social gathering which includes children's play, public conversation, and communication, watching people and talking. All the mentioned activities become meaningful when there is an appropriate place supporting these activities.

2. Life within buildings

Gehl reveals that people's life between buildings is one of the key factors in designing a city since major part of the necessary, arbitrary, and social activities will take place in this area. This district is where people's communication shape, recreational activities happen, and other life experiences take place.

He believes in continuous transformation in urban design to better address sustainability and provide people with more time to adapt their selves to the new environment and lifestyle. This will facilitate the process of sustainable design by helping change in people's attitude toward more public involvement. In addition, he considers street life both in summer and winter which requires lightening and special heating technology to support outdoor activities and events. Gehl accentuates lively, secure, sustainable, and healthy factors to design a better city. As an example, cities that have more walkable and cyclist areas pave the ground to do more exercise which results in longer lifetime and support cheaper health systems[8]. He also provides diverse examples of sustainable cities such as Copenhagen which will be reviewed later in this study in case studies section.

Sustainability Principle by Peter Calthorpe[9]

Peter Calthorpe's discusses sustainability in a book titled "Sustainable communities: a new design synthesis for cities, suburbs, and towns"[9]. He indicates 3 primary principles for sustainable urbanism. The first principle is design in human scale that is about design public areas on a scale of a human rather than a car. This can exist in places like Manhattan, NY, or historical districts. The second principle to consider in sustainable design is diversity. Having mixed-use development in housing, business districts, and employment centers are to be addressed in design an urban fabric. The third principle focuses on restoration and conservation. He emphasizes on the importance of ecology on planning a city. He believes conservation in terms of the environment, culture, and history should be taken in consideration. He also acknowledges that to live in a place that provides environmental attraction for community involvement, public transportation system should be implemented as well as enough pedestrian paths[9].

Conclusion

In this thesis, a multi-modal transportation system is introduced around future AMTRAK station in Oxford, OH where there is an intersection of Chestnut Ave. and Main St. This design includes a station as a core building, commercial district with some residential above, B&B hotels with a historical Talawanda school building in between, residential areas surrounded by park, research center, and park that will present in the graphical presentation part.

Notes

[1] Rodrigue, Jean Paul and Claude Camtois, and Brian Slack. *The Geography of Transport Systems*. (New York: Routledge, 2017).

[2] "U.S. PIRG Education Fund", https://uspirgedfund.org/.

[3] "National Express Transit", https://www.nationalexpresstransit.com/blog/9-benefits-of-public-transportation/.

[4] Timothy Beatley, *Green Cities of Europe: Global Lessons on Green Urbanism*, (Washington, Covelo, London Island Press, 2011).

[5] "Miller Architects & Builders", The Benefits of Sustainable Design Solutions, 2018, https://millerab.com/the-benefits-of-sustainable-design-solutions/.

[6] Jane Jacobs, *The death and life of great American cities,* (Vintage books: New York, 1961).

[7] Douglas Farr. *Sustainable Urbanism: Urban Design With Nature*. (California: John Wiley & Sons, 2008).

[8] Jan Gehl, *Cities for People*, (Washington: Covelo, London Island Press, 2010).

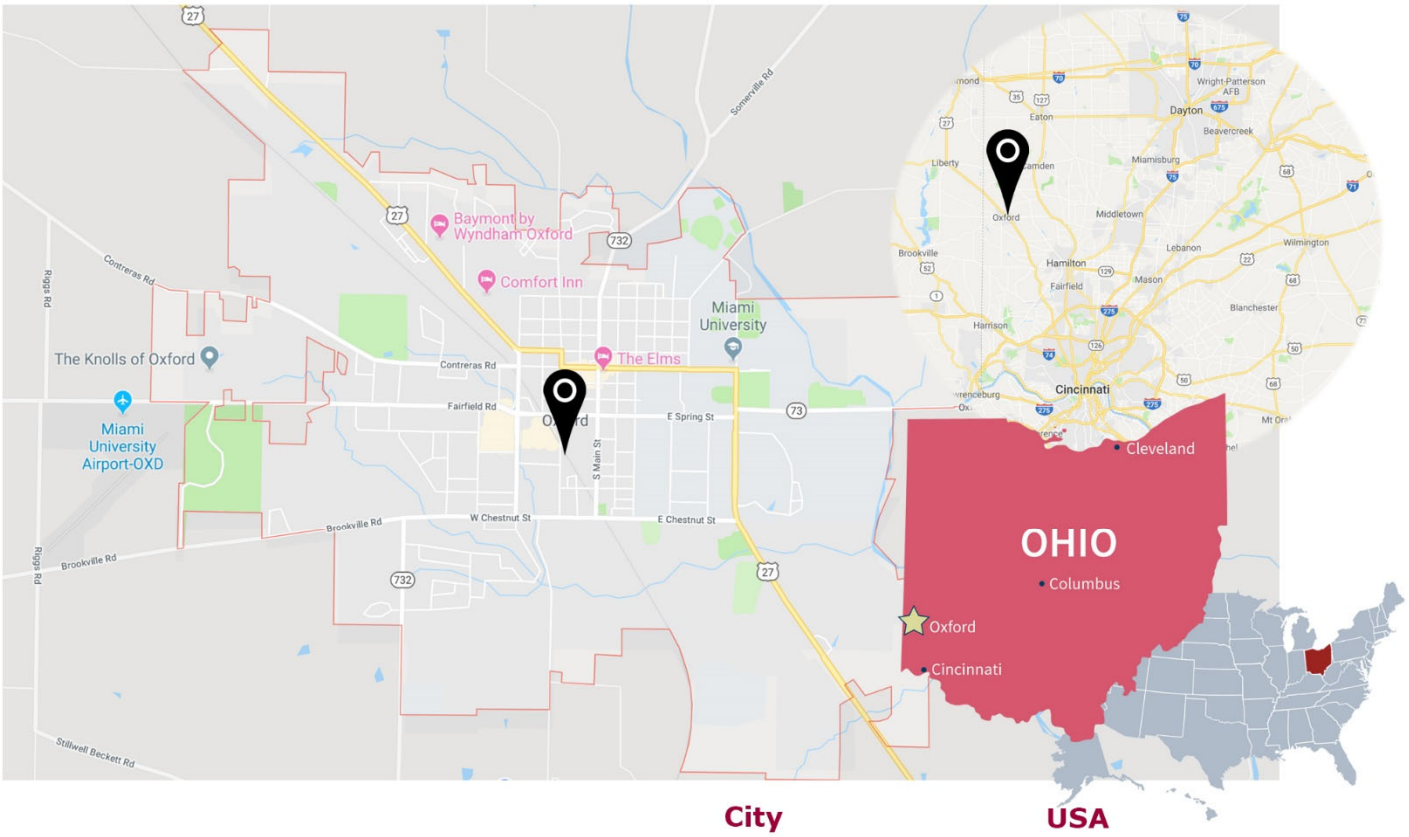
[9] Sim Van der Ryn, and Peter Calthorpe*, Sustainable Communities: A New Design Synthesis for Cities, Suburbs and Towns,* (San Francisco: Sierra Club Books, 1986).

[10] Timothy Beatley, Green Cities of Europe: Global Lessons on Green Urbanism, (Washington, Covelo, London Island Press, 2011).

[11] Bea Karnes, and Patch Staff, "Stanford: California Offers Budgetary Lessons for U.S. Government", Patch, 2014, https://patch.com/california/paloalto/stanford-california-offers-budgetary-lessons-us-government.

Site Location

Oxford, Ohio



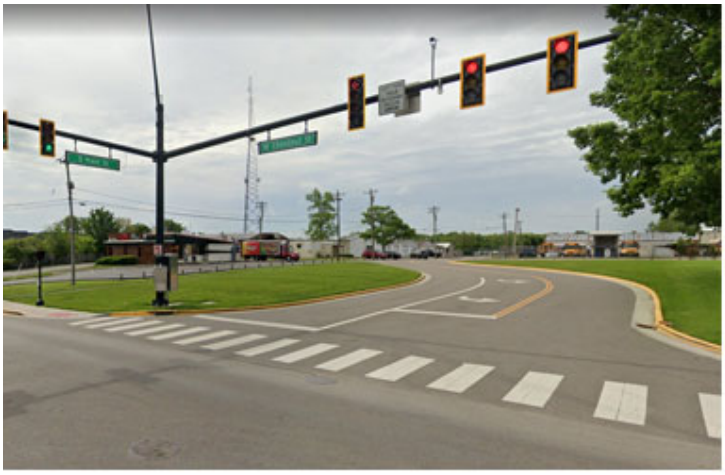
	City	USA
Population (2018)	2,538	326,881,190
Population Density (per sq. mile) (2018)	3,376	93
Population, 65 Years and older (2018)	6.58%	15.46%
Education, College, Master's or Doctorate degree (2018)	58.11%	27.92%
Housing, Built 1939 or earlier (2018)	9.80%	11.14%

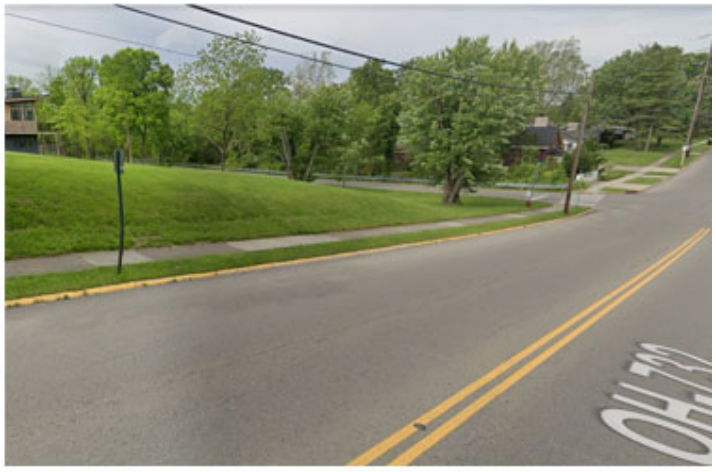
Current Situation

From the standpoint of planning, one of the major problems in Oxford is the public transportation system. The city suffers from efficient routes for buses that prevent from going through the loop in congested areas. The others include lack of enough bike lines, pedestrian path, and community engagement centers. So, there is a need for better and more sustainable transportation in Oxford.

