

# **The Future of 1950's Suburbia: Why We Need a Suburban Architectural Reformation**

Submitted in partial fulfilment of the requirements for the degree of Master of Architecture at Lawrence Technological University. [2024]

**Megan Kaminski**

## **Thesis Committee:**

Scott Shall, Thesis Committee Chair

Anirban Adhya, PhD, Thesis Committee Member

Eric Ward, Associate Department Chair, Thesis Committee Member



Figure 1.1: Aerial view of Levittown, USA, 1958. Source: [www.life.com](http://www.life.com). Photographer: Joseph Scherschel. Copyright: Time Inc.

## The Future of 1950's Suburbia: Understanding Suburban Dependencies and How They Can be Reimagined

Megan Kaminski

Lawrence Technological University, Southfield, Michigan [2024]

**ABSTRACT:** The original 1950's boom of suburbanization was a result of a range of factors, such as a need for increased housing for returning veterans as well as to support a growing automotive industry. This led to the creation of what is currently interpreted for 'suburbs' to be: repeating residential developments that emphasize automobile use, single-use zoning and private ownership. Additionally, this phenomenon has sparked the continuation of what is now known as 'suburban sprawl' in which suburbs are no longer merely defined as the 'residential outskirts' of a city but rather as the ever-growing prolongation of them. However, these original 'purposes' of the suburbs in conjunction with their exponential sprawl now exacerbates the growing issue of *suburban decay* on a national scale. As individuals- especially higher income individuals- continue to sprawl outwards, extending the 'outskirt' line farther out, the aging progenitor suburbs of the 1950's are increasingly at risk of decay as redevelopment opportunities similarly move away. Not only this, but since these suburbs were initially designed for higher to middle income individuals, suburbs remain critically dependent on automobiles, single-use zoning and privatization and thus are unable to adapt as new socioeconomic shifts further demonstrate how these suburbs are built impractically and unethically. As such, current Suburban Renewal efforts face unique difficulties in suburbs as existing conditions and regulations continue to limit suburbs from adapting and changing from their original, restrictive, and now deteriorating states. In response to this emergent crisis, suburbs and especially the original 1950's suburbs are in desperate need of a new Architectural Reformation that takes a phased approach.

To test this claim, this thesis proposes to reimagine a 'reaction-based' framework of applying suburban renewal strategies on a larger and more practical scale. To test this claim, a suburban site outside of Detroit will be used as a case study and a basis for existing conditions, code, and public engagement.

**KEYWORDS:** Suburban Renewal; Suburban Decay; 1950's Suburbs; Adaptive Reuse

**ACKNOWLEDGEMENTS:** Scott Shall, Eric Ward, Anirban Adhya

## 0.1. TABLE OF CONTENTS

<b>page 6</b>	<b>Part 01: THE PAST AND EMERGING FUTURE OF SUBURBIA</b>
page 2	1.1. Suburban Origins
page 5	1.2. Suburban Sprawl & Decay
page 5	1.3. Socioeconomic Shifts in the Suburbs
page 5	1.4. The Suburbs are Changing but aren't Built to Change
<b>page 8</b>	<b>Part 02: SUBURBAN RENEWAL APPROACHES: A REFORMATION TIMELINE</b>
page 8	2.1. Current Suburban Renewal Approaches
	2.2a. 'House' Level
	2.2b. 'Block' Level
	2.2c. 'Neighborhood' Level
page 11	2.2. Reformation Timeline:
<b>page 12</b>	<b>Part 03: REIMAGINING THE SUBURBS IN PHASES</b>
page 12	3.1. Design Investigation and Parameters
page 13	3.1a. Site Selection
page 14	3.2. Reimagining the Suburbs Using Suburban Block Typologies
	3.3a. Edge Condition
	3.3b. Internal Condition
	3.3c. 'Unique' Condition
page 15	3.3. Suburban Reformation Timeline
<b>page 15</b>	<b>Part 04: FINDINGS</b>
page 15	4.1. Metrics of Success
page 15	4.2. The Reaction Mechanism: Dependency to Independency
page 15	4.3. Reaction 1: Car Centricity to Human Centricity
page 15	4.4. Reaction 2: Single Use to Mixed Use
page 16	4.5. Reaction 3: Private to Public Use
<b>page 16</b>	<b>Appendix A: Literature Review</b>
<b>page 18</b>	<b>Appendix B: Precedent Analysis</b>

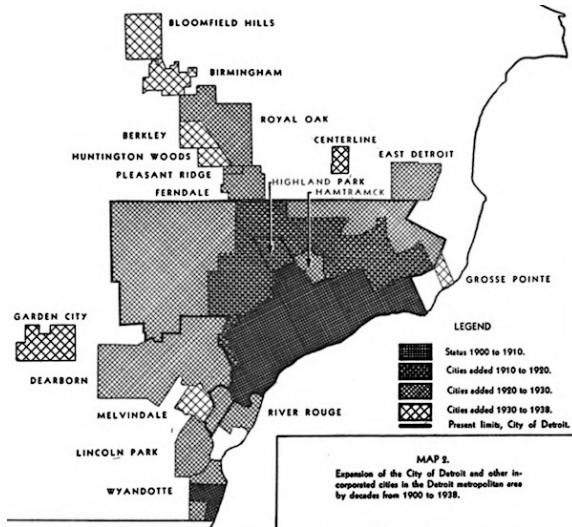
## 0.2. LIST OF FIGURES AND IMAGES

page 3	1.1. Graphic on the future of Suburbia. Source: (Image by Author)
page 6	1.2. The expansion of Detroit and nearby municipalities, 1910-1938: (Hathi Trust)
page 6	1.3. <i>Detroit Free Press</i> , Jul. 12 <sup>th</sup> , 1925. (freep.newspapers.com)
page 6	1.4. <i>Detroit Free Press</i> , Jul. 12 <sup>th</sup> , 1925. (freep.newspapers.com)
page 7	1.5. Race ethnic profiles of primary cities and suburbs (Brookings Metro)
page 7	1.6. Detroit Case Study: Population and income increasingly moving away from cities and 1950's suburbs. Source: (Image by Author)
page 7	1.7. Diagram of Why Suburbs are Inequitable. Source: (Image by Author)
page 9	2.1. Suburban Renewal Approaches. Source: (Image By author)
page 9	2.2. Diagram of an 'offset' house: (Other Architects)
page 9	2.3. Drawing of a house design built for an 'inventor' occupation: (Artur Nesterenko)
page 9	2.4. Axonometric drawing of the modular 'MODPOD' addition that revitalizes individual house infrastructure: (ShOp Architects)
page 10	2.4. Rendering of a suburban street with new setbacks and 'veils' on the houses in order to create private/public space: (Sibling Architecture)
page 10	2.5. Axonometric drawing showing the layout of a Bungalow court: (Congress for the New Urbanism)
page 10	2.6. Rendering of raised platforms being used as a suburban renewal strategy: (Other Architects)
page 10	2.7. Rendering of shared parking in a redeveloped community: (Karres en Brands)
page 11	2.8. Diagram showing a self-reliant neighborhood: (Subotica, Multiple owners)
page 11	2.9. Combining Suburban Renewal Approaches. Source: (Image by Author)
page 11	2.10. Construction Timeline for Phased Suburban Renewal Approach. Source: (Image by Author)
Page 12	2.11 Top: Yonder Cider Bar. Source: (seattlerefin)
Page 12	2.12 Bottom: Front Yard Gardens. Source: (OrlandoWeekly)
Page 12	2.13: Suburban Dependencies and what Suburban Renewal Approaches are Blocked By Them Source: (Image by Author)
Page 12	2.14: Combining Suburban Renewal Approaches. Source: (Image by Author)
Page 12	2.15: New Approach Combinations. Source: (Image by Author)
Page 12	2.16: Construction Timeline for Phased Suburban Renewal Approach. Source: (Image by Author)
page 12	3.1. Zoning Map of Garden City. Source: (McKenna & Associates)
page 13	3.2. Site Selection and Existing Assets. Source: (Image by Author)
Page 15	3.3: Existing Block Typologies and Their Conditions. Source: (Image by Author)
Page 17	3.4: Existing Conditions and Reactions. Source: (Image by Author)
Page 17	4.1: Site Selection and Existing Assets. Source: (Image by Author)
Page 18	4.2: Industries with ioghest number of Remote Workers. Source: (Truelist)
Page 18	4.3: Site Selection and Existing Assets. Source: (Image by Author)
Page 19	4.4: Kensington Market. Source: <a href="https://www.aprilandsummer.com/things-to-do-in-kensington-market-toronto/">https://www.aprilandsummer.com/things-to-do-in-kensington-market-toronto/</a>
Page 19	4.5: Collage Image of a Suburban Plaza, Front yard businesses and gardens. Source: (Image by Author)
Page 20	4.6: Site Selection and Existing Assets. Source: (Image by Author)

## Part 01: THE PAST AND EMERGING FUTURE OF SUBURBIA

### 1.1 Suburban Origins – A Detroit Case Study

The 'Suburbs' are home to a majority of Americans- about 55%. For many, the idea of the suburbs (defined as low-density, single-family residential developments) was sparked by the Suburbanization boom in the 1950's by Levittown. But, although this time undeniably saw the majority of suburban growth, there was actually another suburban boom that predates the 1950's. The city of Detroit-which this thesis uses as an initial case study- is a good example of this. Detroit was a suburban city long before the 1950's, with its first 'suburbanization boom' happening in the 1920's as can be seen in Figure 1.2 below, with multiple annexations that expanded the city into becoming a predominantly 'suburban' city itself.



This was a result of several factors, such as a growing automotive industry and a desire for people working in the city to be able to live with their families outside of the congestion and pollution of the city itself. This desire to be able to work in the city but then live closer to the 'countryside' sparked the beginnings of the idea of a 'commuter city', allowing people to experience what was viewed as the 'best of both worlds'. With the support of the automotive industry and a developing infrastructure to support it, such as the widening of Woodward Avenue in 1922 to support more commuter traffic, began a lot of the trends that continued on a national level in the 1950's. In this way, Detroit makes an excellent case study for suburbia as the city has already undergone multiple suburban expansions. These expansions were largely supported by the homeowners within these suburbs who elected to encourage the annexation of their suburbs into the city, largely in part so that these suburbs could enjoy the municipal benefits of being a part of the city while still maintaining their 'suburban' identities.

Figure 1.2: The expansion of Detroit and nearby municipalities, 1910-1938: (Hathi Trust)

However, the over-annexation of these suburbs and the strain that was then caused by the city needing to support them all municipally eventually led to a decline in the city's capabilities overall.



