

**Promoting Community Identity through Repurposing Vacant Land:
City Park Design in Downtown Arlington**

By

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THESIS

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Abstract

As urbanization progressed rapidly in the mid-nineteenth century, people moved to cities for many reasons, and as a consequence, the volume of green spaces in the cities was reduced. Lands have been developed or redeveloped as urbanization developed. In this process, leftover spaces and vacant lands have been created. Urban vacant lands could be a problem for many cities. They might have aesthetic issues such as disordered or cluttered appearances, safety issues due to lack of maintenance, economic issues for it being wasted and so on (Kim et al., 2023). However, vacant lands in urban areas have become suitable assets to fill the green open space shortages that have been formulated in cities for a long time. With the infrastructure in place, vacant lands within a city may connect residents with the surrounding commercial districts and existing facilities and enrich the quality of life by supplying new green open spaces. In this regard, vacant lands can be treated as potential assets for the landscape architecture and urban design process.

The selected design site is comprised of a park, according to land use, and surface parking lots. However, the park has remained a vacant space of simple grass for a long time. By working with the site, this study aims to exemplar the potential benefits of repurposing urban vacant lands into green open spaces in Downtown Arlington. This study attempts to address the goal by promoting community identity improvement, connectivity enhancement, and amenity enlargement. By promoting these potential benefits, this thesis tries to present how the quality of life and place experience of Downtown Arlington residents and visitors can be immensely enhanced.

The study adopted qualitative methodologies including literature reviews and precedent studies, user surveys, expert interviews, and GIS data analysis. User surveys were conducted online and offline by people aged 18 and over, consisting of opinions on the perception of the green open space in Downtown Arlington and views on the selected design site. Expert interviews were conducted with urban planning, parks and recreation experts, and landscape architects. GIS data collection was retrieved from publicly available data in connection with Texas or the City of Arlington.

Design suggestions for the selected site were derived by analyzing all of the collected data. The proposed design solutions were found through the review of data from literature review, Downtown Arlington Master Plan (2018), precedent studies, expert interviews, and user surveys. Specific design concepts of the area of the study were selected from the proposed design solutions through the site inventory and analysis process. The final park design divided the park into three large categories: intersection, open space, and streetscape design. Each category suggested a variety of programs and elements to create a vibrant and inclusive green open space that would foster social interaction, cultural expression, and environmental awareness. Intersection design was recommended for better visibility of the site for both pedestrians and drivers. The overall design also aimed to enhance the connectivity and accessibility of the site to the surrounding areas and amenities and reflect the history and identity of Downtown Arlington by adopting continuous streetscape, gateway design, wide sidewalks, multi-purpose spaces, and public art.

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1. Introduction

1.1. Background to Study

A green open space is an important space that provides urban ecosystem services to urban residents and supports various recreational activities. However, creating new green spaces in a mature urban area already concentrated with various infrastructures takes much work. Securing and providing green spaces to urban residents is one of the crucial tasks for urban planning and continuous development (Şenik & Uzun, 2022).

In the mid-nineteenth century, cities grew fast, and the density of a city increased. According to the UN report (2019), the trend of global urbanization grew by 2.54 percent between 1950 and 2018, higher than the growth rate of 1.62 percent of the world's total population; the proportion of the population living in cities increased from 30 percent in 1950 to 55 percent in 2018, and 68 percent of world's population is expected to live in cities by 2050 (United Nations, 2019). These results show that the rise in urbanization continues to be a global trend. The importance of the features within a city will also increase as the number of people living there increases.

In this context of urbanization, much of the land in the city was developed or redeveloped through centralization of population into the city, saturation, and expansion of the city. Two significant adverse effects on urban land were a decrease in natural green areas and an increase in empty land. The construction of infrastructure to support the expansion of development in urban areas resulted in the distinguishable outcome of land use change in the wake of urbanization, which is the spatial expansion of built-up areas (Nuissl & Siedentop, 2021). This implies a significant shift of land cover features involved by changes in the urban spatial

complex and the urban form (Nuissl & Siedentop, 2021). Lack of green space causes many environmental problems, such as increased carbon emission, air pollution, reduction in biodiversity, and so on (Haq, 2011; Haq, 2015).

Meanwhile, the increase in vacant land that emerges, along with the decrease in urban natural green spaces, is related to the population movement caused by city expansion from the center to the outskirts, leading to the urban vacancy problem. While these vacancies may cause environmental and social-economic issues, they also emerge as an opportunity for redevelopment. While it is an opportunity for vertical development, landscape architects can use it as a potential for improving the urban ecosystem, increasing green open spaces, and enhancing community life.

1.2.Problem Statement

The City of Arlington, where the target site of the study is located, is situated between the centers of Dallas and Fort Worth, two central cities of the rapidly growing Dallas-Fort Worth (DFW) Metropolis in Texas. Arlington's development, which began with the construction of the Texas and Pacific Railway and the opening of a train station, attracted people to various jobs and attractions as it lured the General Motors plant and multiple entertainments such as Six Flags Over Texas and the Texas Rangers. Arlington became an entertainment destination in DFW. However, as the city grew, downtown industries quickly leaked out to the city's outskirts, resulting in vacancies and vacant lands. In addition, with the demolition of the railway station, Arlington's industries and geographical location have transformed it into a car-oriented city. As a result, many vacant lands remain in Downtown Arlington.

Meanwhile, a lack of green open space in downtown Arlington has long been viewed as a challenge for residents with the feeling that they are not provided with adequate public space (City of Arlington, 2018). In addition to the lack of green open space, the reality of needing more tree canopies leads to a shortage of public space when trying to escape the extreme heat and daylight, especially in the scorching summer of Texas. Despite the establishment of Levitt Pavilion, which opened in 2008, and several other smaller green spaces, the city still needs ample facilities to support cultural events and activities in Arlington (University Wire, 2019). Levitt Pavilion is used for music and other events; however, it is used less during weekdays when there are no scheduled events, especially during the daytime when the temperature is high. University of Texas at Arlington, which is located adjacent to Downtown Arlington, has also requested additions and integration of outdoor spaces other than Levitt Pavilion and Doug Russell Park, emphasizing the importance of outdoor spaces that can represent the characteristics of the city and contribute greatly to urban beautification (University Wire, 2018). The lack of green open spaces, which should be routinely available to residents and visitors and embrace diversity, one of Arlington's identities, is also considered a significant problem. If vacant lands are used to provide high-quality green open spaces, they can be used as a more comprehensive solution to the green space problem and to promote community engagement. According to the City of Arlington Downtown Master Plan (2018), providing green open spaces and redeveloping vacant lands are the types of strategies to continue helping the community as the city core revitalization.

1.3.Purpose of Study

The research aims to study the potential benefits of repurposing urban vacant land into green open spaces in Downtown Arlington. This study attempts to promote community identity

improvement, connectivity enhancement, and amenity enlargement. With infrastructure in place, vacant lands within a city can connect residents with the surrounding commercial districts and existing facilities and improve the quality of life by providing new green open spaces. By promoting these potential benefits, this thesis tries to present how the quality of life and place experience of Downtown Arlington residents and visitors can be enhanced immensely.

The main goal of this study is to comprehend the status of green open spaces and the potential vacant lands in Downtown Arlington and to suggest design and planning approaches to promote community identity. This research aims to provide information for landscape design and urban planning processes, particularly in repurposing vacant land within Downtown Arlington. The study gathers information on the major needs and demands of the Downtown Arlington community about the development of green open space and enhancing community identity through a review of the downtown master plan, user perception surveys, and expert interviews.

The objectives of this research are as follows:

1. Identify the key design elements, amenities, and program requirements about community needs and demands for design suggestions of green open spaces in Arlington's urban core.
2. Develop a conceptual design for future green open space in Downtown Arlington by repurposing vacant land.
3. Explore how vacant land can be integrated into landscape architecture and urban design processes benefiting residents and visitors to improve community identity.
4. Capture perceptions and insights from expert interviews and user surveys to inform the planning and development of green open spaces.

The study seeks to enhance the quality and quantity of green open spaces in Downtown Arlington, promote community identity, and transform currently unused vacant lands to create more accessible and revitalized public areas in Arlington's urban core.

1.4. Research Questions

This study focuses on three research questions: (1) How can urban vacant land be utilized to meet the needs and demands of residents and visitors through green open space design in a city? (2) How can urban vacant land be designed and implemented to enhance green open space in Downtown Arlington? (3) How can the repurposed vacant land enhance community identity and create vibrant community spaces and cultural diversity in Downtown Arlington?

The research framework provides suggestions to explore the potential of vacant land for practical application in green open space design approaches for Downtown Arlington.

1.5. Definition of Key Terms

Green Space is partially or completely covered with grass, trees, shrubs, or other vegetation (EPA).

Green Open Space is a planned, sustainable environment like an urban park, garden, or any other created green space designed for community interaction and cooperation activities (Dewi et al., 2018).

Geographic Information System (GIS) is a framework that allows for managing, analyzing, and visualizing diverse data types. It links this data to a geographical context, merging

location-based information (identifying where things are) with various descriptive details (providing insights into the characteristics of those things) (ESRI).

Urban Vacant Land encompasses publicly and privately owned unused or abandoned parcels within the city without area or size limitations. It includes formerly developed lots, never-developed parcels, and underutilized parcels with minimal development, such as surface parking areas and other similar conditions (Cianfarani et al., 2023; modified by author).

Urban Revitalization is defined as a method of city/municipality development through efficient local partnerships, strong civic participation, and the concentration of resources in a specific area considered the most degraded to solve social issues in the community and bring about change with a high social impact (Ștefanița, 2018).

Place-making is the process of creating quality places that attract people to reside, work, engage in activities, and acquire knowledge (Wyckoff, 2014). In this context, placemaking is conceived as a singular process aimed at generating a “quality place.” However, fundamentally, it should culminate in establishing a robust sense of place.

Sense of place is the sense of place as a concept capturing people’s emotional attachment to a location and its impact on their behavior and well-being (Hu & Chen, 2018).