Site Pictures

West Chestnut Ave., Oxford, Ohio





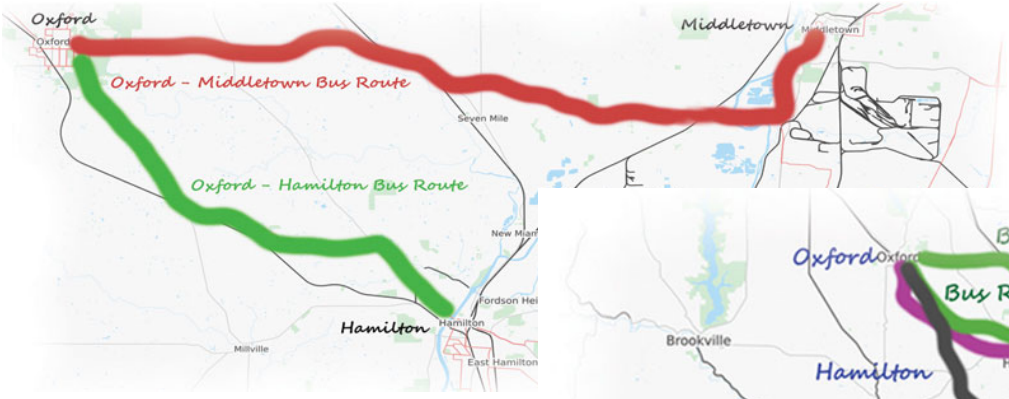
Chestnut Ave.

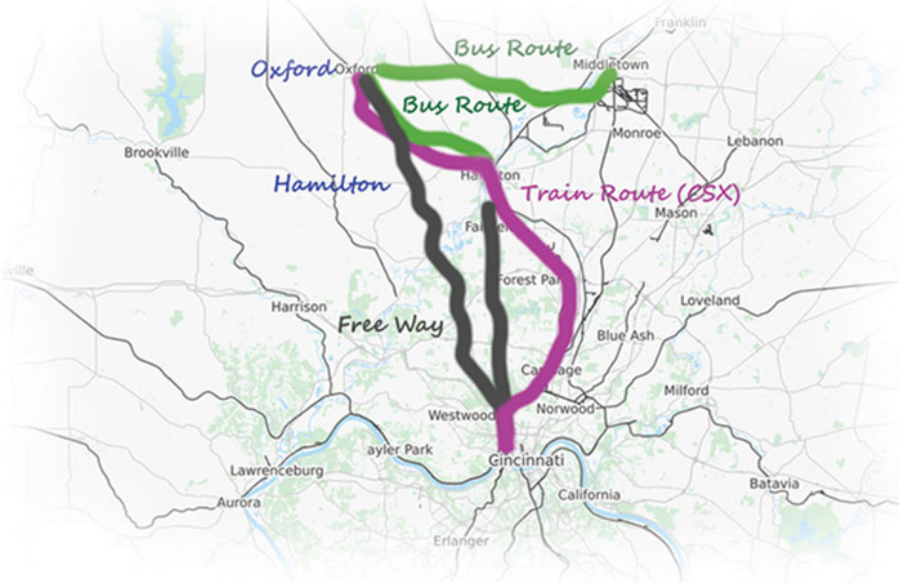
The site is West Chestnut St. from Campus Ave. to the Kehr Rd. This is the transportation hub for Amtrak station in near future. There is a green area around CSX transport rail services which is belong to Miami University and now is used by university for parking of buses (BCRTA).

Neighborhood

Oxford, Ohio

The picture illustrates commuter routes from Oxford to the surrounding areas such as Hamilton, Middletown, and Cincinnati.





Transportation

Oxford, Ohio

Bike Lines

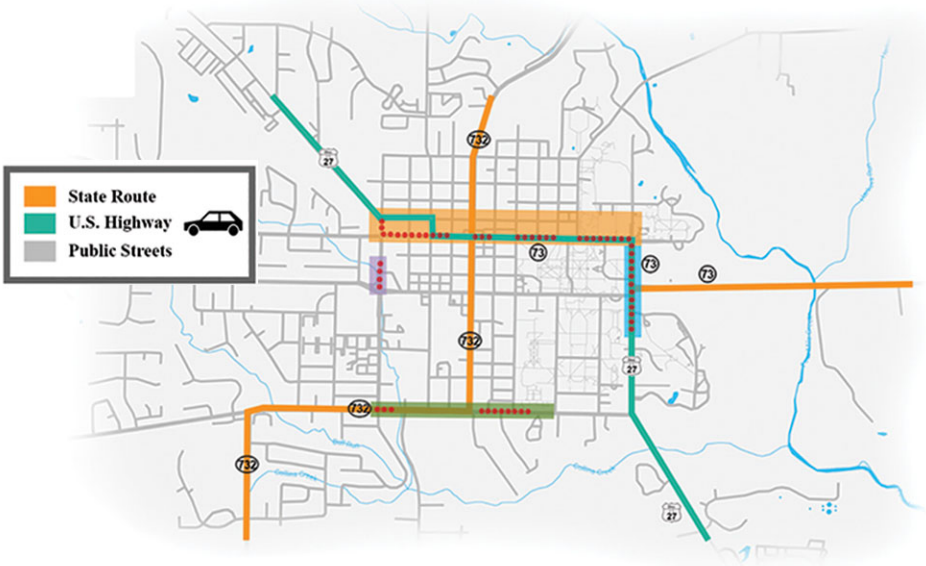
There are limited numbers of bike lines in the city of Oxford. Some are shared with car roads that is not favorable. Most of them located around campus. But the city needs more dedicated bike lines.

Bus Stops

There are various bus stops around Miami University campus. Two routes are allocated for commuting to Hamilton, and Middle town while the others serve the university district.