Figure 1.3: Detroit Free Press, Jul. 12<sup>th</sup>, 1925. (freep.newspapers.com)

### 1.2. A History of Suburban Sprawl & Then Decay

Much like the rest of the Nation, Detroit similarly saw a second suburbanization boom in the 1950's as proven by the majority of single-family detached housing in Detroit being built within that time frame of 1950-1959. These multiple expansions also reveal a concerning drawback to suburban sprawl: suburban decay. Detroit in particular has experienced many of these ebb and flow conditions, which can even be seen as far back as the initial 1920's suburbanization boom.



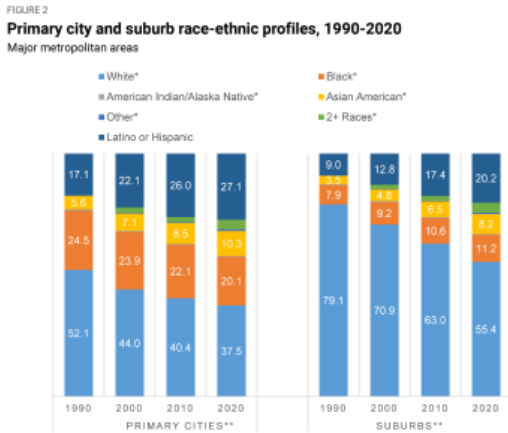
Figure 1.4: Detroit Free Press, Jul. 12<sup>th</sup>, 1925. (freep.newspapers.com)

As the majority population of Detroit began to move to the suburbs, it also reflected a shift in investment values. More focus was being placed into these new suburbs, advertising for them, than the original 'city center' of Detroit. For many residents, they described it as 'The rotten heart of the city'. (Refer to figure 1.3)

This historic example also demonstrates how the sprawl or spreading out of infrastructure and utilities actually serves to make suburbs more expensive and unsustainable in the long run. Looking at Figure 1.4, One historic headline announced Detroit 'Broke' due to the "reckless outlays" of the municipalities which had been advertised and celebrated in the initial phases of suburban expansion and annexation.

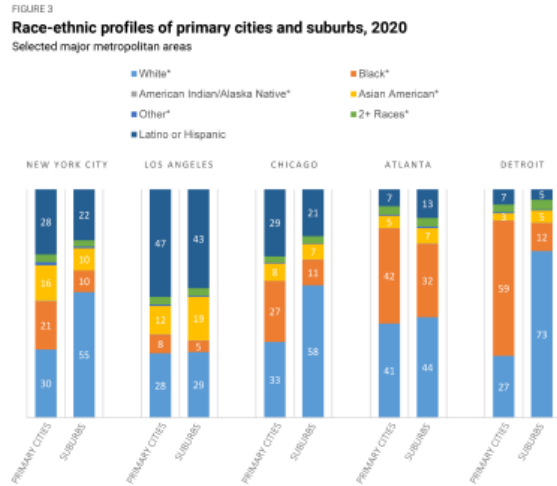
### 1.3. Socioeconomic Shifts in the Suburbs

Yet, the historic example of Detroit and the over-expansion of the suburbs and their costs also contains another crucial influencer: demographics. Suburbs have historically been built in a segregative manner, using redlining (refusing to give home loans to certain demographics based on their race) and other contractual techniques in order to limit who could purchase housing within the suburbs. Detroit, too, is an important representative of this issue. One of the major population shifts has been coined as the term 'White Flight', the effects of which can still be seen today as shown below on the far right in Figure 1.5:



Source: William H. Frey analysis of 1990-2020 U.S. decennial censuses.  
\*Non-Hispanic members of group; Asian American includes persons identified as Asian, Native Hawaiian, and Other Pacific Islander; 1990 census did not identify 2+ race individuals.  
\*\*Primary cities and suburbs of 56 metropolitan areas with populations exceeding 1 million in 2020.  
Note: Primary cities are defined by Brookings Metro and include up to three cities in metropolitan areas with populations exceeding 100,000. Suburbs are defined as the metropolitan area lying outside of primary cities.

Brookings Metro



Source: William H. Frey analysis of 2020 U.S. decennial censuses.  
\*Non-Hispanic members of group; Asian American includes persons identified as Asian, Native Hawaiian, and Other Pacific Islander.

Brookings Metro

Figure 1.5: Race Ethnic profiles of primary cities and suburbs (Brookings Metro)

So, not only are these suburbs originally built in a restrictive manner (restrictive towards certain demographics, as well as restrictive in how much it costs to live in a suburb due to the high utility costs that are involved). This then becomes an imperative issue as the trend of High-income individuals, especially high-income large families are increasingly moving outwards and contributing to suburban sprawl as seen in Figure 1.6. In contrast, low-income and lower-income large families are located primarily in cities or outer-city suburbs, with a growing trend in moving farther out as well to 1950's and middle ring suburbs.

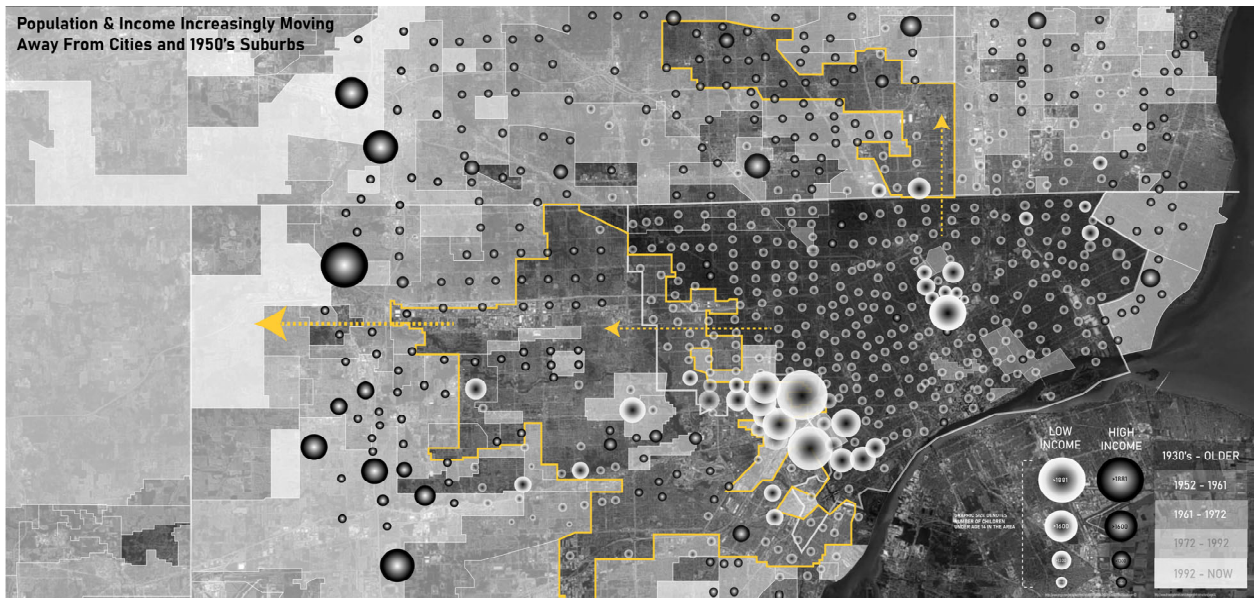
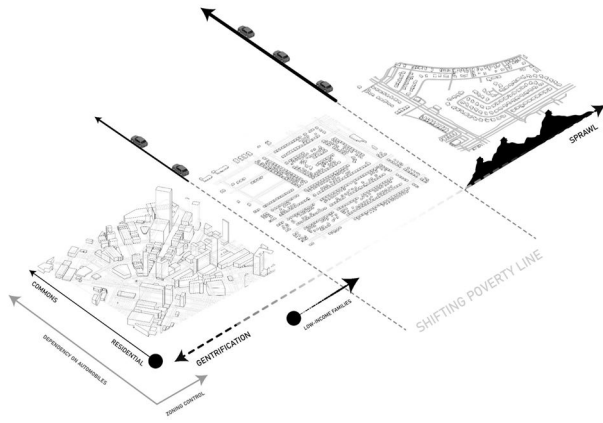


Figure 1.6: Detroit Case Study: Population and income increasingly moving away from cities and 1950's suburbs. Source: (Image by Author)

These population shifts then pose a unique social and economic shift in suburbs that has so far been largely unprecedented. Yet, due to the segregative nature in which suburbs were first built, this then points to an urgent emerging issue that suburbs are not only increasingly prone to decay but are not well-equipped to socially or economically support this change.

As these socioeconomic shifts continue, these suburbs become less liveable due to the fact that suburbs themselves are predicated on high utility and infrastructure costs and the 'suburban' ideals of automobile use, single-use zoning and privatization. These existing elements within suburbs may have functioned well for the majority middle-class Caucasian residents that initially dominated the suburbs in the 1950's, but it is becoming more evident that these elements are inherently restrictive in nature, posing an obstacle for all kinds of people-socially or economically- to become suburban residents.



As seen in Figure 1.7, socioeconomic shifts are occurring in suburbs that are built inequitably and only consist to be inequitable. This is because suburbs are heavily dependent on automobile infrastructure, as well as restrictive zoning and private ownership/property rights laws such as homeowners associations and setback/building height restrictions. These dependencies are an issue today because although these suburbs are changing, they are still structured and regulated in a way that disallows residents from trying to achieve change.

**Figure 1.7:** Diagram of How Suburbs are Inequitable and Unsustainable. Source: (Image by Author)

#### 1.4. The Suburban Renewal “Reaction Mechanism”

This desperate need for change within the suburbs has been marked by new strategies of development: Suburban Renewal. Much like Urban renewal, which sought to renovate and ‘renew’ declining city centers- suburban renewal similarly seeks to renew and improve the conditions of existing suburbs. Galina Tachieva’s ‘Sprawl Repair Manual’ is a key demonstration of this method, but it is also a good demonstration of how suburban renewal methods are often blocked by existing regulations and suburban conditions from actually transpiring. Similar to the aforementioned issues of automobile dependency, single-use zoning and privatization, Tachieva also points out that these items are especially a concern for renewal efforts. For example, “Excessive requirements for on-site parking reduce the potential for increasing density and varying building types” (pg. 10) This initial regulatory barrier then sets up a chain reaction of barriers towards suburban renewal efforts- automobile dependency, or parking restrictions in this case- then directly limits the density and supplication of mixed-use buildings. This then obstructs the possibility of adding any kind of mixed-use into single-use dominated suburbs, which by correlation of being unable to affect zoning types then disallows any new distinction of public or natural spaces within the suburbs. In this way, regulatory restrictions have created an unavoidable ‘reaction mechanism’ that must now be navigated in order to truly begin renewal efforts in earnest.

Therefore, as suburbs are increasingly evolving it is crucial that a new suburban renewal strategy that is formatted less like a redevelopment and more like a *reaction mechanism* must be used in order to hierarchically solve for existing conditions and regulations that currently block the expansion of many suburban renewal efforts to date.