1.6. Methodology

This study aims to investigate various aspects, such as understanding green open space and the potential of vacant lands, through literature reviews and expert interviews, and multiple approaches are needed to achieve this (Sommer & Sommer, 2002). The qualitative methodology included literature reviews and precedent studies, user surveys, expert interviews, and GIS data

analysis. User surveys were conducted online and offline by people aged 18 and over, consisting of opinions on the perception of the green open space in Downtown Arlington and views on the design site. Expert interviews included urban planning, parks and recreation experts, Downtown Arlington authorities, and landscape architects. GIS data collection was gathered from publicly available data in connection with the state of Texas or the city of Arlington. Design suggestions for the design site were derived by synthesizing all the collected data. This design suggestion provided design concepts for new green open spaces for residents and visitors in Downtown Arlington with programs, approaches and amenities available to relevant ministries to match the conditions of Downtown Arlington.

1.7. Significance of the Study

Numerous studies have been conducted on urban vacant lands within the Dallas-Fort Worth metropolis. However, there have been few studies on green open space design representing urban revitalization using urban vacant lands in Downtown Arlington and the identity of the downtown that can meet the needs of communities. This study perceives the downtown revitalization and redevelopment as an important urban core. And it tries to suggest that the importance of green open space distribution can be publicized through the green open space design suggestion using urban vacant lands in Arlington, which are constantly emerging and are of growing interest and importance.

1.8.Summary

This chapter introduces the research topic and summarizes the main objectives and contributions of the study. The primary goals are to explore the potential of vacant land for green open space design, enhance community identity and quality of life, and provide design suggestions and planning ideas for Downtown Arlington's green open space.

This research is organized into the following chapters: 1. Introduction, 2. Literature Review, 3. Methodology, 4. Analysis and Findings, 5. Design, and 6. Conclusion.

2. Literature Review

2.1. Introduction

This literature review chapter aims to examine previous studies on green open space and repurposing vacant land into green open space and synthesize the implications and findings in the fields of landscape architecture and urban design. This chapter also focuses on current perspectives, impacts, and common mitigation methods for green open space to revitalize Arlington's downtown area through vacant and unused land. In addition, it will be conducted on Arlington's master plan for green open spaces. Furthermore, the precedent study is presented for the appropriate design method for Arlington.

2.2.Green Open Space

Understanding green open space is crucial for designing new green areas. Green open space is a planned, sustainable environment like an urban park, garden, or any other created green space designed for community interaction and cooperation activities (Dewi et al., 2018). This section will delve into the definition of green open space as outlined in prior research, elucidate its benefits, and explore its impact in an urban context.

2.2.1. Describing Green Open Space

Green open spaces have influenced human life since the beginning of the rule of nature, regardless of cultural, political, and economic life (Stanley et al., 2012). As humans passed through hunter-gatherer societies and entered agricultural societies, cities began to form and

lived together. As cities formed and wealth accumulated, leisure, recreation, and entertainment spaces began to emerge. Green open spaces within urban areas exhibit significant variations in their ecological, social, and symbolic functions, serving as cultural products shaped by their specific settings. These spaces inherently project intricate social and political meanings to a diverse array of individuals (Stanley et al., 2012). Various conceptual frameworks exist for defining these green open spaces in several studies, emphasizing the importance of comprehending their roles within the urban context.

Dewi et al. (2018) explain **green open space** as planned space for community interaction and cooperative activities; thus, a constructed environment for sustainability, such as an urban park, garden, or any other created green space to serve the community demands. In other words, Dewi et al. (2018) define green open space as a *“human-built environment such as an urban park, garden or any green space that is located in the middle of housing settlement.”* In the research conducted by Dewi et al. (2017), a tree in an open space serves as an active playground for both children and adults, a leisure area for adults, and a green conservation area promoting sustainability.

Stanley et al. (2012) defines **open space** as any ground area within urban areas not covered by a roof and accessible to the public. They propose a typology of seven major categories, including (1) spaces for food production, (2) parks and gardens, (3) recreational areas, (4) plazas, (5) streets, (6) transport facilities, and (7) incidental spaces (Stanley et al., 2012). These categories are based on factors such as the historical context, physical characteristics, functions, and scale of open spaces. It is important to note that some open spaces may overlap multiple categories due to their complex nature. Despite the challenges in categorizing open spaces, this typology is useful for analyzing how people perceive and use them. Figure 1 shows the

typologies of urban open spaces, and green space and grey space each represent vegetated land and hard surfaces (Stanley et al., 2012). The City of Arlington (2015) describes open spaces as “a land left in its natural, undisturbed state or land for passive or active recreation, scenic preservation, or wildlife habitat.”

Figure 1 An interdisciplinary classification of urban unroofed areas across historical and contemporary times. (Source: Stanley et al., 2012)

		Scale		
		City	Intermediate	Residence
Form	Transport Facilities	Harbors, Airport and Train Station Parking	Transit Stations, City Gate Areas	Driveways, Parking Areas
	Streets	Central Boulevards	Street Space	Pedestrian Alleys, Paths
	Plazas	Large Formal Plazas	Smaller Neighborhood Plazas	Interior Courtyards
	Recreational Space	Stadiums, Greenbelts, Beaches	Sports Facilities, Playgrounds	Houseyard Playspace
	Incidental Space	Natural Features and Semi-Wild Areas	Empty Lots, Transit Borders	Marginalized Space Between Buildings
	Parks and Gardens	Major Formal Park and Garden Space	Institutional Gardens, Small Parks, Cemeteries	Household Gardens
	Food Production	Orchards, Agricultural Fields	Grazing Commons, Community Gardens	Kitchen Gardens, Small Horticulture

	Grey space
	Green space
	Grey/Green space

Green spaces include parks, cemeteries, nature trails, water banks, riversides, green streets, community gardens, civic plazas, etc. In this research, privately accessed and managed green spaces can be excluded due to the limitations of public utilization. Green spaces can provide

environmental, ecological, social, and cultural benefits, especially in urban areas. Traditional green spaces managed by public institutions and used publicly have advantages such as providing users with recreation opportunities (Madureira et al., 2018). According to a World Health Organization (2017) report, green open space is a component of “green infrastructure.” It is essential to ensure that green open spaces are easily accessible to all population groups and distributed equally within the city to provide healthy health and sustainable living environments (World Health Organization Regional Office for Europe, 2017). Al-Hagla (2008) defines green space as a subset of open space encompassing any vegetated land or structure, as well as water or geological features, located within urban areas.

As defined by Jennings and Bamkole (2019), **urban green space** includes areas such as gardens, parks, greenways, and other spaces adorned with grass, trees, and/or shrubs. These spaces commonly serve as communal hubs where people gather for leisure, social interactions, and recreational activities (Jennings & Bamkole, 2019). Additionally, urban green spaces offer opportunities for people to connect with nature and each other in outdoor settings, providing experiences that may not be easily replicated in other environments (Jenning & Bamkole, 2019). The accessibility and inclusivity of these spaces, which are integral to their effectiveness, underscore the significance of thoughtful design and accessibility considerations in urban green space planning (Giorgio et al., 2022).

2.2.2. Impact of Green Open Space

Providing green spaces in urban areas increases the amount of vegetation and brings numerous benefits. Urban open spaces offer a range of benefits within civic areas, encompassing environmental, economic, aesthetic, social, and psychological aspects (Haq, 2011; Haq, 2015). Depending on the city's context, these spaces can vary in ecological, social, and symbolic roles.

However, they are often viewed as a cultural output of the surrounding circumstances (Stanley et al., 2012). The symbolic significance of these spaces is continually produced or reproduced in each context, influenced by diverse everyday lives and political and economic machinations (Stanley et al., 2012).

Feng & Tan (2017) divide the motivations for the formation of greening cities in a historical context into the following nine themes: (1) aesthetics and beautification, (2) recreation and leisure, (3) religion, spirituality and symbolism, (4) social hierarchy and relations, (5) social reform and community building, (6) physical and mental well-being, (7) food production and sustenance, (8) ecological health and environmental sustainability, and (9) economic value and competitive advantages. These motivations show that the consideration of green in improving human living environments has been sustained in the past and should be considered in the future.

Environmental Benefits

Green open spaces play several vital roles in the city's natural-social ecosystem. They increase the amount of vegetation, which can have numerous environmental benefits. Air and noise pollution control is one of the most significant benefits that reduces carbon dioxide and CO₂ by maintaining or increasing the natural ecosystem in urban areas (Haq, 2011).

Green spaces play a crucial role in contributing to the environment's overall health. They facilitate decreasing carbon dioxide levels, improve air quality, mitigate the heat island effect, and offer habitats for wildlife (Giorgio et al., 2022). Green spaces play a vital role in biodiversity conservation by providing habitats for a diverse range of plant and animal species. Securing biodiversity is crucial as it establishes a link between nature and people through the reproduction of species and the conservation of plants, soil, and water quality (Haq, 2011; Giorgio et al.,

2022). Having a functional green space network is the key to maintaining urban areas as sustainable (Haq, 2011). Plants improve air circulation, provide shade and evapotranspiration, provide a cooling effect, and help lower air temperatures (Haq, 2011).

Economic Benefits

EPA (2015) emphasized that the multiple economic benefits of open, walkable green spaces are essential in terms of policy-making decisions about community development, zoning and land use considerations, land purchasing for parks, and similar initiatives. Green open spaces can yield economic benefits by drawing tourists and visitors, resulting in increased expenditures within the local economy (Jennings & Bamkole, 2019; Giorgio et al., 2022). Green spaces attract visitors who spend money on accommodations, food, and other local services, contributing to economic growth in the surrounding areas (Jennings & Bamkole, 2019; Giorgio et al., 2022). Also, green open spaces can attract businesses and investments by enhancing the overall quality of life and serving as amenities for employees and residents (Jennings & Bamkole, 2019). Promoting local businesses and economic development is facilitated by green spaces, offering opportunities for farmers' markets, outdoor events, and various community activities. These initiatives stimulate local businesses and contribute to the overall economic vitality of the community (Giorgio et al., 2022).

Social and Psychological Benefits

The existence of urban green spaces has the potential to foster positive social interactions, contributing to the cultivation of social cohesion in ways that positively impact health and overall well-being (Jennings & Bamkole, 2019). Jennings and Bamkole (2019) organized the related factors with urban green spaces, and the following factors may relate urban green space

to social interactions: an open park design to encourage active recreational activities, the availability of sidewalks, improved access to parks through quality transportation options, shaded areas that support relaxing environments, functional playgrounds, and the extent of organized activities.