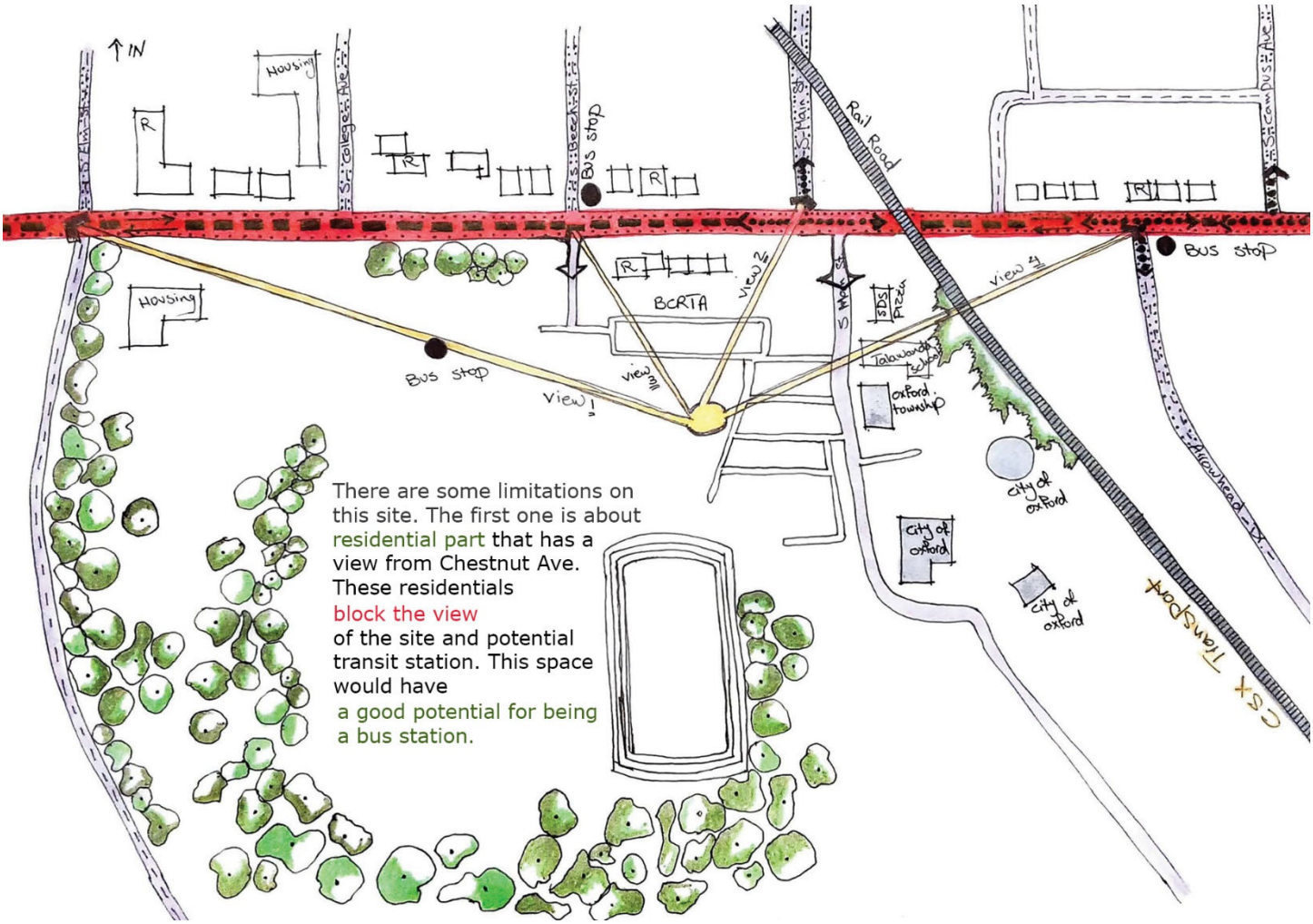
Routes

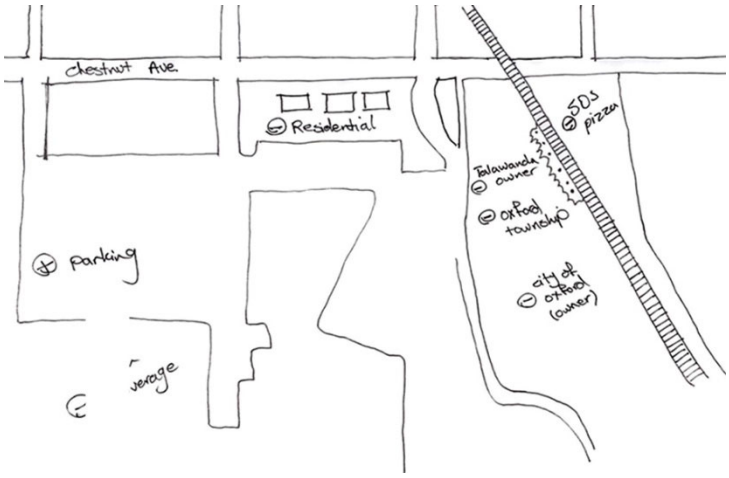
This picture depicts primary and secondary roads in Oxford, OH. The city has 27 state route, 73, and 732 high ways. The rest are public streets.

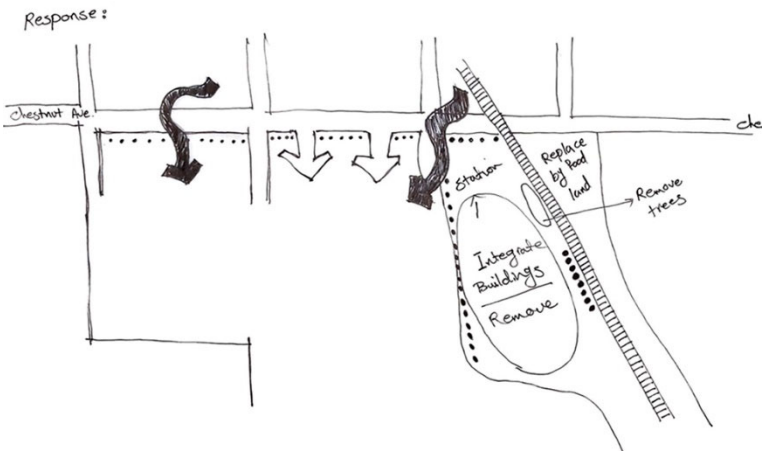


Site view

Oxford, Ohio

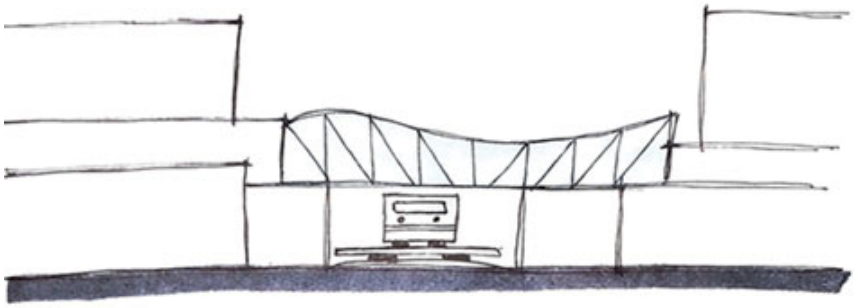


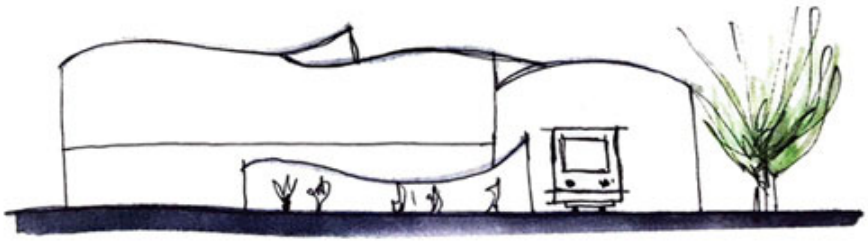


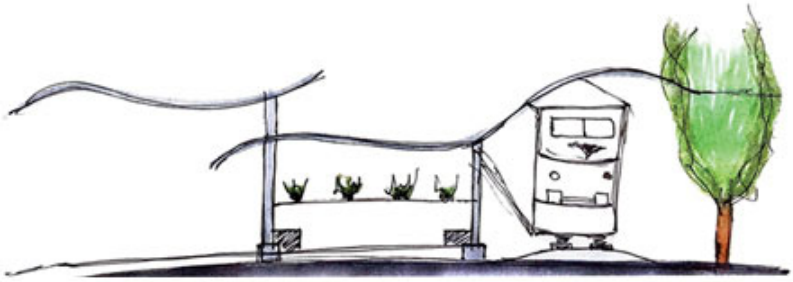


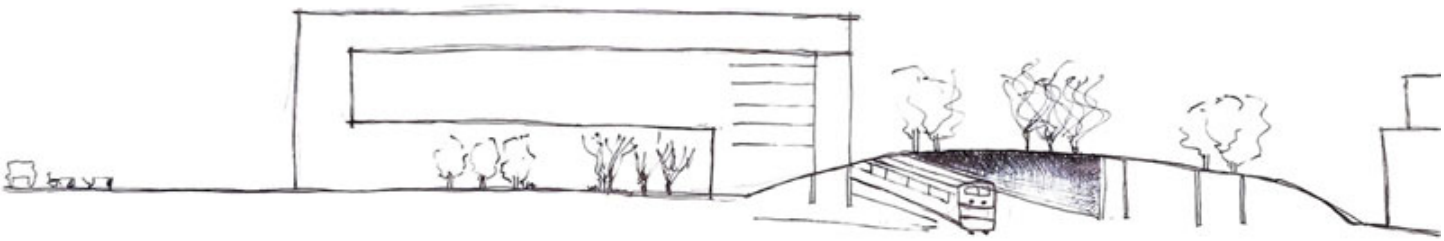
Station Sketches

Oxford, Ohio









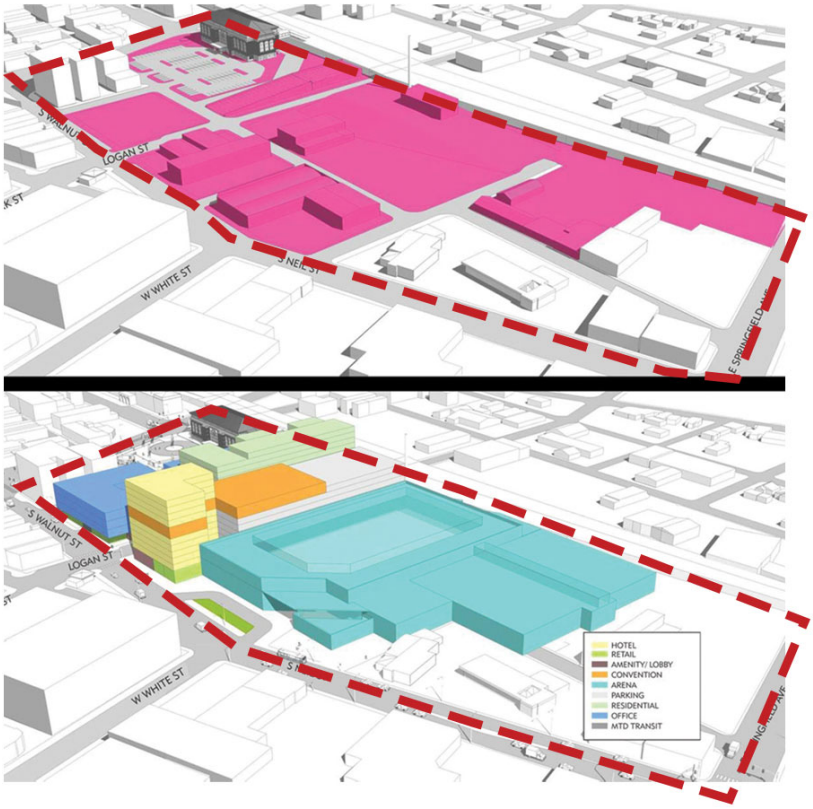
Some pictures illustrate the idea of a bridge which connects two parts of the railroad. This bridge can cover by some plants and trees to create a nice view and people cross it to reach a food court on the other side.