## Part 02: SUBURBAN RENEWAL APPROACHES: A REFORMATION TIMELINE

### 2.1. Current Suburban Renewal Approaches: Achievability?

In order to understand current suburban renewal approaches, Figure 2.1 shows nine case studies were conducted at varying levels of suburban development: House level, Block level, and neighbourhood level as suggested by Tachieva in order to implement renewal efforts at all urban scales. Additionally, the guidelines used to assess these case studies looks to understand the current approaches towards suburban renewal, the issues that they address, the existing conditions that are being reused, and lastly, what current ‘blocks’ or restrictions there are on these strategies. In understanding these case studies and their individual approaches towards renewal, it can be better understood how suburban renewal efforts are currently struggling to become popularized in the field of architecture. This exercise then serves to reveal these constraints and begins to illuminate how to move forward based off of these constraints.

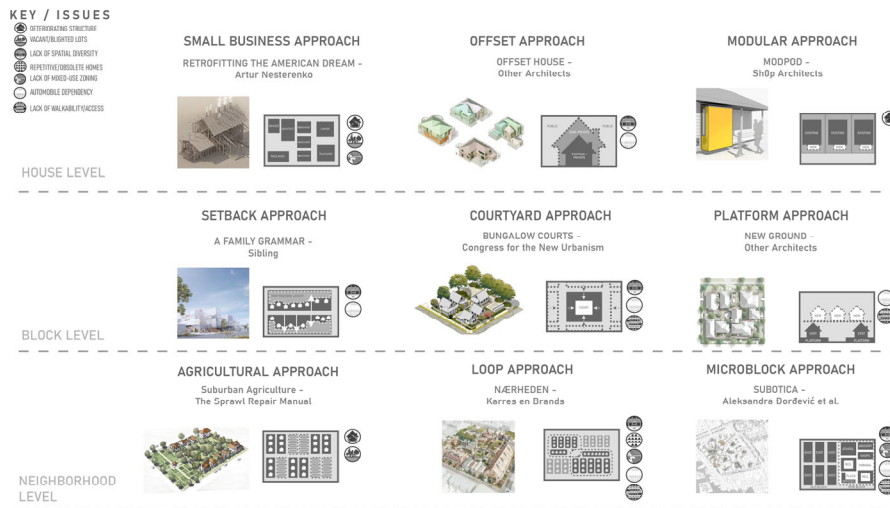
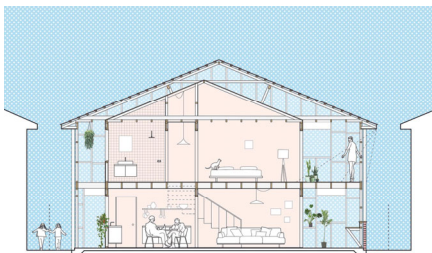


Figure 2.1: Different Suburban Renewal Approaches. Source: (Image by Author)

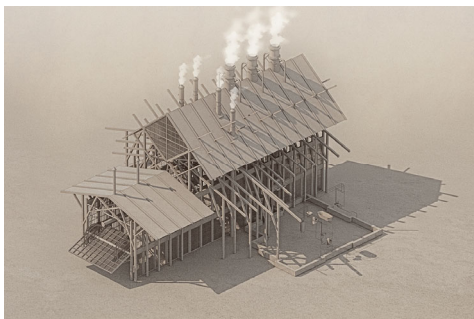
### 2.1a. House Level:



Understanding Suburban Renewal approaches on a 'house' level is integral to understanding a critical facet of suburbs: privatization. This ideal is crucial in suburbs as although there is a growing desire for middle-housing and other solutions, for many residents the appeal of living in the suburbs still remains as privatized housing. As such, It's crucial to learn what approaches there are that strike a balance between the existing but overemphasized private space and newly desired public spaces.

Figure 2.2: Diagram of an 'offset' house: (Other Architects)

#### Offset House: Other Architects "Offset Approach"



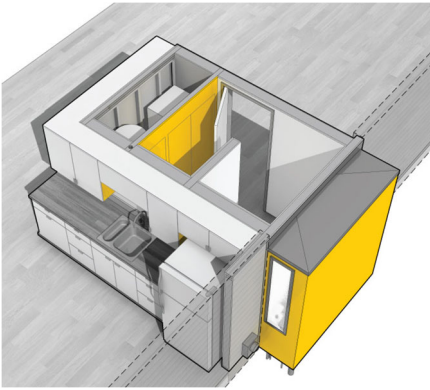
Other Architect's "Offset House" is an exhibition that had a particular interest in the existing framing of suburban homes. Their idea was that "by reclaiming the frame for architecture, we hope to reframe our relationship to the suburbs." In this way, the design 'offsets' a new volume or frame to encapsulate the existing house. By doing this, the spatial setup of the existing home gains another layer, removing the need for fences on the exterior which allows for backyard space from other homes to be consolidated into more commons or semi-public space for the neighborhood. The neighborhood then becomes reoriented so that this new space has more focus than the existing roads. Another interesting aspect of this project is the discussion of doing suburban renewal 'by stealth'. The emphasis is to encourage suburban renewal by means that do not require demolition or relocation.

Figure 2.3: Drawing of a house design built for an 'inventor' occupation: (Artur Nesterenko)

#### Retrofitting the American Dream: Artur Nesterenko "Small Business Approach"

"Retrofitting the American Dream" is a project proposal by award-winning designer Artur Nesterenko that reimagines the possibilities of reusing materials from abandoned or underused homes in order to create new ones. This project was inspired by the 2007 market crash that left many 1950's suburbs underused, thus creating a void in usable housing there. Nesterenko's interpretation was to imagine 'clients' like inventors, bakers, or astronomers, and to reimagine the allocation of materials from underused homes in order to create specifically tailored homes for these clients or 'occupations'. The reuse of structure and materials for the creation of homes that are meant not just for living but for occupation is an interesting take on suburban renewal as many 1950's suburban homes and neighborhoods are zoned only for residential- the idea of reusing or recreating homes specifically towards types of occupations is another

interesting take on how suburbs can confront lack of diverse zoning while inspiring more development in small business within suburban developments at large.



**Figure 2.4:** Axonometric drawing of the modular 'MODPOD' addition that revitalizes individual house infrastructure: (ShOp Architects)

### **MODPOD: ShOp Architects**

#### *"Modular Approach"*

The "ModPod" by ShOp Architects is a project that focuses on revitalizing suburban/urban developments that have begun to age. Their approach was to understand what the 'heart' of the home was in order to design a module that can be inserted or "transplanted" into the aging home. This "heart module" includes critical amenities such as a modernized kitchen, bathroom, as well as other electrical, heating & cooling, and daylighting systems that altogether work to give the home new life. In addition to this, the module 'sticks out' of the original home, not only providing daylighting and a connection to exterior municipalities but also as a design choice. These protruding facades can then be freshly decorated or customized as a porch or other useful possibilities as another way to revitalize the aging as well as existing infrastructure of 1950's suburban neighborhoods.

### **2.1b. Block Level:**

The block level then is a level that is key in understanding overall connectivity within the suburban fabric. These blocks represent the literal building blocks of the suburbs, defining not only the boundaries of private residential lots but also defining infrastructural, transport, and social needs.



**Figure 2.5:** Rendering of a suburban street with new setbacks and 'veils' on the houses in order to create private/public space: (Sibling Architecture)

### **FamilyGrammar: Sibling Architecture**

#### *"Setback Approach"*

FamilyGrammar is a research/competition project by SiblingArchitecture, situated in Australia but designed for international use in terms of small lot suburbs. The project proposes the creation of a 3-unit apartment typology or 'module' that would be adjustable to existing residential blocks. This module would then plug into the existing layout of a block, taking into account the existing setbacks and placements of existing buildings- and using these setbacks, backyards, side yards, etc. to guide the design of the new massing. In addition to using a 'veil' to surround buildings out as well as a 'suburban fence', the design works to adapt to existing conditions while creating new spatial typologies out of existing suburban architectural types, such as the yard, in order to create a new block layout that is denser, more walkable, and has a specific consideration to the layout of private, semi-private, to semi-public and then to fully public spaces.



**Figure 2.6:**Axonometric drawing showing the layout of a Bungalow court: (Congress for the New Urbanism)

**Bungalow Courts: Congress for the New Urbanism**

*“Courtyard Approach”*

The Bungalow Court or ‘Cottage Court’ is actually an existing housing typology in the U.S but hasn’t been used frequently since before even the 1950’s. In an analysis of Daniel Parolek’s “Missing Middle Housing”, this article by Opticos Design suggests that these bungalow courts are an integral aspect of a neighborhood. While the housing type itself doesn’t change, the layout does- creating an internal court that focuses away from the road to an internal, communal space. The article further points out how this layout is advantageous to new families or most importantly, the aging primary demographic of existing 1950’s suburbs- the elderly. These courts maintain a ‘secular’ feel while still providing a stronger communal layout that doesn’t sacrifice existing aspects of suburbs, such as the style of housing or access to vehicles.



**Figure 2.7:**Rendering of raised platforms being used as a suburban renewal strategy: (Other Architects)

**Newground: Other Architects**

*“Platform Approach”*

New Ground is another design proposal by Other Architects. This project tackles suburban renewal by doubling the ground plane, creating a separation between fully public space and the interior neighborhood. The existing homes would remain with the new ‘podium’ extending upwards as garden space. The new second level atop the existing structures would then become new units or additions to these homes, and the connective spaces between them would become gardens or communal space.

**2.1c. Neighborhood Level:**

Finally, the neighbourhood level works to finalize the boundaries of a functional, self-reliant neighbourhood where existing suburbs are continuous. In conjunction with suburban (building) blocks, the overarching boundaries of a neighbourhood can be defined as the major commercial roads that would be unchangeable and also uncrossable on a pedestrian level. From these case studies, it can be understood what approaches can be taken to encourage the formation of ‘completed’ neighborhoods.



**Figure 2.8:**Rendering of shared parking in a redeveloped community: (Karres en Brands)

## Nærheden: Karres en Brands

### “Loop Approach”

This project was designed by karres en brands as for new neighborhood design in Denmark. Critical features of the project include creating a block with a highly internalized communal focus, having a designated parking garage in each block typology so that the internal walkways of the neighborhood are mostly car-free. Additionally, the project focuses on creating a diversity of housing types to create an interesting living space that also is more sustainable. Lastly, the design uses different types of ‘loops’ to connect the neighborhoods, most notably positing that there must be a recreational/green loop surrounding the block typology as well as a water drainage loop.