When people participate in some activities, either incidentally or actively, it helps to positively contribute to people's health, recover from pre-existing stresses or problems, and develop resilience from future stresses (Pretty, 2004). Ajayi and Amole (2022) emphasized the transformative effects of open spaces on physical activity and their role in promoting social interaction, stress reduction, and mental fatigue recovery.

Community Well-being and Inclusive Design

The role of green open space is vital in terms of the natural-social ecosystem, which supports residents' and community health by drawing people from outside and fostering social interactions in their community (Zhang et al., 2021; EPA, 2015). Many studies have observed that various types of green environments impact residents' well-being, amenities, social interactions, health, and overall life satisfaction. Such green spaces are essential to providing accessible areas for social interaction among residents, and this accessibility is crucial for improving the quality of life (Rao, 2021). Green open spaces contribute to physical health and well-being by offering opportunities for activities like walking, jogging, and sports, leading to improvements in overall community health (Giorgio et al., 2022). Moreover, green open spaces have the potential to enhance the aesthetic appeal of communities, fostering a pleasant and attractive environment that contributes to community pride and satisfaction (Giorgio et al., 2022).

However, it has been revealed through various literature that the benefits of green open space are not guaranteed by simply providing green space; the qualitative improvement of green space must be promoted (Zhang et al., 2017; Şenik & Uzun, 2022).

2.2.3. Importance of Green Open Space in Various Perceptions

Many scholars, researchers, and professionals consider green open space a vital city asset. Haq (2015) noted that providing adequate quality and quantity of easily accessible green space is the key to satisfactorily meeting urban dwellers' social and psychological requisites. Integrating age-specific facilities into the planning of open spaces from the outset by various stakeholders, such as policymakers, governments, and private and public organizations, is essential to attracting a diverse range of residents in a city and promoting increased physical activity among its inhabitants (Ajayi & Amole, 2022). According to Şenik and Uzun (2022), the early twentieth century saw the inception of the initial open green space guidelines, and Bartholomew and Associates, led by Olmstead, the landscape architect renowned for designing numerous American parks, stressed the importance of ensuring that no urban dweller should be more than 400 meters away from a park.

Many countries and organizations recognize the importance of green spaces and open spaces and strive to provide sufficient green spaces within cities. For example, according to Indonesia's Law No. 26/2007 on Spatial Planning, the proportion of green spaces within a city must be at least 30%, and 20% of that should be used for public purposes to maintain environmental sustainability (Dewi et al., 2017). This law acknowledges the important role of green spaces in enhancing the city's ecosystem and improving its residents' quality of life. The World Health Organization (WHO) recommends having at least 0.5 to 1 ha of public green space within 300m of residential areas (European Environment Agency, 2022). The city of Berlin has guidelines for

green open space access to at least 6 m² of smaller and 7m² of larger green space per person (EEA, 2022). According to Natural England (2010), people should access at least 2ha of green space within 300m of residential.

Therefore, many administrations have attempted to provide more advantages by increasing green open spaces. However, they are also challenged by limited urban spaces and resources due to urban saturation, soaring land property values, and budget constraints. Various causes bring about residents with inequitable access to local green space and the environmental and social benefits of such green spaces; urbanization and intricately connected urban growth are among the most significant contributors to this issue (Kabisch et al., 2015). The urban core or downtown areas are packed with lots of urban infrastructure, and it is hard to manage or expand green space throughout the city's core area.

Overall, securing green open spaces plays a significant role in urban planning and design. Multifunctional green spaces effectively designed in the city center can improve aesthetic landscapes, provide ecological services, offer recreational opportunities, and simultaneously create economic benefits (Feng & Tan, 2017). However, providing such public green spaces in an already-formed city core is a given challenge. Cities need to address not only the quantity and quality of public greenery but also its accessibility and imbalance. Simply creating more green spaces may not solve the fundamental problem.

2.3. Vacant Land in Urban Area

The reasons for the increase in vacant lands vary, such as the city's expansion, population decrease, discontinuation of investment, and significant business transition. Meanwhile, the

city's expansion began to create empty spaces in the central part of the city as people began to move to the suburban areas. Newman et al. (2016) captured the leading causes of the increase and decrease of vacant urban lands in America (See Figure 2). According to Newman et al (2016), the top five causes of increased vacant land are disinvestment, suburbanization, annexation, access to capital, and deindustrialization. The top three causes of decreased vacant land are a growing local economy, city policy to reuse, and population in-migration (Newman et al., 2016).

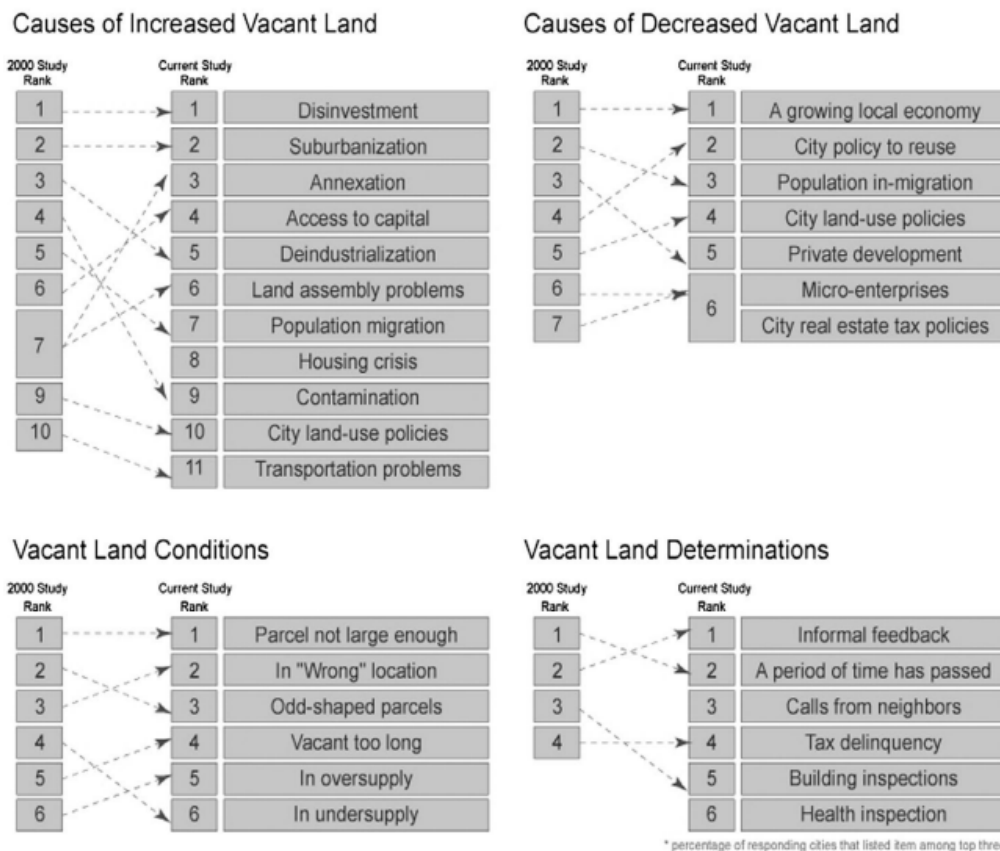


Figure 2 Research results of the respondent rank of causes of increase or decrease, conditions of vacant land, and abandoned structure determination. (Source: Newman et al., 2016)

Occasionally, these spaces refer to ‘interstitial’ space or status. It is challenging to define the leading cause of where vacant lands begin; however, especially within American cities, the standard development of planning templates in rectangles, regardless of lot shape, is considered

one of the causes of vacant lands (Stanley et al., 2012). Various terms describe empty spaces, such as leftover space, urban void, urban vacancy, brownfield, abandoned space, and lost space. These spaces are often indifferent, neglected, or threatening to people.

Strategically repurposing vacant land is instrumental in reducing urban vacant spaces and providing community amenities. Therefore, a comprehensive understanding of the causes and effects of vacant lands is crucial for effective urban planning and development.

2.3.1. Definitions of Vacant Lands in Urban Area

The definition and scope of vacant lands vary at the administration or research level. Pagano and Bowman (2000, p. 2) explain, “**Vacant land** includes not only publicly owned and privately owned unused or abandoned land or land that once had structures on it, but also the land that supports structures that have been abandoned, derelict, boarded up, partially destroyed, or razed.” According to Pagano and Bowman’s (2000) explanation, vacant lands contain various unutilized or underutilized parcels, such as recently razed land, derelict land, land with abandoned architectural structures, brownfields, green fields, and perimeter agricultural or uncultivated land. The vacant land is not always damaged or cannot be used due to various hazards or limitations (Pagano & Bowman, 2000). As Bowman & Pagano (2004) cited, one medium-sized Southern city attempted to inventory the city’s vacant lands. It classified a parcel as vacant if it met one of the following criteria:

1. The parcel had a building value of zero dollars in the local tax assessor’s records.
2. The parcel was a tax parcel without a structure.
3. The parcel was a city-owned property considered underutilized and developable, such as a surface parking lot located in the downtown area.

This shows that the term “vacant land” is flexible. The Texas Property Tax Assistance Property Classification Guide (2022) classifies vacant lots as areas designated for potential building sites or reserved for recreational use. Notably, these vacant lots have no specified minimum or maximum size requirement.

Vacant urban land is identified in these five different categories by Northam (1971): (1) Remnant parcels, (2) Unbuildable parcels, (3) Corporate reserve, (4) the vacant parcel held for speculation, and (5) institutional reserve. Kim et al. (2018) defined four types of **urban vacant lands** with their potential, and these are expected to assist designers, planners, and municipalities dealing with urban vacant land:

1. Post-industrial sites as public amenities
2. Derelict sites as community assets
3. Unattended with vegetation sites as natural assets
4. Natural sites and transportation-related sites such as green networks

Cianfarani et al. (2023) defined urban vacant land as encompassing public and private lands within the city core that have no area or width limitations and lack permanent buildings. This definition includes various scenarios, such as formerly developed lots, never-developed parcels, and underutilized parcels with minimal development, such as surface parking areas (Cianfarani et al., 2023).