Case Study

Urbana-Champaign, IL

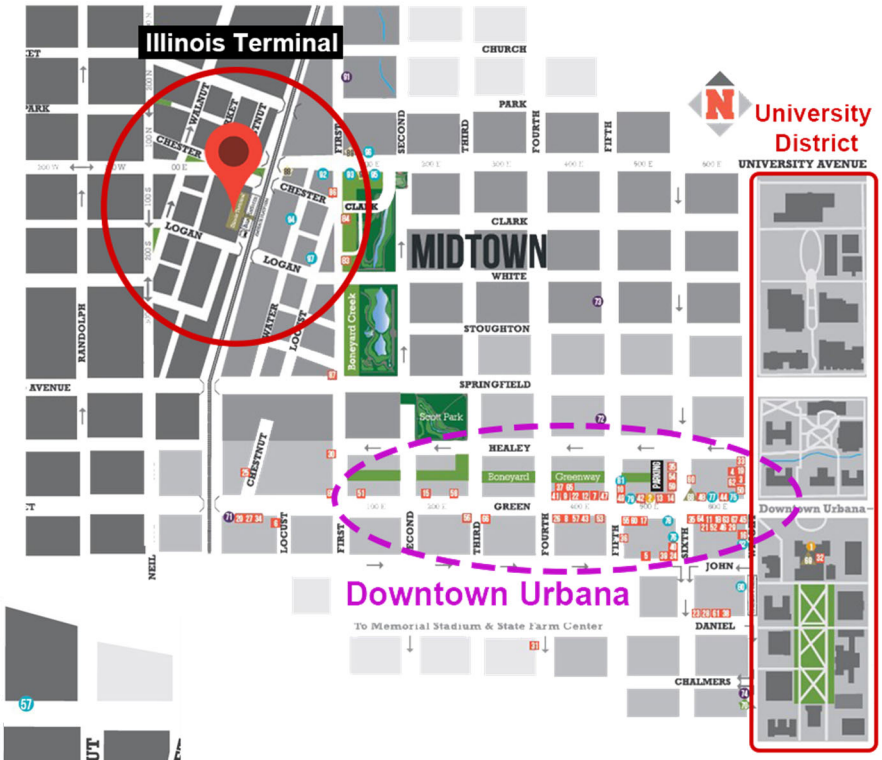
Illinois Terminal Expansion Plan

- 200 apartment beds
- Retail space on the first floor
- A 5,000 seat arena
- four full size basketball courts
- 24 wresting mats
- 175-200 hotel rooms
- 100,000 square feet of office space
- More parking, three sheets of ice
- 15 volleyball courts
- A public ice staking ring.



Case Study

Urbana-Champaign, IL



Case Study

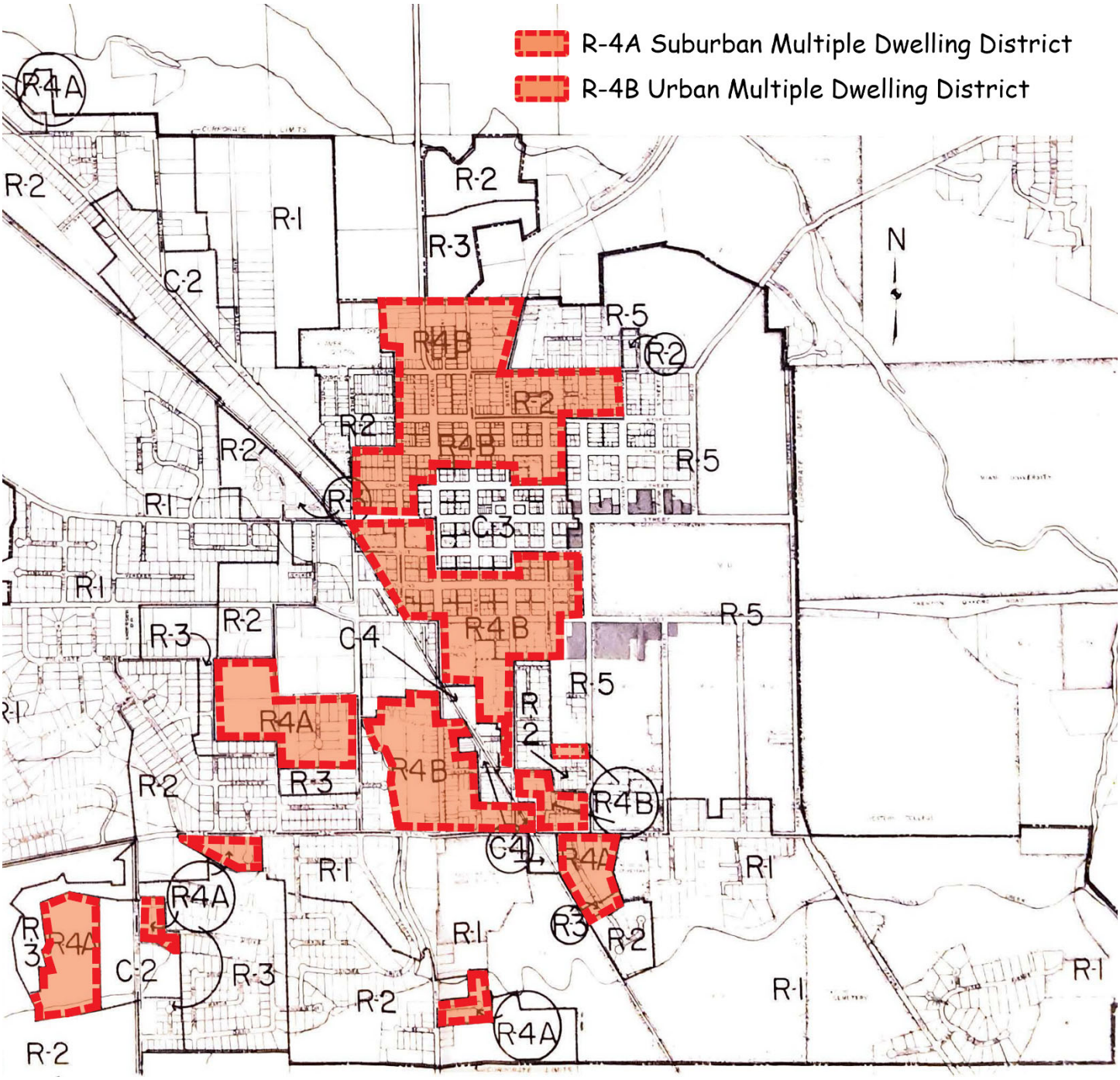
Urbana-Champaign, IL

Green St. Analysis

Café seating on Green St.

City Analysis

Residentials, Oxford, Ohio



The picture reveals in 1982, most of the residentials were located inside the city. Whereas, now in 2020, many of them are relocated to the suburb. In order to design a sustainable city, it requires to provide more housing for students, faculty, and families inside the city.