## Sprawl Repair Manual: Galina Tachieva

### “Agricultural Approach”

Galina Tachieva’s “The Sprawl Repair Manual” is a book that discusses multiple remediation techniques for sprawl on different scales of suburban development. A majority of these proposed solutions are aimed at maintaining existing infrastructure and improving it by densifying the suburbs, improving pedestrian and communal connectivity by creating more plazas, bike lanes, etc, reducing road widths, among other methods. The two images above show some very interesting takes- one, that the positioning of parking should be situated on the main thoroughfare of a designated block typology. Second, that another solution to suburban renewal could be de-densification- allowing suburban lots to become agricultural as many of them once were. This can help with water drainage in the suburbs as well as providing improved local food development that could, in the future, help with local food small business production or farmer’s markets.

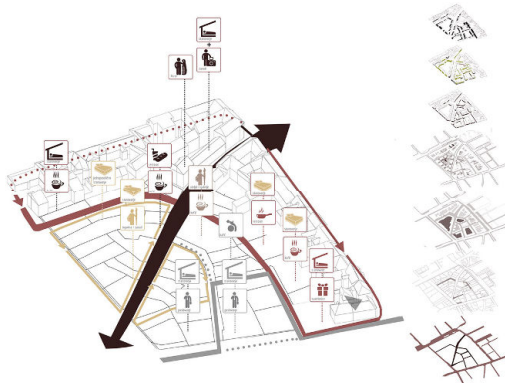


Figure 2.9: Diagram showing a self-reliant neighborhood: (Subotica, Multiple owners)

## Subotica: Multiple Owners

### “Microblock Approach”

This was a design project to re-envision the city of Subotica in Serbia. Some unique attributes of the project was the way in which the team broke down a mega-block neighborhood layout into smaller, concentrated micro-blocks. Interestingly, the project sought to ‘zone’ aspects of these blocks to meet the needs of everyday living- including commercial, educational, and other aspects so that the created neighborhood was more self-reliant within itself as well as being inclusive to all demographics/users. Interestingly, it was also a focus to do this in order to create better communal connection within the neighborhood so as to fight gentrification as well. All parts of the neighborhood were given a ‘zone’ or importance- even historical zones were crucial, in what the project describes as the creation of a neighborhood that is designed to develop and change over time, creating a suburban fabric.

## 2.2. Suburban Renewal Roadblocks

However, many of these suburban renewal approaches face difficulty when addressing many of the current restrictions within suburbs. In Figure 2.10, this paper denotes these restrictions as ‘suburban dependencies’ and likens them to a chain because these restrictions feed off of and are related to one another. For example, Automobiles directly relate to zoning restrictions, as larger, displaced zoning requires automobile transportation. This is because there is largely a lack of public transportation and other public networks, which relates to the ‘privatization’ dependency, in which the suburbs are predominately limited by an over-focus on private ownership, private transport, etc. which then further limits what steps suburbs can take towards suburban renewal.



Figure 2.10: The Suburban Dependency Chain. Source: (Image by Author)

**YONDER CIDER BAR: (Single-Use)**

- Small business started in a Garage during COVID
- Received an enormous following
- A single "community member" requested the business to be shut down as a cause of heightened foot/vehicle traffic and on infringing on zoning laws
- The bar was temporarily closed, but then reopened thanks to 2,700 signatures from the community



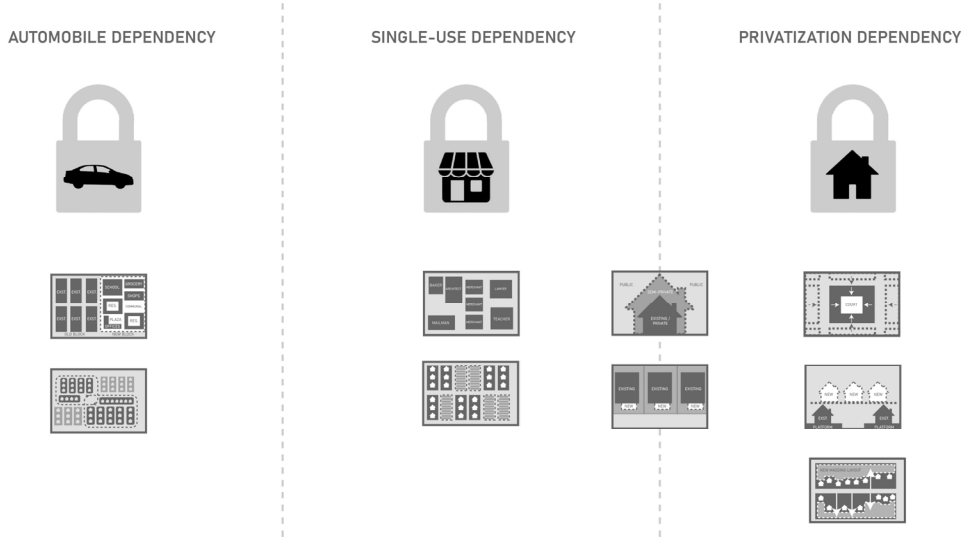
**FRONT YARD GARDENS: (Privatization)**

- An issue of property rights within current code regulations on what homeowners are allowed to do with their lawns
- The 1950's 'traditional american lawn' may no longer be the precedent, but homeowners who aren't in homeowners associations still face fines
- Gardeners continue to challenge outdated code practices in favor of more sustainable/productive land-use



**Figure 2.11 Top:** Yonder Cider Bar. Source: (seattlerefined)  
**Figure 2.12 Bottom:** Front Yard Gardens. Source: (OrlandoWeekly)

For example, Yonder Cider Bar in Seattle in Figure 2.11 opened up as a community response to COVID and the limits the community faced on being able to go out and socialize. The cider bar was opened out of the back of a garage and was temporarily shut down due to a neighbor's complaint on heightened foot and vehicle traffic. However, 2,700 signatures were signed and the bar was saved. This demonstrates an automobile dependency in which many small residential businesses face issues with traffic and parking in residential areas. There's also the Front Yard Garden battle, in Figure 2.12, which discusses many nationally-seen issues in which more and more suburban residents desire to use their front yard gardens via more productive land use, such as planting gardens. However, many property restrictions exist along with setback and building height restrictions that stifle resident's abilities to do what they want with their properties. This itself is a good example of how even though suburbs overemphasize private property and homeownership, they actually restrict a lot of what residents can do- even if it's for a proactive reason like gardening.



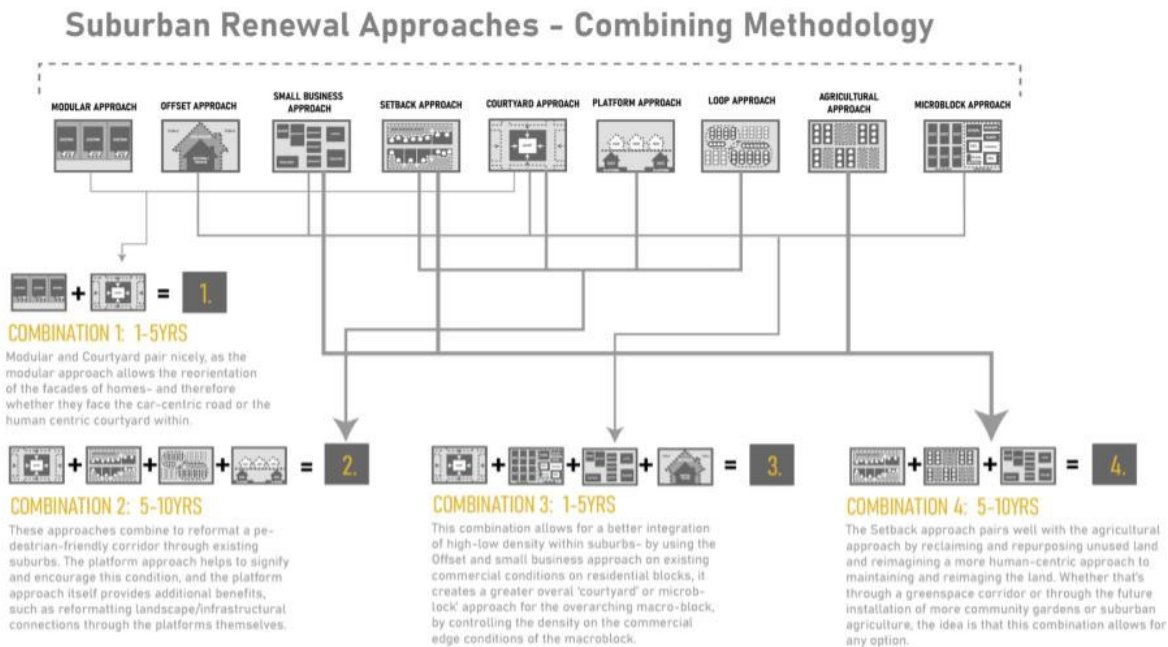
**Figure 2.13:** Suburban Dependencies and what Suburban Renewal Approaches are Blocked By Them Source: (Image by Author)

So, as can be seen in Figure 2.13, many of the suburban renewal approaches of today actually run into a lot of the limitations of these 'suburban dependencies'. As such, solutions to these roadblocks should be explored. Perhaps instead of working singularly, renewal approaches can work together in order to resolve the suburban dependency chain?

**2.2. Combination Approaches & Timeline**

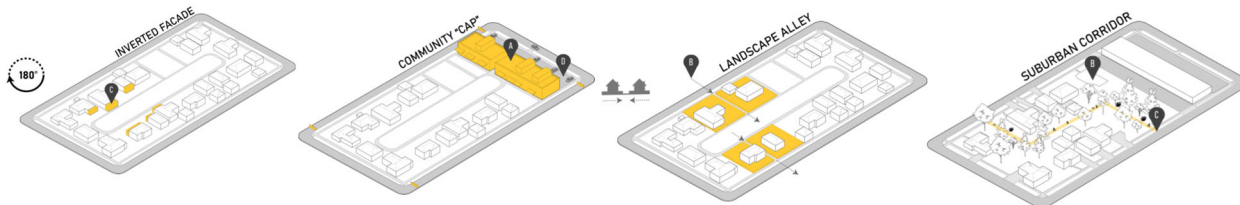
From researching these nine case studies, nine approaches can then be discerned. Originally, these approaches were designed to be implemented individually and within the confines of an existing suburban grid or block layout. But by understanding the constraints and limitations that each of these approaches possesses, individual application of these approaches can be 'combined' to create resolutions that tackle multiple suburban issues and even begin to resolve

restrictions that may limit the implementation of other approaches. In this way, suburban renewal strategies can be reimagined along a reactionary chain that is formatted to combat these renewal roadblocks as well as to make renewal a more practical, economical, and community-friendly transition.