In general, leftover means something that remains unused or unconsumed (Merriam-Webster), so in this context, **leftover space** can be defined as the area that is not consumed or used. Luo & Wit (2022) define leftover spaces as urban interstices not designated or managed as

open spaces but open to spontaneous socioecological appropriation, complementing traditional urban open spaces. They define ‘vacant land and abandoned buildings’ as a subcategory of ‘leftover space,’ specifying it as currently unused space. Other subcategories of leftover space include ‘brownfields,’ ‘underutilized or neglected urban spaces,’ and ‘spaces created by urban infrastructure,’ such as highway underpasses or railway embankments.

Trancik (1984) defined “**Lost space**” in Finding Lost Space as “the undesirable urban areas that need redesign-antispace, making no positive contribution to the surroundings or users.” This place is disconnected from the users, pedestrian flow, or even the city itself. This space includes abandoned waterfronts, train yards, vacated military sites, industrial complexes, surface parking lots, freeway edges, deteriorated parks, or marginal public housing projects (Trancik, 1984). In other words, lost space is a space within the city created and neglected for several reasons and does not positively impact the people (Trancik, 1981). Trancik (1984) explains five significant factors that can cause lost space in cities:

1. An increased dependence on the automobile
2. The attitude of architects of the Modern Movement toward open space
3. Zoning and land-use policies of the urban renewal period that divided the city
4. An unwillingness on the part of contemporary institutions – public and private – to assume responsibility for the public urban environment
5. An abandonment of industrial, military, or transportation sites in the inner core of the city

Nevertheless, many researchers consider this space a latent resource that can be redeveloped for urban vitalization (Trancik, 1984).

Some researchers use the term “**incidental space**.” As cited in Stanley et al. (2012), incidental space is described by Garde (1999) and Al-Hagla (2008) as “any green or grey space located on the margins of other spaces or buildings that are either ignored or not intended for a specific use other than safety, visual amenity, or physical separation.” Abd El Gawad et al. (2019) adopted the term “**neglected urban open spaces (NUOS)**,” which refers to unoccupied and purposeless space as an urban void within the urban fabric of cities that become unsystematic and severed; NUOS includes leftover space and vacant lands.

In this research, the definition of vacant land is primarily based on the adaptation of Cianfarani et al. (2023). However, it includes vacant parcels with abandoned structures. Vacant land encompasses both publicly and privately owned unused or abandoned parcels within the city without area or size limitations. It includes formerly developed lots, never-developed parcels, and underutilized parcels with minimal development, such as surface parking areas and other similar conditions.

2.3.2. Potential of Vacant Lands

Vacant lands can cause adverse effects on the community, but not all vacant lands lead to urban decline (Lee & Newman, 2019). Newman et al. (2016) explained that vacant land and abandoned structures are described negatively in many kinds of literature; at the same time, they are also considered potentials that can be transformed into green infrastructure or developed into various developments. It has the possibility of a potential redevelopment area. Many researchers tried to redefine urban vacant lands for urban and environmental planning resources. For

example, urban “voids” are among the most critical vital resources and a valuable component of significant benefits, representing great development opportunities (Omar & Saeed, 2019).

While traditionally seen as problematic, vacant land is increasingly viewed as a resource that can provide opportunities for social and ecological processes that sometimes change due to the physical increase in vacant lands due to deindustrialization (Németh & Langhorst, 2013). In the U.S., there was a tendency for most urban vacant land to be recognized only in terms of its current highest and best use from an economic perspective and neglected when it is not very developable (Kim et al., 2018). Kim et al. (2018) further emphasized the limited knowledge of the potential uses of various types of urban vacant land, and this lack of understanding often leads researchers to overlook and undervalue the urban vacant lands within the urban landscape despite their valued ecological and social features.

However, Kim & Kim (2012) described that urban leftover spaces have opportunities for redesign and adaptive reuse, socially and ecologically. Thus, interest in this is rapidly increasing, especially among design experts and scholars (Kim & Kim, 2012). According to Pagano and Bowman (2000), vacant land and abandoned structures can be viewed as opportunities to promote greater density within urban areas and serve as instruments of change capable of accelerating economic growth. According to Newman et al. (2016), data showed that an average of 16.7% of the land area in large cities in the U.S. was considered vacant. Despite 71% of cities reporting a decrease in vacant land and 29% reporting an increase, the average percentage of vacant land remains significant.

As Abd El Gawad et al. (2019) emphasized, neglected urban open spaces as leftover spaces can be afforded as successful and productive spaces by adopting various place-making approaches. Northam (1971) stares at stocks of vacant urban land as a potential resource with

appreciable value to afford additional urban space needs. Luo and Wit (2022) described vacant land as a blank canvas, which could offer opportunities for creative design interventions to transform the space into a functional and meaningful place for the community.

Branas et al. (2018) discovered that the greening and cleanup of vacant lots in Philadelphia significantly enhanced community safety. These interventions led to a 58% reduction in outdoor safety concerns, a 76% increase in outdoor relaxation and socializing, and a 36.8% decrease in crime perceptions, along with a 39.3% reduction in vandalism (Branas et al, 2018). Consequently, overall crimes, gun assaults, and burglaries decreased by 4.2%, 2.7%, and 6.3%, respectively (Branas et al., 2018). In the same study setting (South et al., 2018), the greening intervention was particularly effective in reducing feelings of depression and worthlessness, while the trash cleanup intervention did not yield the same effect. Visible signs of neighborhood investment, such as a newly greened vacant lot, played a crucial role in these improvements. These findings suggest that remediating blighted urban spaces is a cost-effective and scalable method to enhance mental health.

2.3.3. Repurposing Urban Vacant Land

Various methods have been discussed to utilize vacant land that is challenging to dispose of, but finding a long-term solution can be challenging. Efforts have been made at various levels to reuse vacant land strategically. According to Newman et al. (2016), many local officials need help managing their growing vacant land in cities. Simultaneously, cities facing a decrease in the supply of vacant land over the last decade have collaborated with the private sector to address issues related to vacant and underutilized lands. As cited by Stanley et al. (2012), data on laws and plans to minimize wasted space were identified, including information on special residential types that altered the nature of adjacent open spaces. Although many cities have invested

significant resources in alleviating public annoyances related to city vacant lands, much of the attention has led to short-term solutions rather than long-term ones (Pagano & Bowman, 2000). Achieving a steady and sustainable outcome requires long-term solutions for repurposing vacant lands.

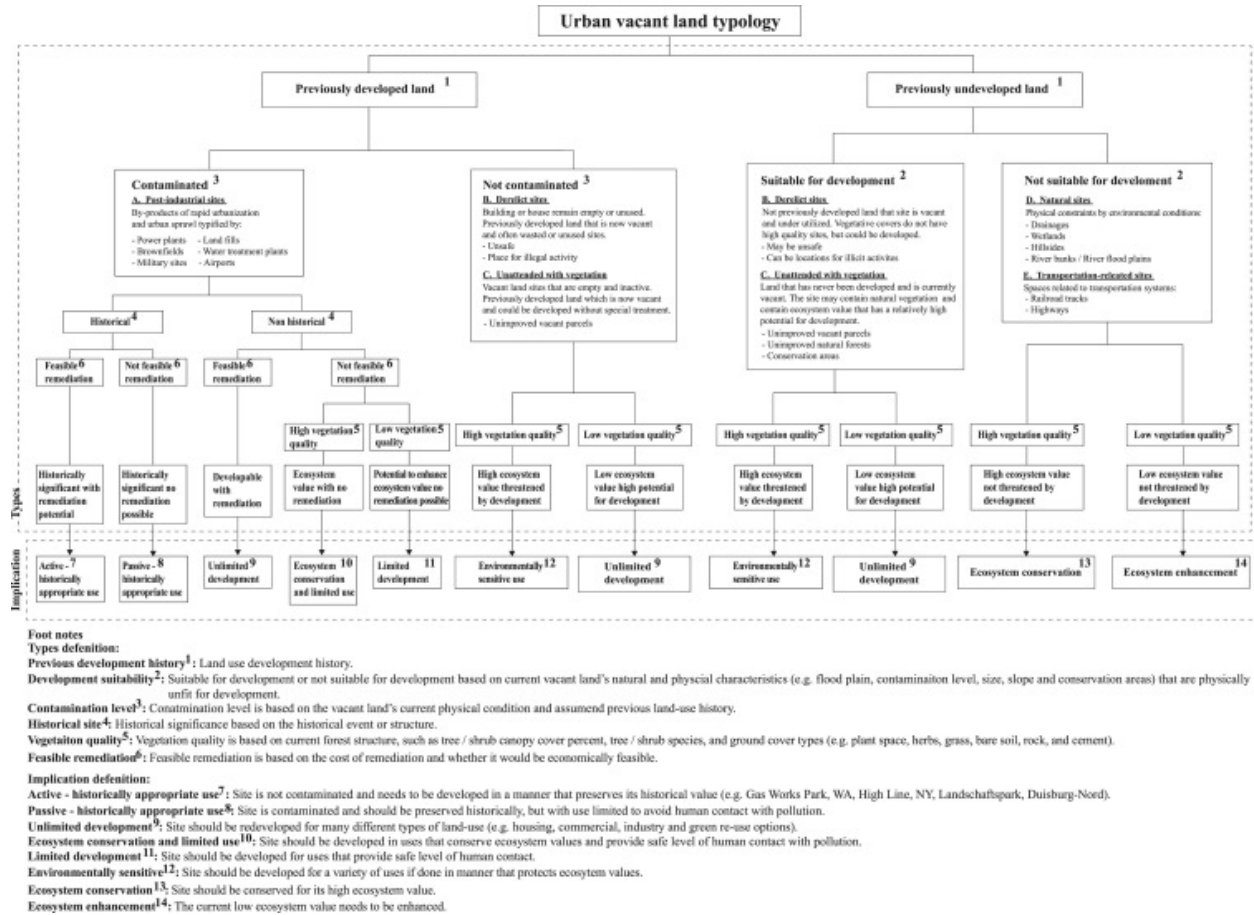
While vacancies have traditionally been viewed negatively, they are now gaining attention for their positive impact as green infrastructure and potential community spaces (Popper & Popper, 2002; Schilling & Logan, 2008). However, opportunities to utilize these vacant lands are different across regions and policies. Lee and Newman (2019) pointed out that parcel size, ownership, and designated land use could affect the possibility of developing vacant lands. If cities did not have high portions of vacant lands as civic lands, these neighborhoods might have requested more of a bottom-up approach to repurpose existing vacant properties (Lee & Newman, 2019).