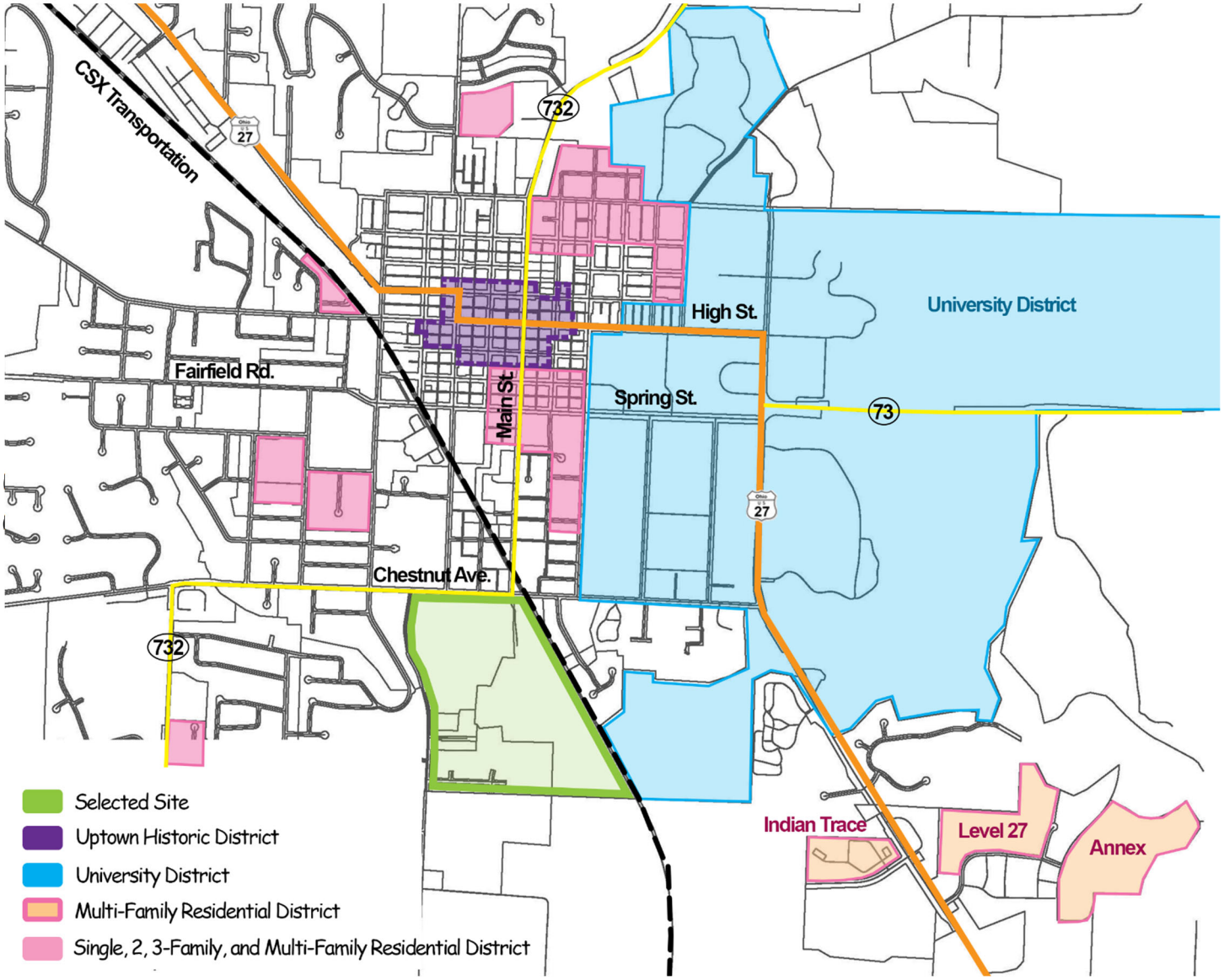
City Analysis

Residentials, Oxford, Ohio

Some residential examples in suburb

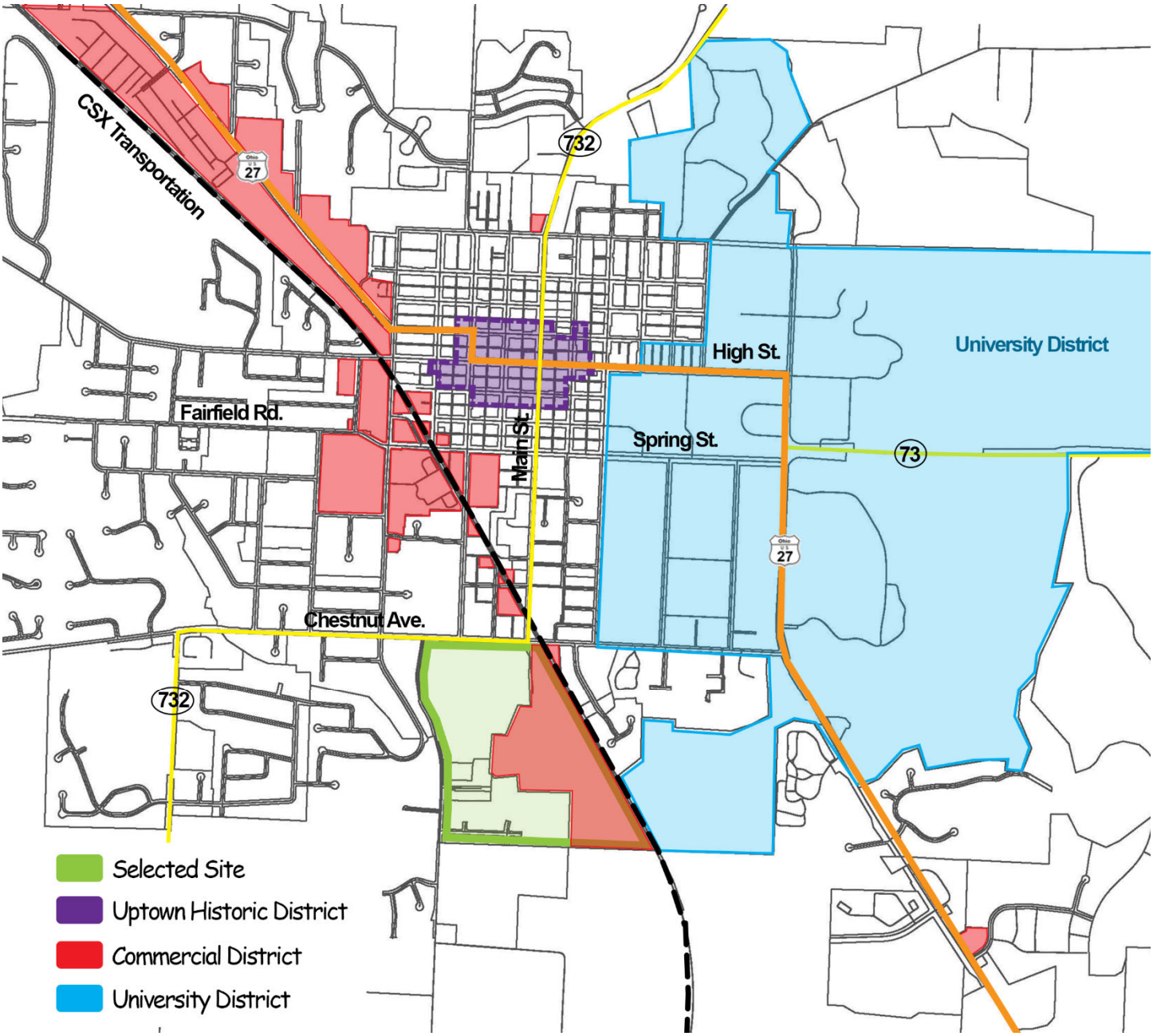
R-4, Multi-Family Residential

Level 27, Annex, Indian Trace



City Analysis

Residentials, Oxford, Ohio



Commercial district is from College Corner Pike, to the intersection of Locust Ave. and Spring St., then continues to the Chestnut Ave. This corridor has a good potential for development and connecting the city together. In addition, High St. is a historic St. in town and next picture will analyze the businesses there in detail.

City Analysis

Commercials, High St., Oxford, Ohio

The pictures reveal the businesses in the high St.
It includes several restaurants, county court, bars,
banks, and parks.