**Figure 2.14:** Combining Suburban Renewal Approaches. Source: (Image by Author)

As can be seen in Figures 2.14 and 2.15, the 'combination' approaches were created from understanding the different approaches found within the case studies. Many of these case study examples had overlaps or linkages in their approaches, which can be explored here. For example, 'combination 1' explores a connection between the 'modular' and 'courtyard' approaches. This combined approach then illustrates that modularity could be used to fundamentally redirect the facades of existing suburban homes- in other words, this is an opportunity to reorient the typical suburban home. In this case, the 'courtyard' approach is inverting the 'front' of the home towards the internal center of the block, shifting the focus and the frontage that suburban homes give to road infrastructure. In this way, the combination 1 approach is both addressing current concerns of suburban decay such as aging infrastructure (modular approach) as well as increasing public spaces and pedestrian walkability (courtyard approach). Then, conducting a second layer of examination reveals that these different 'combination approaches' can then begin to be placed along a timeline to help 'unlock' the next renewal strategy and to combat against current code restrictions or other limitations.



**Figure 2.15:** New Approach Combinations. Source: (Image by Author)

This reactionary timeline is a crucial basis for reforming the suburbs as phased construction not only allows for the 'reactions' to be addressed and solved for, but it's also crucial that construction impacts the community as minimally as possible. Due to the aging nature of middle ring suburbs and the fact that many of these homes were constructed at the same time highlights a major concern within suburbs: maintaining and updating existing infrastructure. For instance, water, electrical, and road/stormwater infrastructure all need to be maintained or improved on. In current years as well with the exponential growth of remote or hybrid work-from-home lifestyles has also led to the possibility that digital or fibre-optic infrastructure will similarly need to be added in order to redevelop suburbs to modern needs, as seen in Figure 2.16. This points to a possibility that road networks, that have been the pivotal foundation of these suburbs, may need to become the veins that allow the flow of new construction and municipal work that would help to rejuvenate aging suburbs. But the scale at which this would need to be done suggests that it would need to occur over a timeline or phased appropriately so that construction is not only minimally invasive to residents but also economically feasible. To that end, how can this reaction timeline using suburban renewal strategies also be implemented to allow for these concerns?

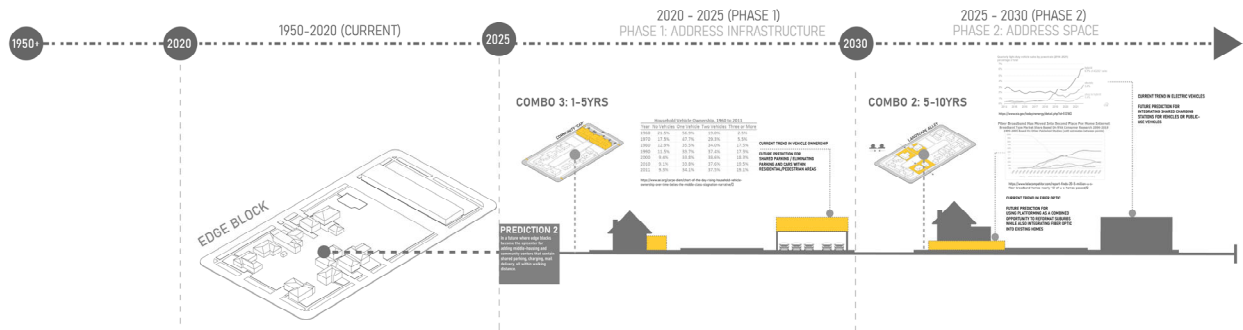


Figure 2.16: Construction Timeline for Phased Suburban Renewal Approach. Source: (Image by Author)

## Part 03: REIMAGINING THE SUBURBS IN PHASES

### 3.1 Design Investigation and Parameters

In order to conduct the design investigation, a site within Garden City was selected for analysis due to the fact that it is a primarily 1950's suburban city with many of the identifying hallmarks of suburban decline in infrastructure and resident retention. Furthermore, the City's master plan and current codes can be utilized to understand many of the current restrictions that have been discussed that bar suburban renewal strategies, but most importantly brings in the crucial element of community engagement and understanding public surveys and the necessary steps moving forward that would be required to properly establish an implementation of any renewal strategies. This selection makes the first crucial cementation of a control variable- a specific site with typical suburban block typologies and conditions as well as the current regulations and community standards that currently exist within this development. These block typologies and their conditions then make the foundation of the next set of variables. These two categories are the existing assets within the development that are to be reused and reimagined according to the last set of variables: the reactants. In the previous part of this investigation, it was found that suburban renewal efforts are blocked by three perquisites: Automobile dependency, Mixed-use dependency, and Privatization dependencies.

The investigation was then conducted by taking existing block typologies, understanding the existing conditions (and thus opportunities) within those block typologies, and then for each condition analyzing how it reacts to all three dependencies as a reuse or renewal approach. Essentially, the investigation seeks to weigh in on how existing conditions can be reused and how well or applicable they are. In doing this, it can also be discerned in what order these conditions can be reimagined for another purpose within the development.

### 3.2. Site Selection – Garden City

In order to situate the investigation in an appropriate context with realistic conditions, the investigation will be conducted in Garden City Michigan, as depicted below in Figure 3.1 with the site boxed out. This city was selected as it is a 1950's suburb outlying Detroit and it's suburban home composition is similarly at a 55% majority of homes being built in the 1950's. In addition to using this site, it is also crucial for this investigation to understand the city's future urban planning- in this case, the Garden City 2040 Master Plan. Analyzing this document is critical to conducting a realistic investigation of redevelopment as it must interact with residents at all stages- planning, construction, and finally completion. Suburbs have had a long history of social and economic issues within suburbs, and understanding the demographics and economics of residents will help this investigation be grounded into a realistic background.

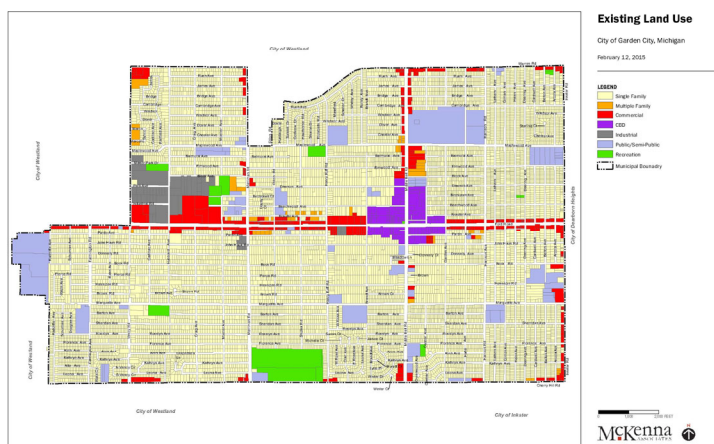
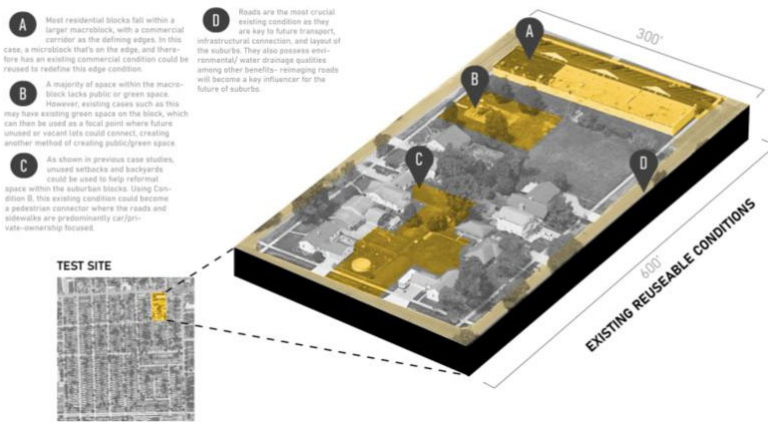


Figure 3.1: Zoning Map of Garden City. Source: (McKenna & Associates)



As can be seen, Garden City is similarly a suburban-dominated city. It appears to have four main commercial corridors, of which the 'downtown' areas can be located. The majority of the city however is still predominantly suburban with typical block structure. There are limited existing assets such as parks and public spaces, and the site selection as shown in the black box above selects a 'megablock' that consists of primarily single-family detached housing but also has some commercial and park infrastructure. These assets are illustrated on the left:

Figure 3.2: Site Selection and Existing Assets. Source: (Image by Author)

### 3.2. Reimagining the Suburbs Using Suburban Existing Block Typologies (E.T)

By using the typical suburban block as a basis for redevelopment, the different types of blocks (Refer to Figure 3.3) and their conditions can be understood and evaluated in terms of reuse. This also allows an incremental approach to renewal and also addresses renewal at different urban scales. In the overarching idea of the suburban renewal reaction mechanism, the edge condition typologies should be addressed first. This is because these 'edges' are created from major roadways and corridors that naturally define the limits of a neighborhood or mega-block. Starting at these edges is a good first step as these edges are traditionally the 'busiest' areas within suburbs due to their traffic and commercial characteristics. Followed by this typology would be the internal condition, which is the most common suburban block typology. Lastly is what is reserved as the 'unique' condition, which could be represented by the occasional but not uncommon insertion of schools or Cul-De-Sacs within suburbs that are fairly common but intrinsically break up the suburban fabric in more 'unique' ways than the two previous, more orthogonal and repetitive conditions.