A recent trend in resolving the issue of vacant lands is attempting to utilize and develop unused spaces to serve the best interests of the public realm through direct community investment (Abd El Gawad et al., 2019). As Kim et al. (2018) stated, vacant lands could be adapted as resources to suggest alternative, creative ways to regard landscape design and amenities as urban open spaces in cities; thus, urban vacant land could be redefined as crucial resources when considered for potential redevelopment.

Lee & Newman (2019) suggested six vacant land typologies as a diagnostic tool to identify land characteristics and propose repurposing and management strategies for city planning: (1) Dormant VL; (2) Civic VL; (3) Recreational VL; (4) Remnant VL; (5) Floating VL; and (6) Reserved VL. However, this diagnostic tool is only sometimes correct in different conditions. However, various contexts and circumstances of cities should be considered in the design and

planning processes. Kim et al. (2018) also suggested urban vacant land typologies and their potential implications for designers, planners, and municipalities, as described in Figure 3.

Figure 3 Proposed urban vacant land typology and implications (Source: Kim et al., 2018)



2.4. Urban Design Foundation

Community identity helps attract people to a place or city, and it is necessary to make a thriving place in landscape architecture and urban design. As cited by Kaymaz (2013), the prime activity that generates identity is “being in relation”, as the uniqueness of an entity can be understood through its interactions with others. Urban design refers to the manipulation of the physical environment to achieve multiple objectives for diverse clients (Owen, 2019). Hu and Chen (2018) characterized urban design as a field encompassing the planning and design of

urban spaces, including streets, buildings, parks, and public areas. It involves addressing human perception and behavior, considering impacts at various scales, and engaging in a public decision-making process (Owen, 2019). Urban design, according to them, plays a crucial role in shaping the sense of place by crafting environments that are not only livable and attractive but also imbued with meaning (Hu & Chen, 2018). Owen (2019) suggested that urban design could be viewed as an approach to addressing challenges in physical planning rather than as a distinct discipline. Furthermore, urban design offers valuable tools and methods that can be applied across various planning and design fields.

2.4.1. Cultural and Social Sustainability

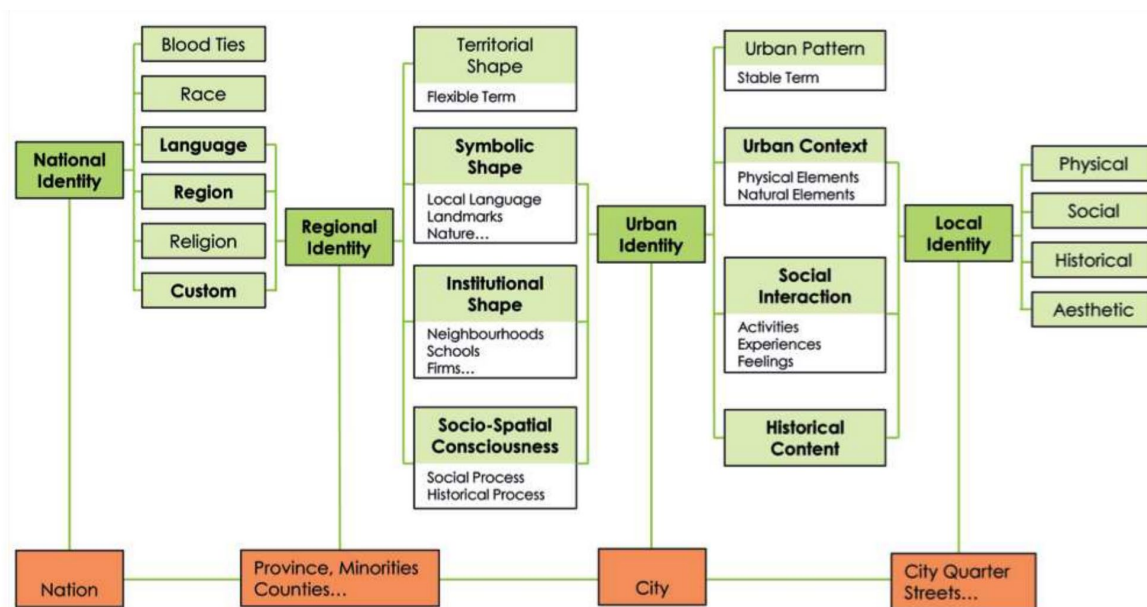
Creating a sense of place is a crucial factor in constructing residents' sense of belonging and forming an attachment to space or a city. The concept of a sense of place is intricate and interdisciplinary, shaped by the interplay of physical and perceptual attributes of a location, along with social and cultural influences (Hu & Chen, 2018). Hu and Chen (2018) defined the sense of place as a concept capturing people's emotional attachment to a location and its impact on their behavior and well-being. They proposed a method for understanding the relationship between urban design and Sense of Place (Hu & Chen, 2018). The framework analyzed a place's four physical characteristics (form, function, meaning, and context) and four perceptual qualities (identity, legibility, coherence, and diversity). It examined how they contributed to the Sense of Place.

A quality space is characterized by a keen sense of place, often featuring vibrant, distinctive, engaging, and visually appealing elements, frequently including public art and creative activities (Wyckoff, 2014). These spaces are people-friendly, safe, walkable with mixed-use, and attract both people and businesses (Wyckoff, 2014). Wyckoff (2014) analyzed the critical characteristics

of a quality place: Mixed-uses, Quality public spaces, Broadband enabled, Multiple transportation options, Multiple housing options, Preservation of historic structures, Community heritage, Arts, culture, and creativity, Recreation, and Green spaces.

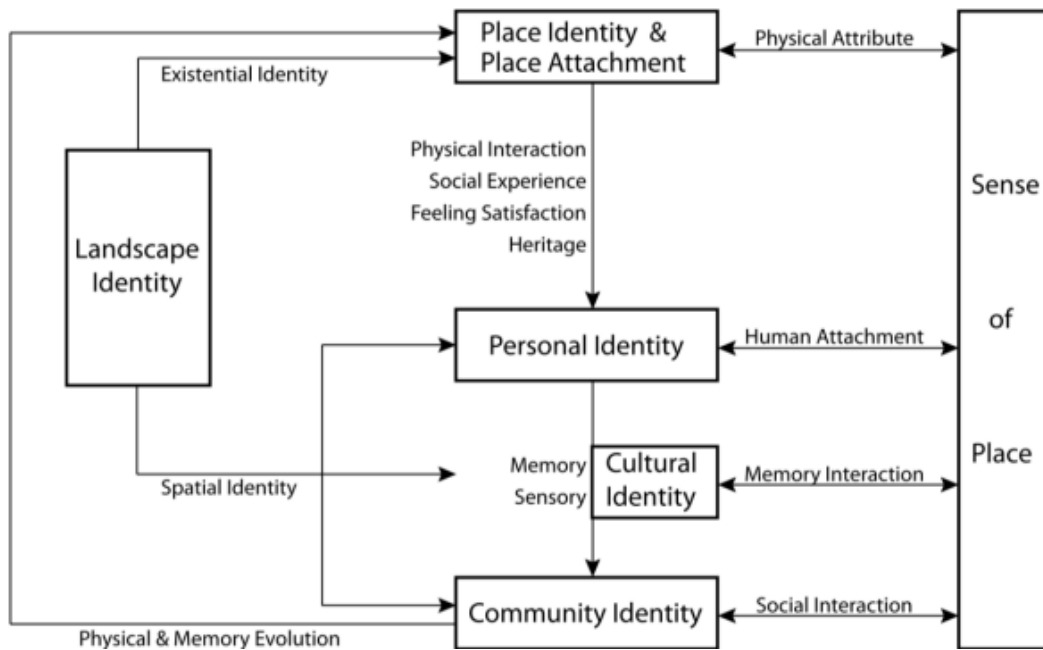
Defining identity is different due to the scope of its level and scale (e.g., national identity, regional identity, urban identity, or local identity) (Shao et al., 2017). However, identity is a significant factor in providing social and emotional benefits to the community. Shao et al. (2017) informed the different levels of identities in the landscape study (Figure 4). They redefined local identity as “small-scale places, such as city quarters or street level, to provide features that create a recognizable image of the place and its residents to differentiate from other places” (Shao et al., 2017). They elucidated that local identity evoked a distinct sensation through physical, social, sensory, and memory perspectives, encompassing positive and negative emotions (Shao et al., 2017).

Figure 4 Diagram of different level of identities in landscape study (Source: Shao et al., 2017)



According to Shao et al. (2017), local identity can be defined as a unique, noticeable, and stable combination of features in a small-scale place, such as a city street that stands out from others. Various other types of identity are deeply connected to community identity. Community identity is created by combining personal identity and cultural identity with attachment to the community and experiences with memories or sensations. All of these processes are cyclical, and in this process, a sense of place connects people with not only the physical environment of a place but also its social and emotional aspects (See Figure 5).