Sushi Nara


Butler County Court


Tang dynasty


Chase Bank


Doctor Martin King Park


The Elms Hotel


Memorial Park


Phi Delta Theta Headquarters

Oxford Copy Shop


Chipotle Mexican Grill


Oxford Municipal

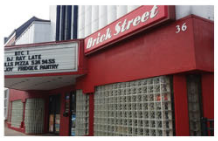

DuBois Book Store


Oxford Press


United Dairy Farmers

Wild Bistro


St. Mary Church



Brick Street Bar

Starbucks Cafe


LCNB Bank


O Pub Bar


Buffalo Wild Wings


Oxford Police

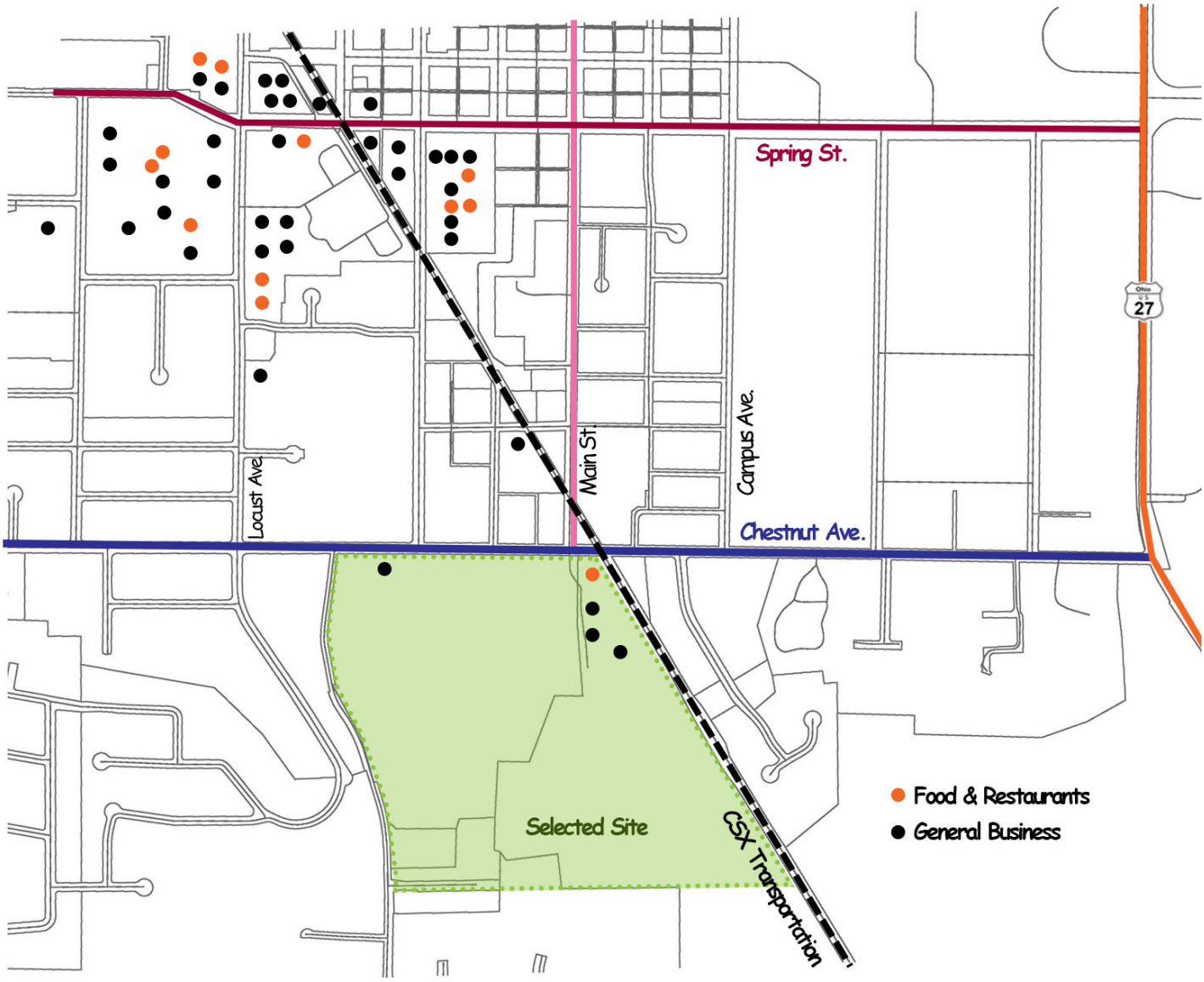

Skipper's Bar

Doughby's

Bird House Antiques