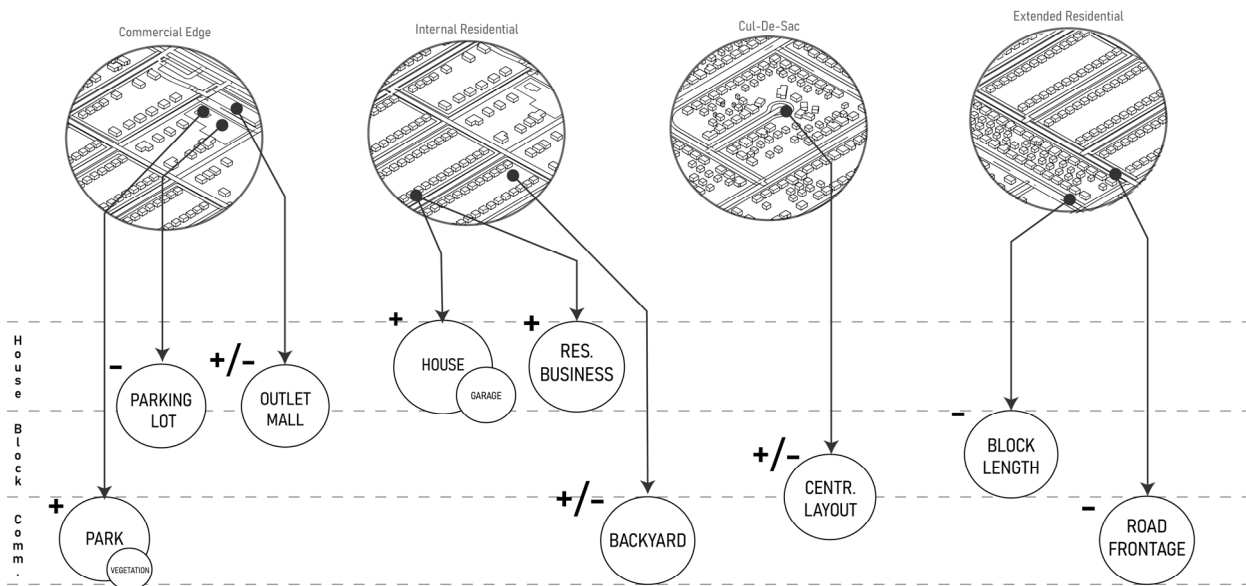


Figure 3.3: Existing Block Typologies and Their Conditions. Source: (Image by Author)

#### 3.2a. External Block Typology

The 'Edge' typology utilizes the existing 'edge' residential blocks that run along the exterior edges of the neighborhood and along major commercial corridors. These typologies present a lot of potential in reusing the existing mixed-use qualities of these blocks in order to create shared parking, middle-housing, mixed density and different building types. The Edge condition is also the best starting point for renewal efforts in part because of these opportunities but also because these edges are already 'busier' than the interior suburbs. By starting redevelopment at these edge typologies,

neighborhood boundaries can be redefined and improved and thus begin to work their way into the deeper parts of residential 'land-locked' blocks. In this way, the Edge typology will solve for the first 'reaction' of automobile dependency in suburbs that will then begin to permit other suburban renewal efforts and reactions to take place.

### **3.2d. Existing Conditions: External Block**

External Blocks contain critical existing conditions such as existing parking lots, commercial/mixed zoning (which can importantly vary from underutilized outlet malls to existing community centers, such as local restaurants, stores, etc.) as well as existing parks or other public infrastructure (such as mailboxes, shared libraries, and community gardens). All of these conditions will go on to be some of the most critical existing conditions to be redeveloped in the beginning phases of the overall suburban renewal timeline.

### **3.2b. Internal Block Typology**

The 'Internal' typology is the most common in suburbia, and is also the most difficult to apply suburban renewal strategies. After the edge typology is addressed, larger renewal efforts can be enacted such as decreasing automobile and zoning dependency. By working from the edge-inwards, road use can then begin to be altered within the deeper heart of the suburbs. However, as seen on the left, there are some renewal strategies that can be enacted at the same time.

### **3.2d. Existing Conditions: Internal Block**

Internal block existing conditions consist largely of individual properties and their houses and garages. They also include small residential businesses. These internal blocks pose the greatest constraint and difficulty in adjusting to renewal efforts as they are the most 'locked in' into the suburban grid, being the one block typology that is the most devoid of unique opportunities.

### **3.2c. 'Unique' Block Typology – Cul-De-Sacs, Schools, and Other Unique Conditions**

The 'Unique' typology is reserved for unique but somewhat common suburban block typology conditions, such as school or Cul-De-Sacs breaking up the repetition of the typical suburban block as shown in the 'Internal' typology. These unique typologies are as important to factor in as well as they present critical social/communal opportunities, as these conditions are typically the only existing non-residential assets within suburbs.

### **3.2d. Existing Conditions: Unique Block / Cul-De-Sac**

Unique Blocks possess one critical existing condition: a variation in block layout. This allows for a diversification in the spatial/land use of the site, such as triangulated property lines or irregular blocks spaces that provide the potential to create new park, pedestrian, or otherwise public green spaces. Furthermore, existing conditions such as a 'centralized layout' that is conventional for Cul-De-Sacs could be a design opportunity for renewal approaches that focus on walkability and spatial types as these conditions are already formatted to both circulating pedestrians and organizing structure in a circular layout, which is conventional to the construction of commercial and other mixed-use types.

### **3.2d. Extended Block Typology**

Lastly, the extended block typology is simply a variant of the typical internal residential block. The primary difference however is that these blocks are 'extended' which is to say that the block length is considerably longer than that of the original. These blocks are essential to bring into the investigation as these blocks have the majority of issues in regards to walkability and automobile dependency, as the greater length of the block contributes to less pedestrian ventilation through the block layout. As such, the extended dimensions and qualities of these blocks must also be factored into the investigation. These blocks also occasionally have a greater block depth or an internal alleyway that is either pedestrian only or can be accessed for automobiles for driving and parking.

### **3.2d. Existing Conditions: Extended Block**

Extended block typologies, like the typical internal block, also have a greater level of dependency on the suburban layout and have a lack of favorable existing conditions. Nonetheless, these blocks have existing conditions such as their block length and road frontage that could become crucial in differentiating pedestrian and automobile controlled corridors.

### 3.2. Creating Reactants Using Suburban Dependencies

Finally, once all of these existing conditions have been extrapolated from the existing block typologies, it can be seen how each condition can react to the dependencies. The idea behind this is to brainstorm and reimagine how each existing condition can then be reused or have a suburban renewal strategy applied to it. As can be seen in Figure 3.4, some existing conditions are not initially useable because of this dependency chain. So, in the exercise of doing this, the idea is to discover the connections and 'emerging conditions' in which it can be understood which conditions are readily useable, and then which conditions can then follow after. By doing this, a reaction chain of suburban renewal approaches and feasibility can be attained.

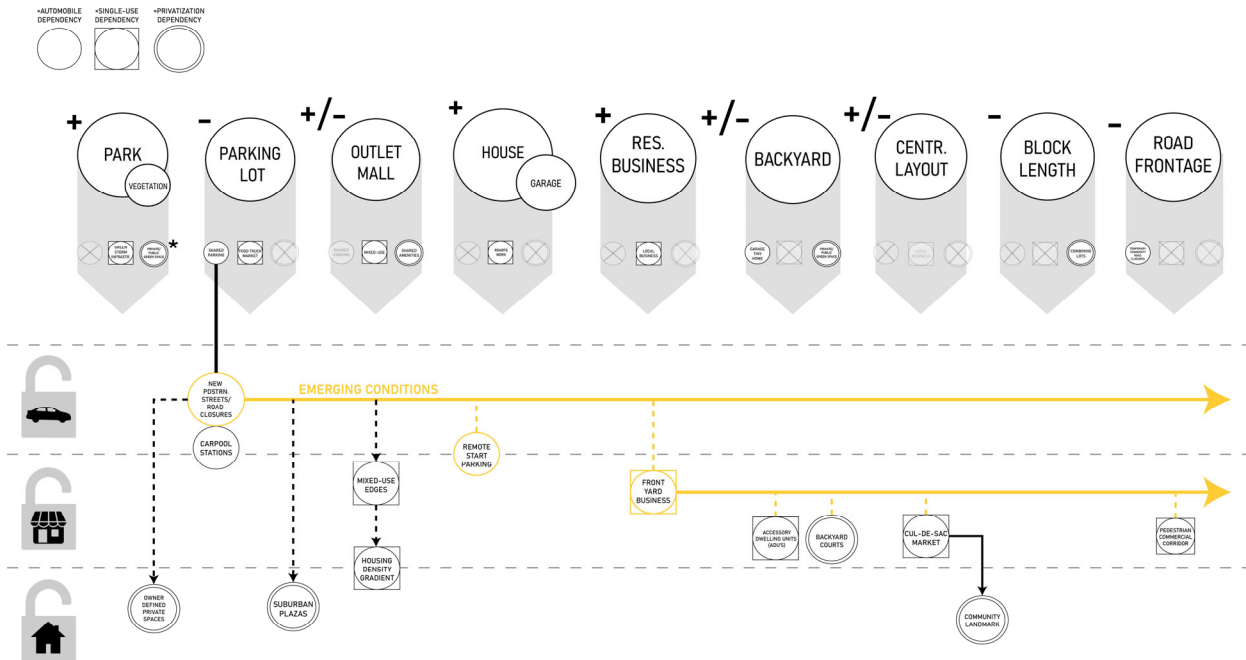


Figure 3.4: Existing Conditions and Reactions. Source: (Image by Author)

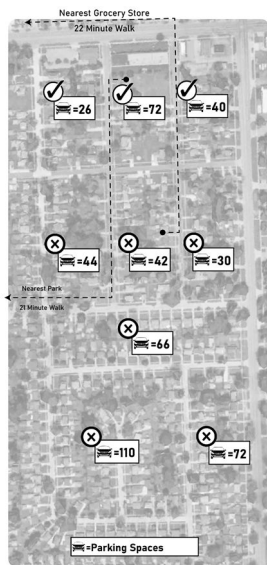
## Part 04: FINDINGS

### 4.1. Metrics of Success

Now, from understanding how existing conditions 'react' towards the dependencies, the findings of which can be organized along a practical timeline in a similar fashion to the investigation with the case studies and their approaches. Much like how each case study had a unique approach that was able to be combined and arranged in such a manner that allowed the greater implementation of other renewal strategies, these reactions can also begin to overlap one another and be placed upon a ladder in which renewal efforts can more easily climb. The placement and success of these reactions has been configured largely in response to how well that the reactions can resolve or 'unlock' barriers to suburban renewal, such as dissipating the dependency chain. On another scale, however, these reactions must also respond to community concerns and code to a negotiable extent so that any changes are not immediately jarring to the community. In other words, the reactions are successful if they remove the full control of current suburban barriers and dependencies, allowing residents greater freedom while also permitting them to 'change' their suburbs in an incremental and negotiated upon manner.

### 4.2. The Suburban Reaction Mechanism

The 'Reaction Mechanism' was created as a result of these findings, with one of the most important discoveries being that external block typologies have the greatest number and quality of reusable existing conditions. As such, these external blocks were found to be the principal starting point for any renewal efforts. This is especially prudent in the finding that many of these external blocks actually already have an excessive number of parking spaces- meaning that they could easily transition to shared parking that would then begin to separate pedestrian and automobile traffic in the suburbs. As can be seen in Figure (BLANK) below, there are three external block typologies within the given site. These three blocks each have a sufficient number of parking spaces within their blocks, with the top leftmost external block breaking even at approximately 26 parking spaces, but the rightmost blocks with 72 and 40 spaces respectively have extra parking spaces available.