Figure 5 Different Identities' relationship and cycle (Source: Shao et al., 2017)



2.4.2. Placemaking and Public Realm in Urban Context

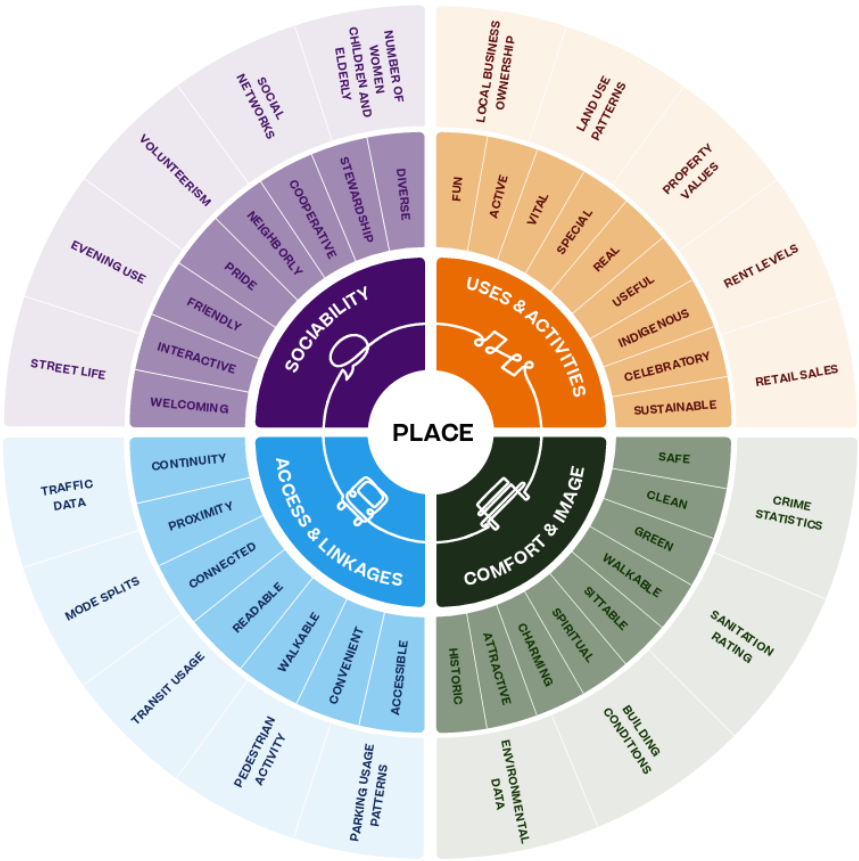
Place-making is one of the most essential strategies to increase community identity and placeness in landscape architecture, urban planning, and urban design. Place-making denotes a collaborative process through which individuals work together to mold their public spaces, aiming to optimize communal benefits. This approach has garnered increasing favor among urban planners and designers in recent years, elevating the caliber of urban environments and

rendering them more conducive to human interaction and well-being (Project for Public Spaces, 2022; Urban Design Lab, 2023). Wyckoff (2014) explained placemaking as creating quality places that attract people to live, work, play, and learn. In this context, the critical aspect is that placemaking is conceived as a singular process to generate a “quality place.” However, fundamentally, it should culminate in establishing a robust sense of place.

The Urban Design Lab (2023) recommended three fundamental placemaking principles: people-centered design, mixed-use development, public participation, and sustainability. Madden (2018) identified 11 critical elements for successful placemaking. These elements involve understanding the community, creating a place, collaborating with partners, observing how people use spaces, having a community-driven vision, starting with minor improvements, promoting interactions, overcoming obstacles, aligning form with function, recognizing that money is not the only issue, and embracing the idea that placemaking is an ongoing process that never truly ends (Madden, 2018). These principles are crucial for transforming public spaces into vibrant, community-focused places. Figure 6 illustrates a tool called The Place Diagram, which was created to assist communities in assessing places. The diagram features three concentric rings:

- The inner ring represents the essential attributes of a place.
- The middle ring signifies its intangible qualities.
- The outer ring denotes the measurable data related to the place.

Figure 6 Place-making criteria required to make a great place. (Source: www.pps.org.)



Placemaking prioritizes the community’s needs and desires over other infrastructure, resulting in the design of inclusive public spaces that are comfortable, safe, and accessible, reflecting the community's unique identity for all its members (Urban Design Lab, 2023). To achieve these goals, placemaking encourages considering mixed-use development, which helps to reduce car dependence and encourages people to walk, bike, and take public transportation to create a people-centric network and accessibility. When considering sustainability in placemaking, a city can enhance residents’ quality of life and bolster its urban image by creating a more resilient and livable environment. This, in turn, can stimulate the local economy by attracting tourists and businesses. Utilizing various communication methods to incorporate the

community's opinions throughout this process can enhance awareness and a sense of ownership regarding public spaces, thereby promoting community identity.

However, there are also challenges and limitations to achieving successful placemaking. Urban Design Lab (2023) emphasizes significant challenges related to funding and investment, as well as political will, concerning the construction of infrastructure, design, and maintenance. A different approach is required among the various goals and challenges of placemaking, especially in repurposing vacant land in urban areas. Abd El Gawad et al. (2019) specifically adopted Wyckoff's (2014) placemaking typologies to propose placemaking forms for the revitalization of neglected urban open spaces to create successful places (Figure 7). The four primary placemaking approaches are Standard Place-making, Strategic Place-making, Creative Place-making, and Tactical Place-making, each serving distinct purposes. Standard place-making is employed to enhance communities with insufficient livable public spaces.

In contrast, strategic place-making targets specific goals to achieve economic or infrastructural development objectives, mainly focusing on central areas. Creative place-making aims to revitalize community identity by creating a cultural environment via cultural activities, structures, and streetscapes. Finally, tactical place-making is used to implement new policies, promote small-scale development at a lower cost, and overcome community funding challenges (Abd El Gawad., 2019). These placemaking strategies can be utilized independently or in combination, depending on the certain goals and context.

Figure 7 Four types of placemaking strategies. (Source: Wyckoff, 2014)



Despite these challenges, successful placemaking projects can be ensured through community engagement, technology integration, diversity and inclusivity promotion, and balanced development of economic and social needs (Urban Design lab, 2023).

The public domain in a city encompasses diverse spatial elements, including squares, streets, parks, intermediary spaces, third places, and virtual environments (Tigran et al., 2020). Urban design grapples with the intricate connections between buildings and the various open public spaces that constitute the public realm (Tigran et al., 2020). On a broader scale, formal public spaces have traditionally served as perceived centers in various settlements, playing a crucial role as focal points for public life, activities, and events. On a smaller scale, these spaces may function as places for relaxation, socializing, or recreation, serving as visual breaks in the urban

flow of streets (Carmona, 2018). According to Tigran et al. (2020), this involves navigating the complex relationships within built and unbuilt spaces and the entities responsible for them. The essential quality of the public realm lies in its social cohesion, fostering sociability while combating physical and human isolation (Tigran et al., 2020). It catalyzes vibrant and robust public life, often synergizing with open spaces like squares, bazaars, and markets (Tigran et al., 2020).

Carmona (2018) underscores that successful public spaces are characterized by being evolving (whether formal or informal), diverse (avoiding a one-size-fits-all approach), free (with secure rights and responsibilities), delineated (clearly public in use), engaging (designed for active uses), meaningful (incorporating notable amenities and features), social (encouraging social engagement), balanced (considering both traffic and pedestrians), comfortable (feeling safe and relaxing), and robust (adaptable and distinct in the face of change).

Tigran et al. (2020) propose general principles to foster vibrant and sustainable public spaces, including the following key points:

1. Municipalities aiming to enhance public spaces should prioritize participation, collaboration, and integration as essential tools.
2. Public spaces, functioning as meeting places, are crucial in promoting integration.
3. The success of public spaces hinges on their social and physical diversity, coupled with responsiveness to local needs embedded in the social and cultural context.
4. Sensitivity to the local context is consistently crucial in urban renewal and transformative processes.

5. Market-driven processes may lack space to facilitate social life improvements, exerting pressure on governmental resources.

On the local level, it is essential to consider the following factors (Tigran et al., 2020):

1. Diversity in Public Space: This includes diverse transport modes, focusing on pedestrian-friendly streets.
2. Influence of Movement Patterns and Urban Context: Movement patterns, furniture, and the overall urban context significantly impact place expectations and perceptions.
3. Civic Involvement: Involving the community in the built environment has the potential to create a strong sense of attachment.
4. Sociability Evaluation: Evaluating the sociability of places is a crucial tool for creating successful urban design.
5. Infrastructure for Social Media Use: For social media use in public spaces, essential infrastructure such as WIFI and charging stations and designs that facilitate behavior connected to social media use are needed.
6. Planning for Specific Groups: Planning for specific groups, such as the elderly, requires acknowledging the complexity and diversity within these groups.
7. Effects of Mega Events: When cities focus on mega events for branding and social sustainability, it is crucial to understand the effects of exclusiveness and exclusion manifested in public spaces.

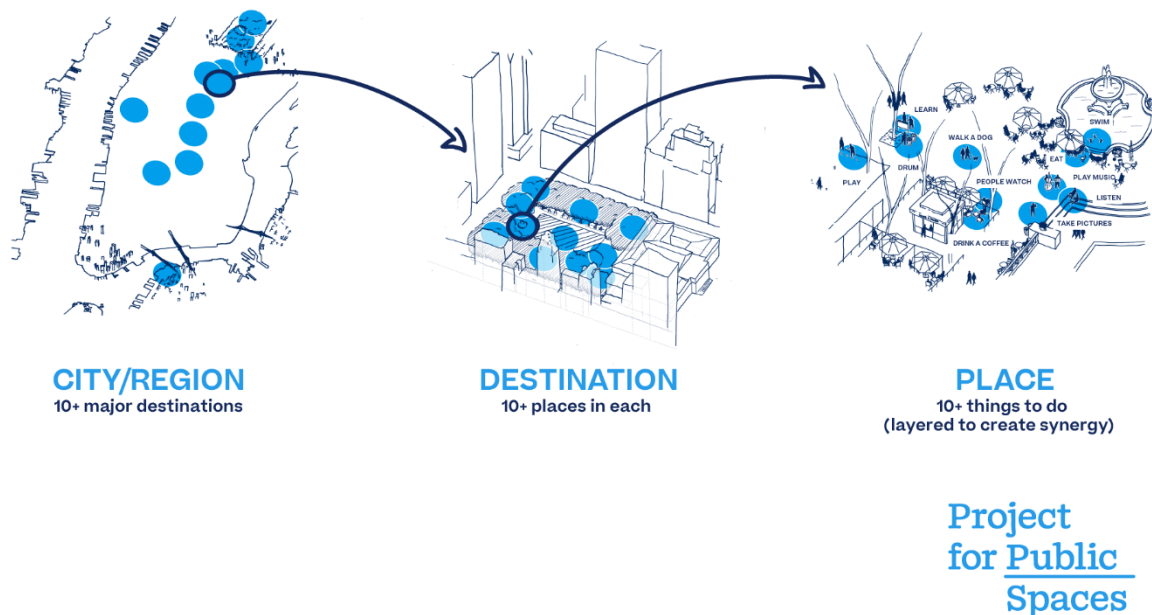
The Project for Public Spaces has introduced the Power of 10+ approach as a comprehensive strategy for fostering a robust placemaking process. The Power of 10+ is a conceptual

framework developed by PPS to assess and facilitate placemaking at various scales within cities (PPS, 2022). This approach emphasizes that a great place should provide at least ten things to do or ten reasons to be there (Placemaking Chicago). These ten elements can encompass a variety of features, including seating areas, interactive art installations, music, food vendors, educational opportunities about local history, and access to books (Placemaking Chicago). Figure 8 shows the example of the Power of 10+ project.