City Analysis

Commercials, Locust Ave., Oxford, Ohio




Papa John's Pizza


SDS Pizza

Little Caesars Pizza


Dim Sum Restaurant

Cross Fit Rec Center

Kroger


Mercy Health

T.J. Maxx


CVS Pharmacy

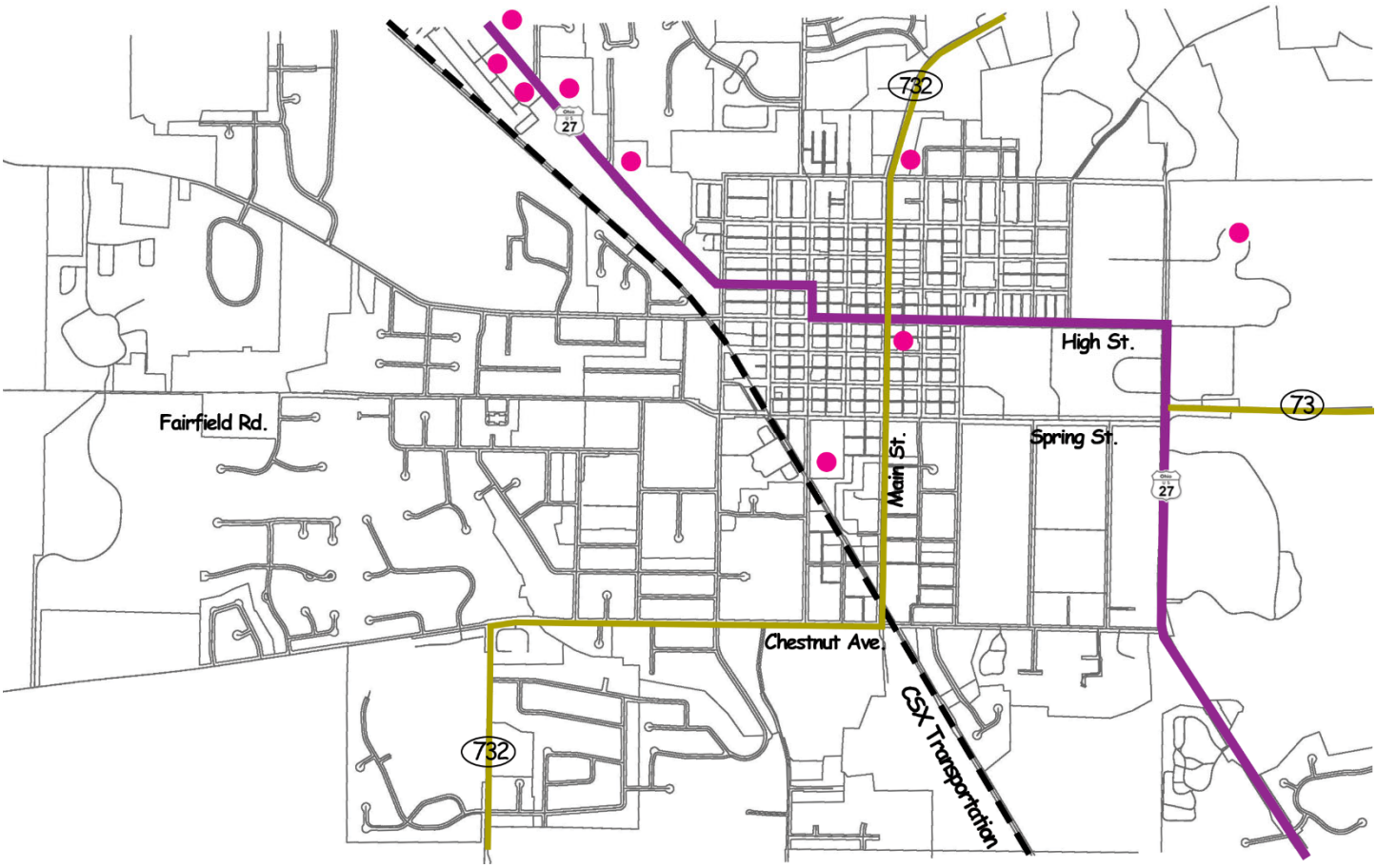
Oxford Storage Solutions


Oxford Township Police

McDonald's

City Analysis

Hotels, Oxford, Ohio



Western Sycamore Inn

Elms

Budget Inn

Baymont by Wyndham

Hampton Inn Oxford

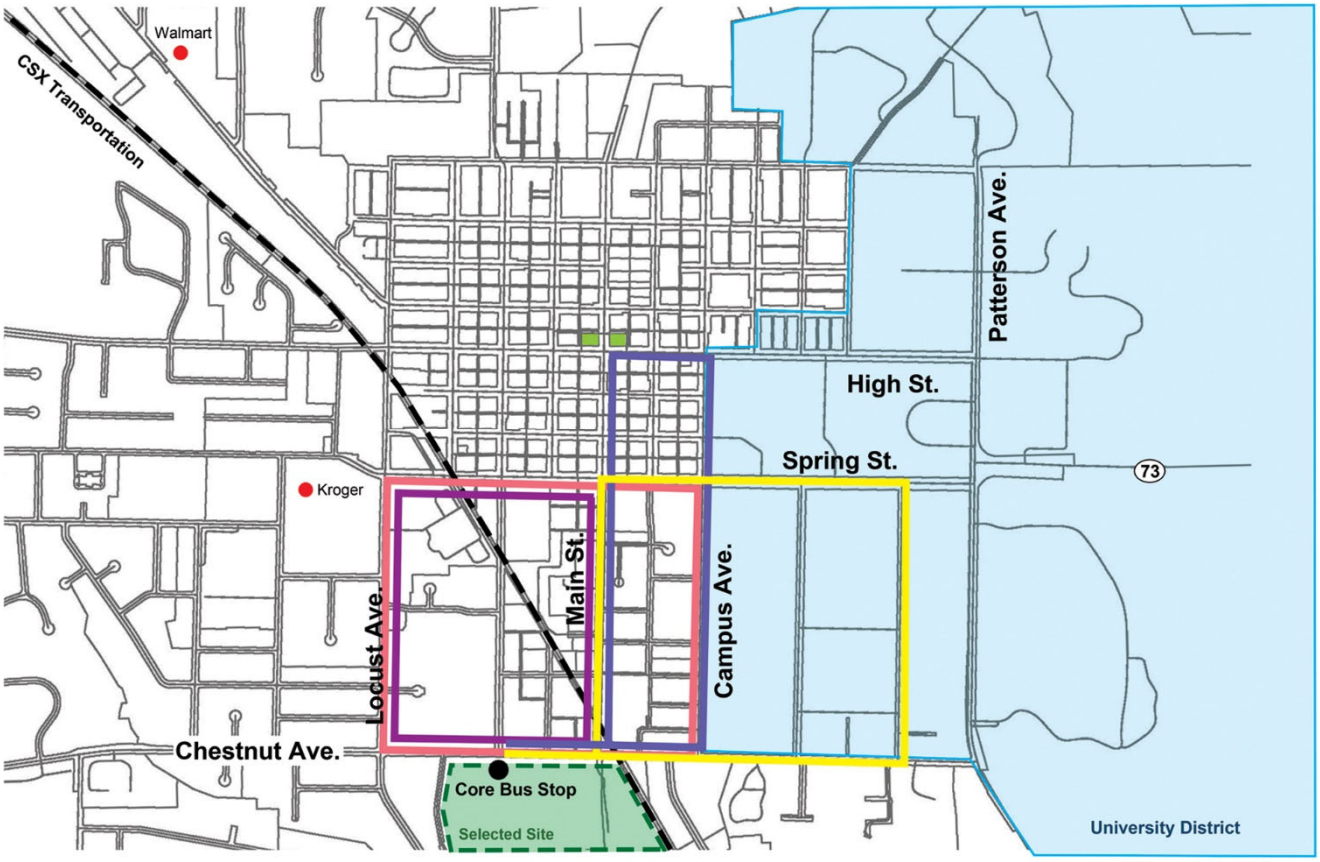
Comfort Inn

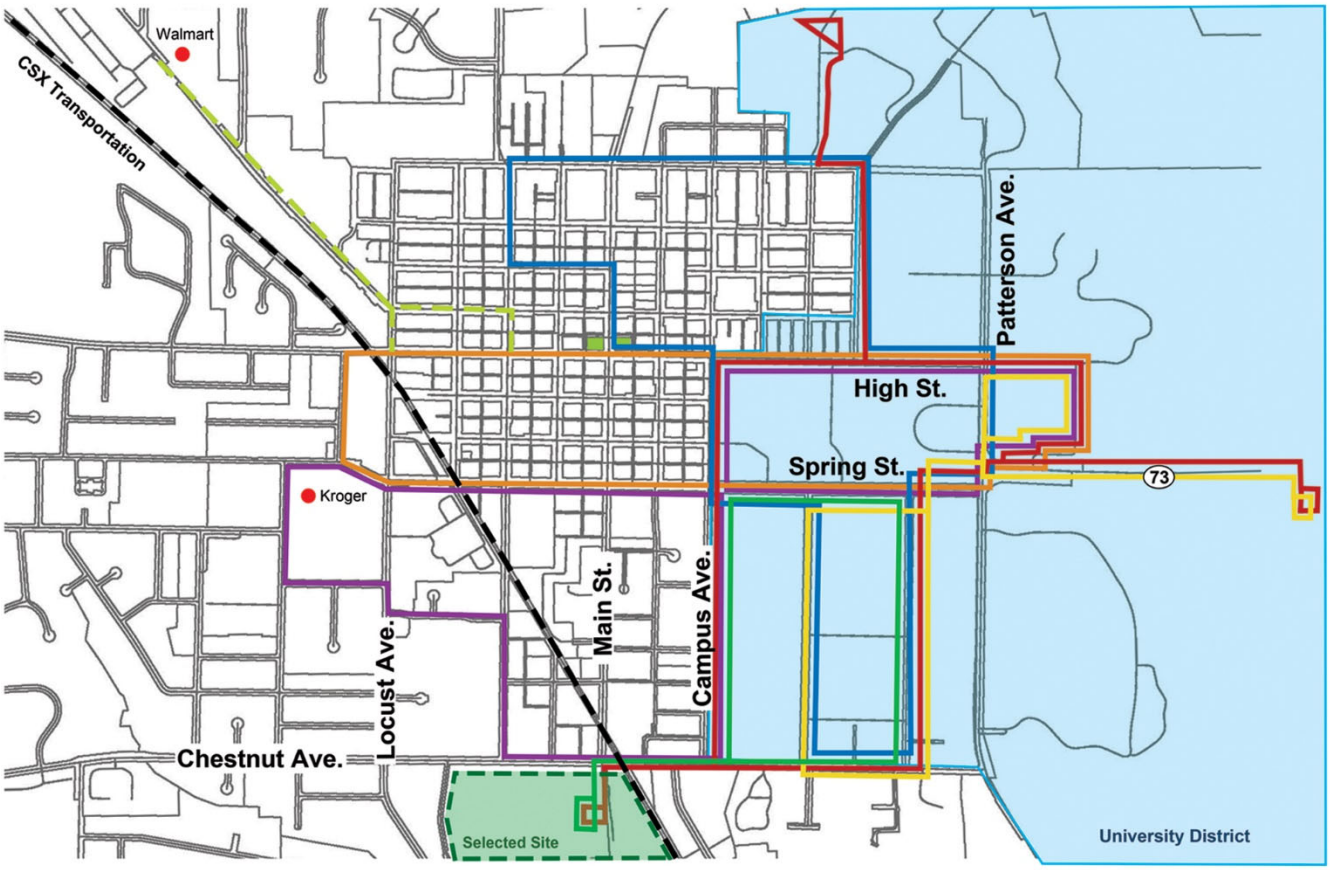