Once that step is unlocked, recalling the Dependency Chain, this resolution of parking and automobile requirements then immediately paves the avenue for increasing mixed-use and middle housing densities on these external blocks. These next steps take the form of reactions like Community Cap, Front Yard Business, and Accessory Units. Naturally, with the incremental addition of mixed-use zoning and small businesses within the suburbs, public spaces will similarly be able to increase, resulting in some of the final reactions such as 'Suburban Plazas', Backyard Courts and Community Corridors. So initially, suburban renewal strategies should begin at these external blocks, plan to reuse the plentiful and immediately beneficial conditions there. Then, separate automobile and pedestrian pathways so that internal blocks are gradually decentralized from car use so that they can pursue more renewal approaches that were previously barred. The reactions are phased gradually, because since resolving automobile dependency is the first and most persistent issue within the suburbs and working towards renewal, so therefore renewal efforts will hinge on the gradual separation of automobile and pedestrian traffic. As can be seen, the external blocks are the first blocks to be able to resolve this dependency and 'free up' their road space to not only be reused but also to be temporarily used as a form of incremental construction. This construction need not only focus on adding middle housing and mixed use, but this construction can also pertain to renewing municipalities, infrastructure, as well as giving residents a temporary but opportune time to build accessory units on their properties.

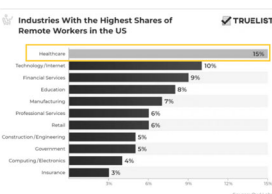
Figure 4.1: Site Selection and Existing Assets. Source: (Image by Author)

#### Garden City Projected Occupations

Table 8: Employment Sectors and Forecasted Jobs, 2010-2040

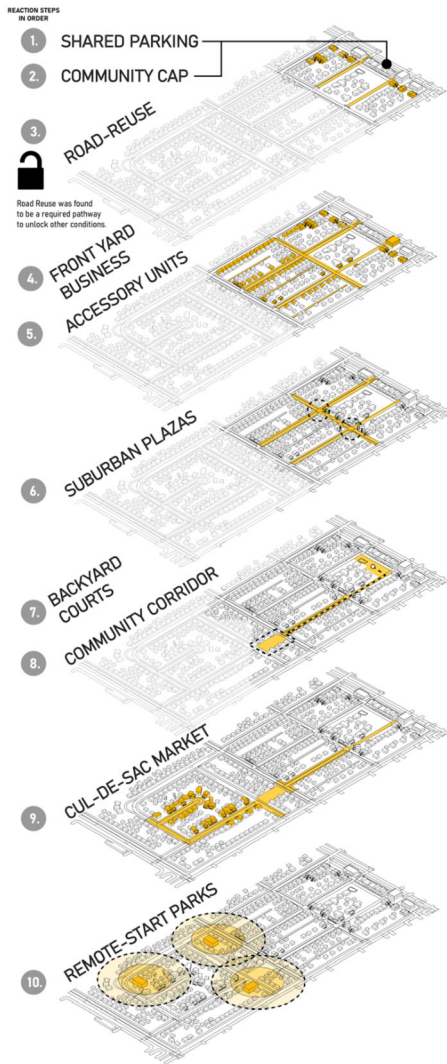
INDUSTRY	2010	2040	CHANGED IN THE NUMBER OF JOBS, 2010-2040
Public Education and Professions	27,270	32,270	+5,000
Services to Household and Firms	2	11,420	+11,420
Retail Trade	1,040	4,140	+3,100
Government	1,020	1,100	+80
Leisure and Hospitality	1,420	2,100	+680
Healthcare/Life Services	1,420	2,100	+680
Natural Resources, Mining and Construction	1,100	1,100	0
Manufacturing	1,100	1,100	0
Wholesale Trade, Transportation, Warehousing and	1,100	1,100	0
Total Employees	4,800	11,000	+6,200

Source: 2010 Census Bureau, 2010



Furthermore, by creating a Planned District Development in which residents agree to the guidelines of their community, an agreed upon point in the future could be to lessen the needs of parking requirements. As shown in Figure 4.2 on the left, the largest project 'future occupation' of Garden City is Healthcare workers. Additionally, Healthcare workers are projected in the future to be a majority of remote workers. With the increase of remote and hybrid work in the future, the original 1950's need of 'driving to work everyday' is significantly lessened. The future of ride-sharing or even reducing driving needs within the community can also help to reduce parking requirement needs in new structures and to reduce the need for parking lots (which are largely disapproved of within the community public survey.)

**Figure 4.2:** Industries with highest number of Remote Workers. Source: (Truelist)



#### 4.2a. Reaction 1+2+3: Shared Parking, Community Cap, & Road Reuse

These three reactions are the starting point for renewal efforts—as mentioned previously, resolving parking requirements makes the initial roadblock to other renewal efforts such as implementing mixed-use, middle housing. Once parking requirements are settled, the two latter items can be reused and redeveloped using the existing conditions of external blocks. This step also works in favor of the community as one of the (CITE) requirements for redevelopment within the city's master plan is to redevelop vacant or underutilized outlet malls that are commonly situated on these external blocks. As such, this makes another good point to start with an external block. Road Reuse then is the reaction in which once shared parking is established for a block, thereby allowing residents to walk an allowable distance (CITE?) to their vehicles, this then frees up the existing road network to become a pedestrian pathway, serving as the key reaction that separates pedestrian and automobile access, which is yet another condition in the city's master plan for renewal efforts.

#### 4.2b. Reaction 4+5: Front Yard Business & ADU's

Once the external blocks begin to be redeveloped and 'Road Reuse' begins to trickle down into the interior, less accessible blocks, the individual properties and their residents have the opportunity to begin their own renewal processes. This can take the form of adding Accessory units, which have become increasingly popular for multi-generational families but also for older residents who are looking to create rentable space. Also, in terms of Front Yard and small businesses, residents who work from home or otherwise engage in commercial activities can amend their homes accordingly. In this way, internal blocks gain the ability to generate revenue, allowing an increase in investment opportunities.

#### 4.2c. Reaction 6: Suburban Plazas

As roads begin to be reused as pedestrian-only ways, the existing intersections within the community become important spatial crossroads, or plazas, if you will. In this specific site, the nearest park or 'public green space' is about a 22-minute walk away. These plazas allow for the reuse of an existing condition in order to solve for the lack of public green spaces and vegetation in suburbs.

**Figure 4.3:** Site Selection and Existing Assets. Source: (Image by Author)

#### 4.2d. Reaction 8+7: Backyard Courts & Community Corridor

As 'Road Reuse' continues throughout the redeveloping suburbs, community corridors can be articulated to connect key waypoints through the community. As these pedestrian corridors become more defined and separated from automobile paths, some internal blocks may require 'backyard courts' or other built-in garage measures. Since the site utilizes a 3 block width, there are still accessible roads on the new 'edges' of this planned district development. As such, the new 'edge' blocks that will still be fronted by an automobile road can use the aforementioned 'backyard court' strategy in which the houses along this road frontage can be redesigned to have built-in garages closer to the road front, or may involve limited pedestrian/automobile alleyways into the 'backyard' of the block, limiting vehicles to residents who live there only. This is one solution to solving the dense parking needs of the inner blocks while also attempting to maintain a separated pedestrian and automobile pathway. In this manner, the 3 block wide development will be able to maintain 2 pedestrian reused roads with a edge properties utilizing in-built parking and automobile alleyways. This solution may also be preferable for older or disable residents who will need closer access to their vehicles than for a shared parking scenario that would be preferable for other residents.



#### 4.2e. Reaction 9: Cul-De-Sac Market

Once small businesses and mixed-use begin to develop over time, existing conditions such as the centralized layout that Cul-de-Sacs can provide the type of spatial layout, that much like the suburban plazas, helps to facilitate community activities, flea markets, and encourage walkability through the neighbourhood. One case study of a similar suburban market is Figure (BLANK)- Kensington Market in Toronto, Canada.

Figure 4.4: Kensington Market. Source: <https://www.aprilandsummer.com/things-to-do-in-kensington-market-toronto/>



Figure 4.5: Collage Image of a Suburban Plaza, Front yard businesses and gardens. Source: (Image by Author)

#### 4.2f. Reaction 10: Remote-Start Park

Finally, as the community becomes more independent, outside visitors coming to the area will need places to convene or park. Due to the temporary nature of the visit, these 'parking spots' can otherwise be public green spaces, parks, or open field event spaces. This last reaction also is an opportunity to establish a locally selected node or nodes that the planned development will use to integrate into the city's broader public transportation infrastructure, etc. It's important that this reaction is established last- current trends in public transport are typically unresolved, with renewal efforts usually focusing on increasing walking or biking paths in terms of localized transportation. But these 'Remote Start Parks' have the opportunity to be nodes where buses or other shared automobile transportation can stop, recharge, and deposit bus goers.

### 4.3. The Reaction Cycle: The Future of Suburban Renewal

In conclusion, the major findings of this exercise was that the goal of suburban renewal should be to create a framework of approaches that can incrementally reimagine and improve upon the existing conditions of the community. This is not only for the sake of phasing in a communally-accepted timeline of construction, or as a way to slowly fund for the improvements, but also as an overall cultural methodology of approaching renewal. Due to the founding nature of the suburbs, being automobile dependent as well as demographically restricted (even to today, as mentioned earlier in this paper in Figure 1.6) Resulting in what will likely be a slower rate of achieving community acceptance, which is exactly why Planned District Developments will be required as any kind of suburban renewal strategy or application method will require extensive community engagement. But once this engagement is achieved, as is seen in Figure 4.6, a 'Reaction Cycle' can be created wherein developers can begin the process by targeting these high-opportunity, but also already communally-desired rehabilitation of exterior blocks can then provide the reactionary phases that will then allow residents to begin their own renewal strategies. In this way, Exterior Block/Developers and Internal Block/Residents create a flow of investment into one another, which helps to generate the funding and construction processes that have been a major conflict for renewal approaches.

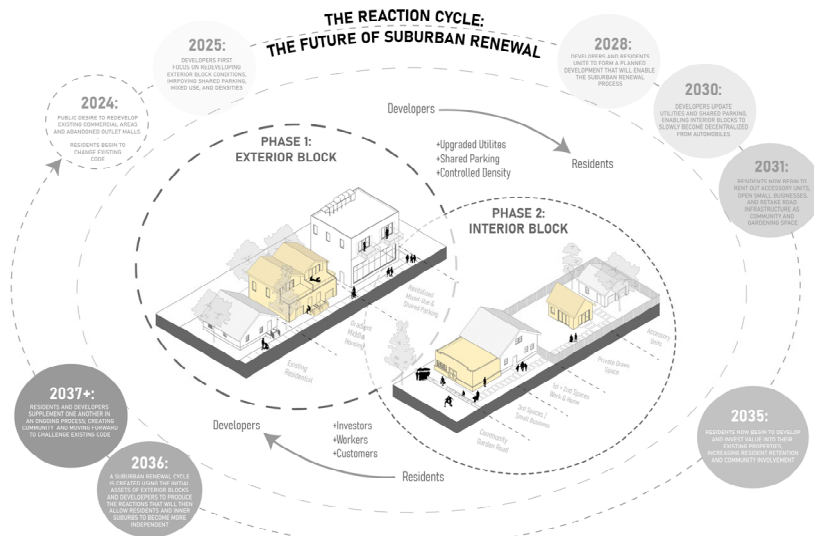


Figure 4.6: Site Selection and Existing Assets. Source: (Image by Author)

## APPENDIX A: Literature Review

Tachieva, Galina. *Sprawl Repair Manual*. Island Press, 2010.