Figure 8 A visualization of the concept of Power of 10+, using Bryant Park and New York City as examples (Source: Project for Public Spaces).

Power of 10+

How Cities Transform Through Placemaking



Crucially, the approach underscores the importance of community involvement in generating ideas for these places, ensuring each location is unique to its specific context (Placemaking Chicago). It highlights the notion that a single dominant use in a particular place is insufficient to build a great city. These ten great places are envisioned to define people's experiences of a city

being dynamic enough to attract diverse user groups, encouraging repeated visits, and perpetually evolving (PPS).

The Power of 10 ideas motivates local citizens, inspiring them to transform their surroundings (Placemaking Chicago). By initiating efforts at the most miniature scale, the approach suggests that gradual, incremental changes can lead to significant transformations (PPS). It provides a tangible goal for the community, helping them visualize the steps required to make their locality exceptional (Placemaking Chicago).

2.5. Plan for the City of Arlington

The City of Arlington has developed several plans to enhance the quality of life in the community. These comprehensive documents serve as roadmaps, outlining the city's vision for the future. This study can extract valuable insights into the city's priorities, challenges, and opportunities by closely examining these plans. Such insights can prove highly relevant to the study's objectives. This chapter explores three pivotal plans' key components and goals: the City of Arlington Downtown Master Plan, the 2015 Comprehensive Plan, and the 2020 Parks, Recreation, and Open Space Master Plan.

According to UTA Press (2018), there is an identified issue regarding the lack of a shared identity between Downtown Arlington and the University of Texas at Arlington (UTA), despite the university's proximity to Arlington's urban core. Notably, a portion of the university falls within the Downtown boundary, potentially contributing to Downtown's identity. There is a recognized need for better connections and an enhancement of walkability to attract students from the nearby UTA to Downtown Arlington.

2.5.1. City of Arlington Downtown Master Plan (2018)

The City of Arlington Downtown Master Plan provides a systematic plan and specialized design guide for the development of Downtown Arlington to cater to the needs of the next generation. The City of Arlington is characterized by its theme, 'The American Dream City,' with solid brand pillars: Diversity, Reach, Education, Aspirations, Metroplex, and Spirit. Each of these pillars represents the initials of DREAMS, as outlined in the City of Arlington Identity Guidelines (2020). Establishing Arlington's identity is crucial for guiding future development and planning efforts. In this context, Arlington aims to be the ideal place for realizing the dreams of its residents.

The goals and strategies outlined in this document demonstrate a clear intention to revitalize Downtown Arlington. The plan's goals, as listed in the City of Arlington Downtown Master Plan (2018), are as follows:

1. Attract more people to live, work, socialize, and recreate in Downtown.
2. Establish the city center as a local and regional destination with a distinct identity.
3. Ensure a robust, resilient economy in Downtown and its surrounding districts.
4. Foster a diversity of housing types at various price points.
5. Develop a critical mass of activity to support existing businesses and residents and attract new entrepreneurs and residents.
6. Activate streets, open spaces, and parks to ensure a safe, vibrant, and livable environment.

7. Strengthen the area as an entertainment destination and encourage and promote Downtown's arts, culture, and music scene.
8. Support civic and community-oriented uses and programs, including a distinct public art program.
9. Create a diverse community that welcomes all residents, employees, students, and visitors.

North Street and Houston Street define downtown Arlington's boundaries to the north, South Collins Street to the east, South Cooper Street to the west, and East Border Street and UTA Boulevard to the south. It serves as Arlington's city center, characterized as a vibrant, diverse, and unique downtown for residents, employees, and visitors. Downtown Arlington is experiencing rapid growth, driven by a collaboration between public and private investments. It has a rich history of sustaining Arlington's art, culture, and businesses and is poised to be at the center of Arlington's development.

Continuous development has led to changes such as forming and activating commercial clusters around Downtown and its surrounding areas. This plan aims to introduce innovation, creativity, and entrepreneurship to promote the ongoing growth of Downtown Arlington.

The 2004 Downtown Master Plan laid the foundation for Downtown Arlington, bringing developments such as the New George W. Hawkes Library, Founder's Plaza, Levitt Pavilion, Downtown 101 Center, and extensive public arts. The most recent master plan focuses on developing communities and people-centered resources based on the previous master plan.

The plan covers various aspects, including the current state of the commercial market, housing, land use and zoning, design and character, branding, identity and wayfinding, mobility and circulation, and infrastructure.

The existing conditions market assessment document attached to this master plan identifies two major development trends in and around Downtown Arlington: multifamily housing and food and beverage businesses. The report emphasizes priority strategy areas, including Placemaking, Housing diversity, Broadening the Downtown customer base, and Establishing a critical mass and variety of food and beverage businesses. Enhancing connectivity is essential for supporting these strategic goals.

Downtown Arlington is strategically located between the city's major employment centers: UT Arlington and the expanding Entertainment District. There is a significant opportunity to grow and diversify office, retail, and commercial services in Downtown Arlington to capture a substantial portion of the dynamic Metroplex economy.

While approximately 60 percent of Arlington's housing stock consists of detached single-family residential homes, the development of multifamily residential units has outpaced single-family housing since 2015. The development of mixed-use properties, previously rare in Arlington, is now flourishing around UTA, adjacent to Downtown Arlington. As Downtown Arlington transforms into a denser, more walkable urban core, the demand for various housing options will continue. The area is well-positioned to accommodate these housing products as it evolves into a denser urban center with around-the-clock activity.

Three major zoning district typologies - the Downtown Business Zoning District (DB), the Downtown Neighborhood Overlay (DNO), and a Tax Increment Reinvestment Zone (TIRZ) - are

key to creating a diverse, relatively dense mix of uses in Downtown. These zones emphasize creating a pedestrian-friendly, mixed-use environment with distinctive, high-quality character, new residential development, and increased pedestrian activity.

There are various characteristics and existing conditions that present both opportunities and constraints for Downtown Arlington. These include a mix of architectural styles, a predominance of low-scale buildings, contemporary mixed-use development, relatively low building heights, and a lack of ground-floor activation. Surface parking occupies much of Downtown, creating an environment dominated by automobiles and gaps in the urban street wall. The extensive number of surface parking lots contributes to impervious surfaces, leading to the urban heat island effect and detracting from a comfortable pedestrian environment. Surface and on-street parking options are underutilized, presenting opportunities for infill development and temporary activation through community events and placemaking installations. Vacant and developable land is scattered throughout Downtown, offering development opportunities.

Downtown Arlington's street tree canopy is limited and inconsistent, and the area needs more parks and open spaces, as well as gaps in the urban fabric, such as vacant parcels and surface parking lots. Recent restaurant developments with outdoor patio seating have contributed to a more vibrant street frontage in some areas.

The pedestrian network needs to be connected and consistent regarding mobility and circulation. Auto-dominated roadways and rail lines pose significant barriers to pedestrian activity and connectivity. While traffic volumes within Downtown are moderate, many arterial roads are dominated by automobiles, which detracts from the walkability of the urban environment. A shortage of complete sidewalks, crosswalks, shade, and lighting contributes to an unsafe and uncomfortable walking experience. Gaps in the bicycle network, particularly in the

east-west direction, are evident. Existing bikeways in Downtown are on-street facilities without buffering or protection. Center, Mesquite, and Abram Streets have low traffic volumes given their capacities. Downtown Arlington provides a solid foundation for creating a connected, multimodal transportation network but will require strategies and investments to restore key pieces of the historic grid.

Improving the public realm and enhancing the pedestrian experience are essential for future design guidelines. Branding, identity, and wayfinding are critical for strengthening Downtown's identity. Safety improvements are needed to provide a safe and comfortable walking experience, focusing on lighting, sidewalks, shade, and other amenities. The right-of-way provides adequate space to upgrade the pedestrian environment, reduce impervious surfaces, and use space more effectively.

Community engagement and surveys have revealed several common responses, including a desire for outdoor destinations such as public plazas, playgrounds, dog parks, sidewalk cafes, and public amenities such as landscaping, public art, misters for hot days, and public restrooms. There is also a demand for more restaurants and shopping options, especially locally owned independent businesses and grocery stores. Larger buildings with housing and offices, more festivals and events, and a celebration of Arlington's history and culture were also highlighted. The key finding from community engagement is the aspiration to create a lively, bustling, and active city center.

Several goals in the plan contribute to making Downtown Arlington a walkable, vibrant, and economically strong urban center. Some of the key actions include:

1. Improving the connectivity and walkability of Downtown.

2. Collaborating with UTA and other organizations.
3. Encouraging small, local, and regional businesses to seek land, redevelopment, or adaptive reuse opportunities.
4. Prioritizing pedestrian-friendliness by re-establishing vehicular connections and enhancing pedestrian and bicycle connectivity.
5. Enhancing the physical and visual connection through consistent streetscaping and landscaping.
6. Exploring property assemblage opportunities to facilitate master development.
7. Developing green spaces on city-owned property for multiple purposes.
8. Ensuring effective signage and wayfinding to help people navigate Downtown.
9. Identify shared parking opportunities among downtown uses, including surface parking lots in the near term, and design structured parking.
10. Considering branding and public art implementation as placemaking strategies to make Downtown iconic.

This plan aspires to transform Downtown Arlington into a more vibrant, connected, and welcoming hub that aligns with the aspirations of its community and the values of The American Dream City.

**2.5.2. 99 SQ Miles: A Vision for Arlington’s Future, The Comprehensive Plan
(2015)**

Downtown Arlington, also known as University Neighborhood, was recognized in the 2015 Comprehensive Plan as a high-intensity future development area. This neighborhood boasts various uses, including retail stores, educational facilities, office buildings, government facilities, cultural establishments, entertainment venues, and numerous residential constructions.