Butler Inn

Marcum

New Design

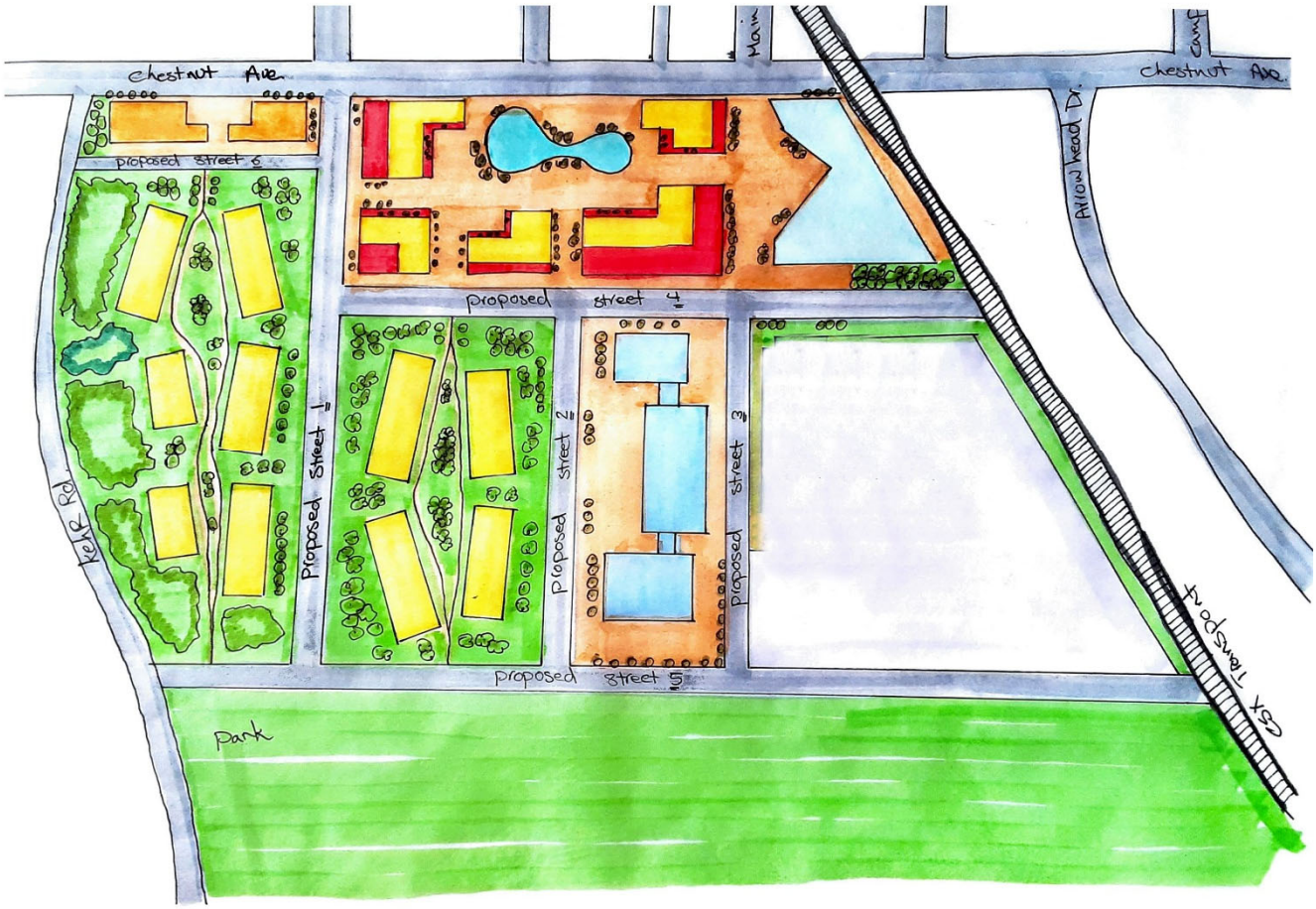
Suggested Bus Routes, Oxford, Ohio

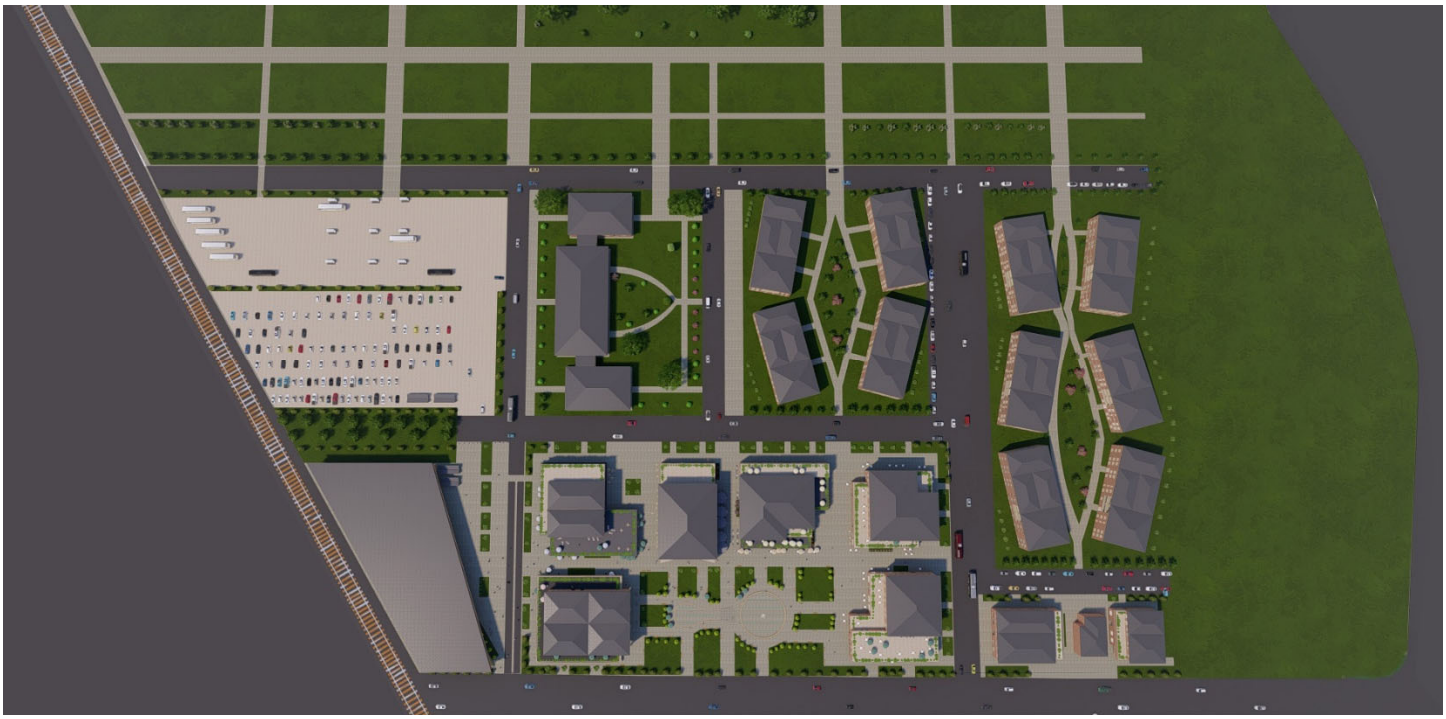




New Design

Oxford, Ohio



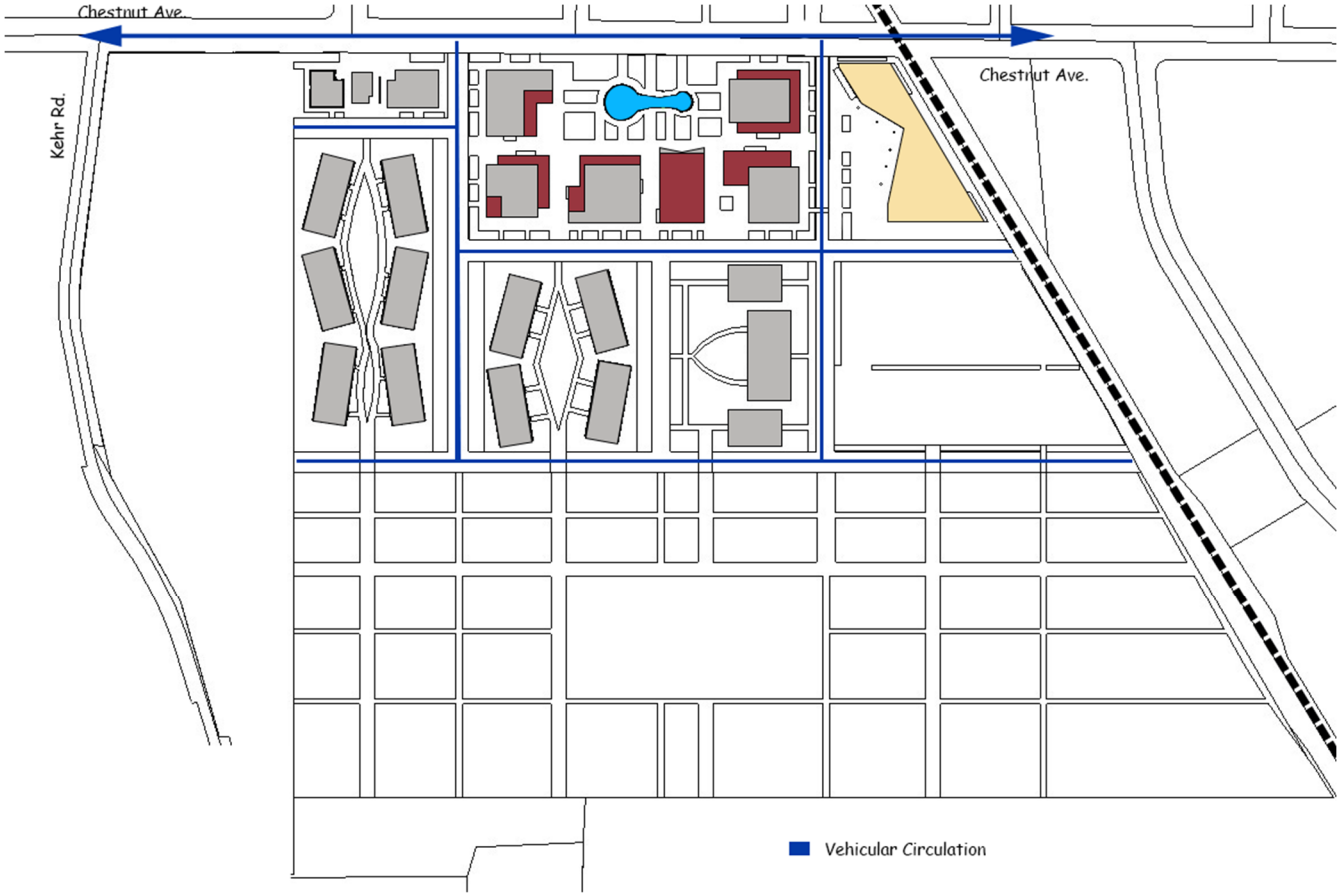


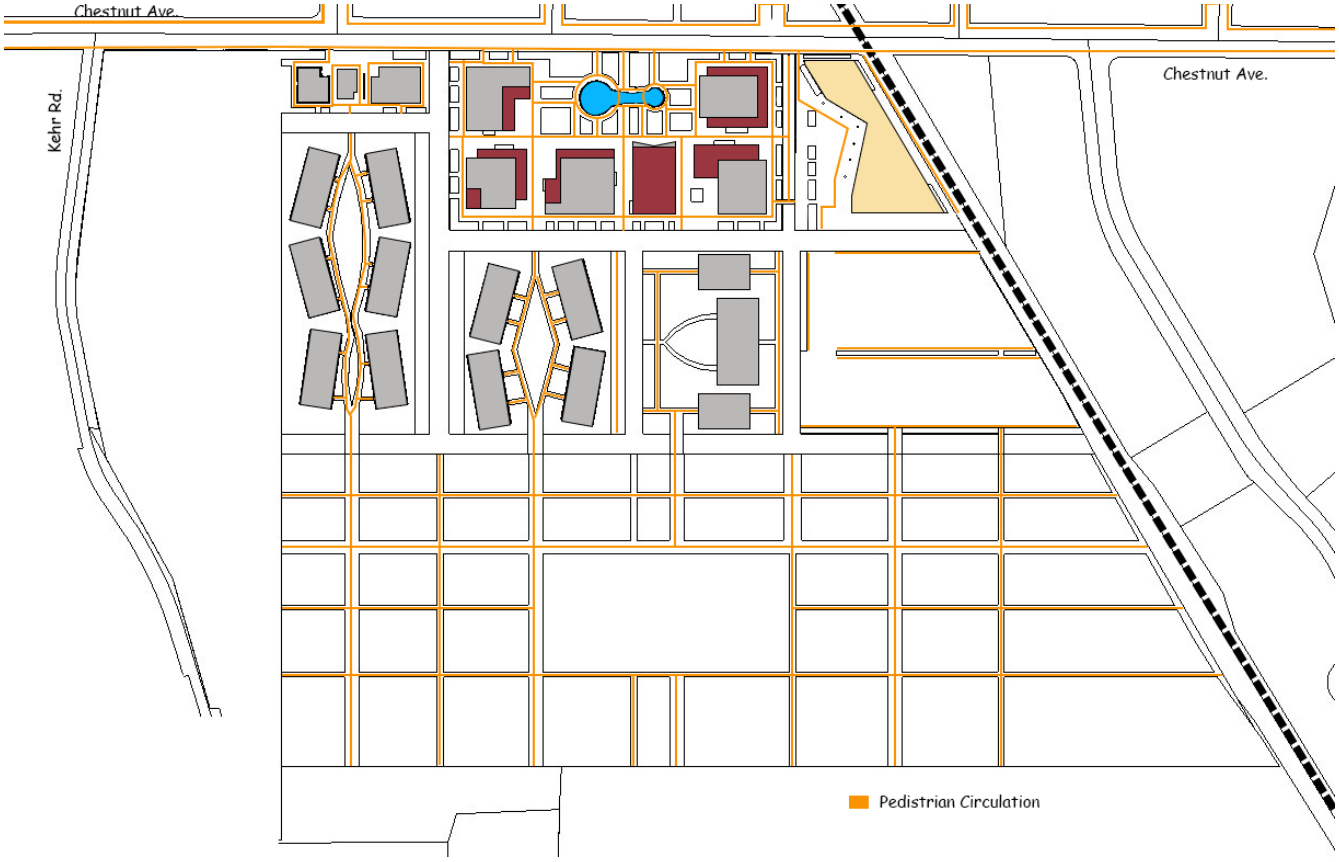
New Design

Oxford, Ohio

New Design

Circulation, Oxford, Ohio



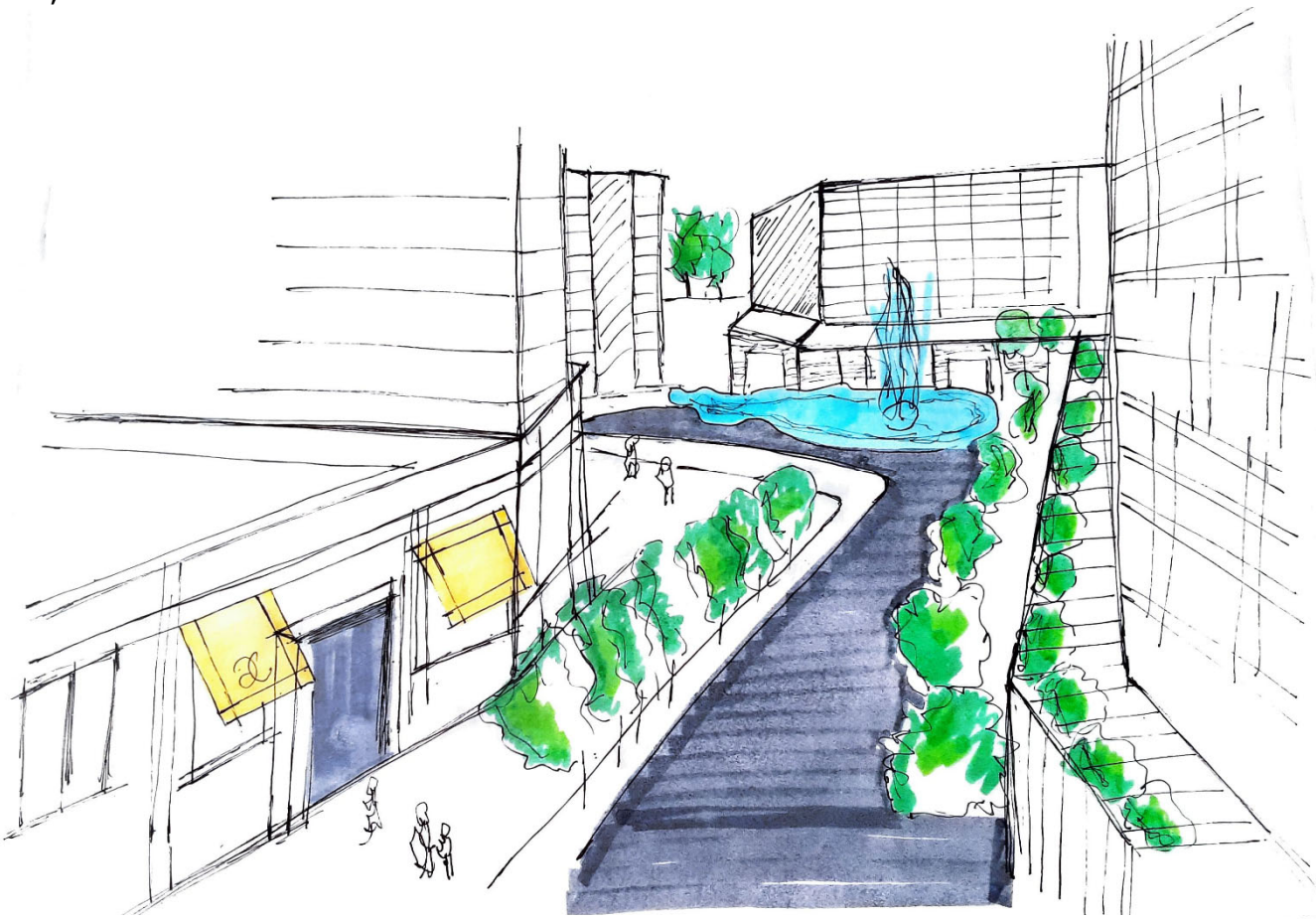


New Design

Oxford, Ohio

New Design

Oxford, Ohio



New Design

Oxford, Ohio

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