This publication is integral to understanding current suburban renewal approaches within architecture, the urban scales that they are applicable to, and lastly the crucial factors that inhibit many suburban renewal strategies today.

## APPENDIX B: Precedent Analysis

Nesterenko, Artur. "Retrofitting the American Dream." Behance. Accessed January 29, 2024. <https://www.behance.net/gallery/3815703/RETROFITTING-THE-AMERICAN-DREAM>.

"Retrofitting the American Dream" is a project proposal by award-winning designer Artur Nesterenko that reimagines the possibilities of reusing materials from abandoned or underused homes in order to create new ones. This project was inspired by the 2007 market crash that left many 1950's suburbs underused, thus creating a void in usable housing there. Nesterenko's interpretation was to imagine 'clients' like inventors, bakers, or astronomers, and to reimagine the allocation of materials from underused homes in order to create specifically tailored homes for these clients or 'occupations'. The reuse of structure and materials for the creation of homes that are meant not just for living but for occupation is an interesting take on suburban renewal as many 1950's suburban homes and neighborhoods are zoned only for residential- the idea of reusing or recreating homes specifically towards types of occupations is another interesting take on how suburbs can confront lack of diverse zoning while inspiring more development in small business within suburban developments at large.

Other architects. Accessed January 29, 2024. <https://otherarchitects.com/project/offset-house/>.

Other Architect's "Offset House" is an exhibition that had a particular interest in the existing framing of suburban homes. Their idea was that "by reclaiming the frame for architecture, we hope to reframe our relationship to the suburbs." In this way, the design 'offsets' a new volume or frame to encapsulate the existing house. By doing this, the spatial setup of the existing home gains another layer, removing the need for fences on the exterior which allows for backyard space from other homes to be consolidated into more commons or semi-public space for the neighborhood. The neighborhood then becomes reoriented so that this new space has more focus than the existing roads. Another interesting aspect of this project is the discussion of doing suburban renewal 'by stealth'. The emphasis is to encourage suburban renewal by means that do not require demolition or relocation and is as minimally invasive to the existing community as possible.

"MODPOD". InHouse OutHouse. Accessed January 29, 2024. <https://www.modusoperations.com/design>.

The "ModPod" by ShOp Architects is a project that focuses on revitalizing suburban/urban developments that have begun to age. Their approach was to understand what the 'heart' of the home was in order to design a module that can be inserted or "transplanted" into the aging home. This "heart module" includes critical amenities such as a modernized kitchen, bathroom, as well as other electrical, heating & cooling, and daylighting systems that altogether work to give the home new life. In addition to this, the module 'sticks out' of the original home, not only providing daylighting and a connection to exterior municipalities but also as a design choice. These protruding facades can then be freshly decorated or customized as a porch or other useful possibilities as another way to revitalize the aging as well as existing infrastructure of 1950's suburban neighborhoods.

"Future Homes." Sibling. Accessed January 29, 2024. <https://siblingarchitecture.com/projects/future-homes-competition/>.

FamilyGrammar is a research/competition project by SiblingArchitecture, situated in Australia but designed for international use in terms of small lot suburbs. The project proposes the creation of a 3-unit apartment typology or

*'module' that would be adjustable to existing residential blocks. This module would then plug into the existing layout of a block, taking into account the existing setbacks and placements of existing buildings- and using these setbacks, backyards, side yards, etc. to guide the design of the new massing. In addition to using a 'veil' to surround buildings as well as a 'suburban fence', the design works to adapt to existing conditions while creating new spatial typologies out of existing suburban architectural types, such as the yard, in order to create a new block layout that is denser, more walkable, and has a specific consideration to the layout of private, semi-private, to semi-public and then to fully public spaces.*

Design, Opticos. "Missing Middle Close up: Bungalow Courts." CNU, December 2, 2017.

<https://www.cnu.org/publicsquare/2017/11/29/missing-middle-close-bungalow-courts>.

*The Bungalow Court or 'Cottage Court' is actually an existing housing typology in the U.S but hasn't been used frequently since before even the 1950's. In an analysis of Daniel Parolek's "Missing Middle Housing", this article by Opticos Design suggests that these bungalow courts are an integral aspect of a neighborhood. While the housing type itself doesn't change, the layout does- creating an internal court that focuses away from the road to an internal, communal space. The article further points out how this layout is advantageous to new families or most importantly, the aging primary demographic of existing 1950's suburbs- the elderly. These courts maintain a 'secular' feel while still providing a stronger communal layout that doesn't sacrifice existing aspects of suburbs, such as the style of housing or access to vehicles.*

Other architects. Accessed January 29, 2024. <https://otherarchitects.com/project/new-ground/>.

*New Ground is another design proposal by Other Architects. This project tackles suburban renewal by doubling the ground plane, creating a separation between fully public space and the interior neighborhood. The existing homes would remain with the new 'podium' extending upwards as garden space. The new second level atop the existing structures would then become new units or additions to these homes, and the connective spaces between them would become gardens or communal space.*

"Nærheden, Suburb of the Future." Landezine. Accessed January 29, 2024. <https://landezine.com/naerheden-suburb-of-the-future/>.

*This project was designed by karres en brands as for new neighborhood design in Denmark. Critical features of the project include creating a block with a highly internalized communal focus, having a designated parking garage in each block typology so that the internal walkways of the neighborhood are mostly car-free. Additionally, the project focuses on creating a diversity of housing types to create an interesting living space that also is more sustainable. Lastly, the design uses different types of 'loops' to connect the neighborhoods, most notably positing that there must be a recreational/green loop surrounding the block typology as well as a water drainage loop.*

Djordjevic, Aleksandra, Spasoje Radomilovic, Nevena Balali, and Marina Ilic. "'housing +' Development of Central Zone in Subotica." Behance. Accessed January 29, 2024. <https://www.behance.net/gallery/22279663/Housing-Development-of-central-zone-in-Subotica>.

*This was a design project to revivise the city of Subotica in Serbia. Some unique attributes of the project was the way in which the team broke down a mega-block neighborhood layout into smaller, concentrated micro-blocks. Interestingly, the project sought to 'zone' aspects of these blocks to meet the needs of everyday living- including commercial, educational, and other aspects so that the created neighborhood was more self-reliant within itself as well as being inclusive to all demographics/users. Interestingly, it was also a focus to do this in order to create better communal connection within the neighborhood so as to fight gentrification as well. All parts of the neighborhood were given a 'zone' or importance- even historical zones were crucial, in what the project describes as the creation of a neighborhood that is designed to develop and change over time, creating a suburban fabric.*

Tachieva, Galina. *Sprawl Repair Manual*. Island Press, 2010.

*Galina Tachieva's "The Sprawl Repair Manual" is a book that discusses multiple remediation techniques for sprawl on different scales of suburban development. A majority of these proposed solutions are aimed at maintaining existing infrastructure and improving it by densifying the suburbs, improving pedestrian and communal connectivity by creating more plazas, bike lanes, etc, reducing road widths, among other methods. The two images above show some very interesting takes- one, that the positioning of parking should be situated on the main thoroughfare of a designated block typology. Second, that another solution to suburban renewal could be de-densification- allowing suburban lots to become agricultural as many of them once were. This can help with water drainage in the suburbs as well as providing improved local food development that could, in the future, help with local food small business production or farmer's markets.*

## REFERENCES

PLAN 2040 - Garden City, MI. Accessed January 30, 2024. <https://www.gardencitymi.org/DocumentCenter/View/42/Master-Plan-PDF>.

"7 Historical Facts about Detroit's Suburban Sprawl." Detroit Urbanism. Accessed January 29, 2024. <https://detroiturbanism.blogspot.com/2021/05/7-historical-facts-about-detroits.html>.

"The Aging Water Infrastructure: Out of Sight, out of Mind?" Deloitte Insights. Accessed January 29, 2024. <https://www2.deloitte.com/us/en/insights/economy/issues-by-the-numbers/us-aging-water-infrastructure-investment-opportunities.html>.

Arcgis.com. Accessed January 29, 2024. <https://www.arcgis.com/home/item.html?id=e83700fb926b47c0b7ca2ee500188605&sublayer=0>.

Chart of the day: Rising household vehicle ownership over time ... Accessed January 30, 2024. <https://www.aei.org/carpe-diem/chart-of-the-day-rising-household-vehicle-ownership-over-time-belies-the-middle-class-stagnation-narrative/>.

Drawingdadmin. Drawing Detroit, September 1, 2015. <http://www.drawingdetroit.com/category/infrastructure/page/4/>.  
McManus, John. "Suburban Renewal: America's Pandemic Embrace of Backyards." The Builder's Daily, August 31, 2021. <https://www.thebuildersdaily.com/suburban-renewal/>.

Mitchell, Travis. "1. Demographic and Economic Trends in Urban, Suburban and Rural Communities." Pew Research Center's Social & Demographic Trends Project, May 22, 2018. <https://www.pewresearch.org/social-trends/2018/05/22/demographic-and-economic-trends-in-urban-suburban-and-rural-communities/>.

"News." Interview with Jeff Speck, Hon. ASLA. Accessed January 29, 2024. <https://www.asla.org/ContentDetail.aspx?id=26394>.

"Power Outages Often Spur Questions around Burying Power Lines - U.S. Energy Information Administration (EIA)." Power outages often spur questions around burying power lines - U.S. Energy Information Administration (EIA). Accessed January 29, 2024. <https://www.eia.gov/todayinenergy/detail.php?id=7250>.

Schaeffer, Katherine. "A Growing Share of Americans Say Affordable Housing Is a Major Problem Where They Live." Pew Research Center, January 18, 2022. <https://www.pewresearch.org/short-reads/2022/01/18/a-growing-share-of-americans-say-affordable-housing-is-a-major-problem-where-they-live/>.

Tachieva, Galina. *Sprawl Repair Manual*. Island Press, 2010.

"United States Surpasses 2 Million Solar Installations." SEIA. Accessed January 29, 2024. <https://www.seia.org/news/united-states-surpasses-2-million-solar-installations>.

Wolfgang Fengler, Juan Caballero, and Hannah Stephens Andre M. Perry. "Today's Suburbs Are Symbolic of America's Rising Diversity: A 2020 Census Portrait." Brookings, September 19, 2023. <https://www.brookings.edu/articles/todays-suburbs-are-symbolic-of-americas-rising-diversity-a-2020-census-portrait/>.