This plan aims to create a diverse community where people want to live, businesses flourish, and our children and visitors desire to return. It outlines specific goals: (1) valuing our neighborhoods, (2) improving transportation, (3) promoting business growth, (4) safeguarding our resources, and (5) responsible land development. Strategies to achieve these goals are related to enhancing the community realm:

1. Create places where people want to be,
2. Maintain and enhance the quality of life and appearance in neighborhoods,
3. Preserve the city’s historic resources and community landmarks of recognized significance,
4. Revitalize key economic centers into vibrant destinations,
5. Create amenities and assets that secure Arlington’s position as a significant activity hub in North Texas,
6. Preserve natural areas and public open spaces,
7. Conserve natural resources and energy,
8. Encourage appropriate redevelopment and reinvestment that creates lasting value and

9. Improve the visual appeal within and around residential and commercial developments and along city corridors.

The comprehensive plan incorporates seven catalyst projects designed to have relatively short-term and positive effects. Among them, the Neighborhood Program aims to enhance the quality of life and foster a vibrant community through community engagement and new relationships. Corridor Beautification is a major project to improve the city's aesthetics and unify the corridor's appearance through affordable, low-maintenance landscaping. The Green Network Project is vital in materializing the 2011 Hike and Bike System Master Plan and connecting scattered communities through a green approach. The Central Library and 101 Center project seeks to make Downtown Arlington economically and culturally vibrant by providing a library and a new mixed-use development for downtown revitalization.

Until now, Arlington's transportation planning has focused on vehicular circulation; however, the importance of pedestrian and bicycle travel has emerged. Establishing a well-connected bicycle and pedestrian network can significantly enhance city-wide connectivity. The linear trail system is a crucial strategy in providing connectivity and recreational opportunities while preserving the existing environment.

Much of the city's development and related infrastructure is aging and needs improvement. Recent downtown development projects have generated interest in this area. A focus on creating better connections and attracting professional services, residential offerings, shopping, and lodging is essential to creating a vibrant center for employment, housing, and nightlife. Creating a clear framework for advancing redevelopment projects that meet economic development goals is crucial to achieving better economic development.

According to the plan's carrying capacity analysis, the Downtown/University area is indicated as a suitable location for development within the policy environment. It is considered a high-intensity development area in Future Development Areas. The plan encourages a mix of residential and mixed-use buildings that should include retail, educational, office, government, cultural, and entertainment venues to serve those living in and around the area. To serve this region, pocket parks, public plazas, recreation centers, and trails are recommended to provide public spaces and establish a regional destination. In terms of development, the following goals can be considered for Downtown area development: creating a walkable, pedestrian-friendly community comprised of diverse, interconnected neighborhoods, ensuring that residents have access to vibrant destinations, open spaces, recreation amenities, and other land uses that support a sustainable community, and developing in a way that balances the city's economic development goals with the preservation of natural resources.

The plan highlights the role of the natural environment, including open spaces, in softening the built environment and providing health benefits to residents. A green network can create an integrated, seamless transportation and recreation framework that promotes hiking and biking as visible transportation alternatives throughout the city. Linear parks and trails serve as recreational amenities and connect people and developments. Streetscape improvements are integrated into new developments, redevelopments, and substantial expansions to increase the visual appeal within and around residential and commercial developments and along city corridors. Landscaping medians is one way to preserve and enhance the visual character of corridors.

In conclusion, the plan positions Downtown Arlington as a catalyst for redevelopment, emphasizing the importance of mixed-use development, green spaces, and community engagement to create a dynamic and livable city center.

2.5.3. Arlington Parks, Recreation and Open Space Master Plan (2020)

The city of Arlington published its parks, recreation, and open space master plan in 2020 to support Arlington’s Comprehensive Plan directly. The circumstances have changed since the last 2004 park and recreation plan, and the plan has changed accordingly. Arlington’s growing pattern was expanded to include the southeast part. Demographic-wise, the total population increased; however, the growing percentage of the senior population also increased. Diversity of race and ethnicity increased from nearly 90% of white people in late 1980 to almost 60% of white people. Arlington’s household median income decreased by 2.5% from 2000.

As part of the master plan update, Arlington conducted a citizen survey, yielding ten significant findings (City of Arlington, 2020):

- Usage of parks is high with reasonable satisfaction
- Playgrounds, natural areas, picnic areas, and walking and biking trails are the most essential facilities
- Exercise and fitness, community events and festivals, nature programs, and youth sports leagues are the most critical programs and activities
- More than 80% of the citizens feel overall park quality, maintenance, and safety are “good” or “excellent.”

- Citizens continue to show strong support for parks and recreation, with 54% saying they are “very likely” and 38% “likely” to vote in favor of future bond referendums
- 57% feel that parks and recreation facilities and programs have improved over the past five years, compared to only 7% who feel they have declined
- 65% consider the money they pay versus the parks and recreation services provided to be a “good” or “great” value
- The most essential actions that respondents would support with tax dollars include renovating existing facilities, improving connectivity via the hike and bike network, developing new facilities in areas with unmet needs, preserving natural areas and greenways, and acquiring land for future neighborhood park development
- Unmet citizen needs exist for a wide range of parks, trails, outdoor and indoor facilities and programs
- Opportunities exist to grow programs at parks and recreation facilities.

Downtown Arlington falls within the Central Sector, specifically the UTA Subarea, in this master plan. This sector primarily comprises downtown Arlington, the central business district, UTA, single-family, and multi-family residential areas, including student housing. According to the survey, this area's most needed programs and activities are exercise and fitness, community events and festivals, and nature programs. The needs for facilities and amenities include natural areas, natural surface trails, and picnic shelters or pavilions. Regarding facilities, greenways with trails, natural areas, and small neighborhood parks are identified as necessary. The improvement of neighborhood parks is a significant priority in the needs assessment, with particular attention to the roadway and parking lot renovations as notable capital maintenance priorities.

Additionally, UTA facilities and Union Pacific property, among other resource-based assets, were highlighted as intriguing elements.

This master plan's goals are based on analyzing the significant issues and opportunities facing the city, and the department is focused on improving the park system and providing quality recreational programs and services. The broad goals are listed below:

- Connectivity and Equity
- Quality and Facilities
- Healthy Lifestyles
- Environment and Nature
- Community and Character
- Partnerships and Engagement

The strategies to achieve these goals may vary; however, the overarching objective that unites them all is to provide high-quality green spaces relatively evenly throughout Arlington's community, thereby enhancing its residents' quality of life and health through building community. To achieve this goal, improving connections between parks and open spaces and strengthening links between neighborhoods, commercial areas, and communities through green spaces is essential. Developing various activities and spaces for all age groups and introducing a sustainable green approach that enhances community health and social benefits will help improve the physical form and image of the city.

This plan identifies specific outcomes for each theme, establishing a clear connection between the project's goals and priorities. The plan recommends a diverse range of facility

developments and projects to offer new and unique services to the community. Furthermore, it encourages considering multi-generational projects and programs, strongly focusing on safety and security for quality design and service delivery. Sustainability is a crucial aspect of this plan, particularly emphasizing sustainable green design and funding for acquiring natural areas. These initiatives aim to preserve and protect the environment and local ecosystem in Arlington. Additionally, the plan underscores various projects designed to support, attract, and promote social interaction, fostering community engagement from the initial planning stages through maintenance. This approach aims to cultivate a sense of ownership in the park system and provide meaningful public support, input, and engagement opportunities.

2.6. Precedent Studies

The precedent study's objective is to extract insights from previous projects and apply that knowledge to facilitate the development of innovative and practical design solutions. It serves as a bridge between past knowledge and future possibilities and is a vital component of the design process. This segment forms the foundation upon which innovative design solutions can be constructed.

2.6.1. Ricardo Lara Park, Lynwood, California

Ricardo Lara Park is in Lynwood, California. This park is a 5.25-acre and 1-mile-long linear park built in 2015. This project consisted of more than 5 acres of vacant lots along the I-150 freeway, and it was transformed into green open space. This narrow linear park acts as an essential community amenity and works to mitigate stormwater runoff, improve air quality, and

provide multiple outdoor gathering spaces. Figure 9 illustrates the initial condition of the site and the final park design, providing insight into the successful transformation of vacant land.

Figure 9 Urban Vacant Land Transformation to Green Open Space (Source: SWA Group)



ABANDONED EASEMENT BECOMES A PARK

The physical park's shape is divided into five blocks due to the cross streets. However, this weakness was turned into an opportunity for programming each block. Each block has different programs: a dog park, a fitness park, a play park, a community park, and an eco-park. These park programs were constructed through community engagement, becoming a solid-themed park programmed with health, education, play, and connectivity. Figure 10 exhibits one of the programmed parts of the park. These ideas were gathered from community workshops, engagement, and public-private partnerships. Design participants were incorporated into the design process, which helped enhance community identity.

The rainwater capture and retention system helps address vast runoff and previous flooding issues. It also helps to mitigate the urban temperature with climate-adapted vegetation planting and by providing a massive amount of shade coverage with more than 300 new trees; it promotes physical activities and various community programs such as exercise, community gardening,

walking, and biking. The continuous path through the park provides programs such as walking and jogging, a link to a regional bike network, and other neighborhoods.



Figure 10 One of several blocks of Ricardo Lara Park. (Source: SWA Group)

The I-150 freeway is a physical infrastructure barrier that divides the community and cuts through the City of Lynwood. Massive infrastructure created huge unused spaces adjacent to the highway. However, this project turned that vacant easement into a community right-of-way, which provides shaded and accessible public green space. The park is within 100 feet of the freeway, and a 10-foot-tall sound wall along the park's edge was constructed to mitigate noise and air pollutants. This green open space makes connections through surrounding neighborhoods and provides healthier lifestyles than before to the extended, under-served community. While it was challenging due to the location and context, the result dealt with various community needs, issues, and demands.

The City of Lynwood is a diverse neighborhood comprised primarily of residents of color. The main issue in the community was that the neighbors were below the federal poverty level and had low access to safe and equitable outdoor spaces. Overall, LA County had 8.10 acres per 1,000 people of green open spaces, and the city of Lynwood only had 0.57 acres per 1,000 people of green open space. This project now serves over 26,000 residents with environmentally and socially improved green open space.

2.6.2. POPCourts!, Chicago, Illinois

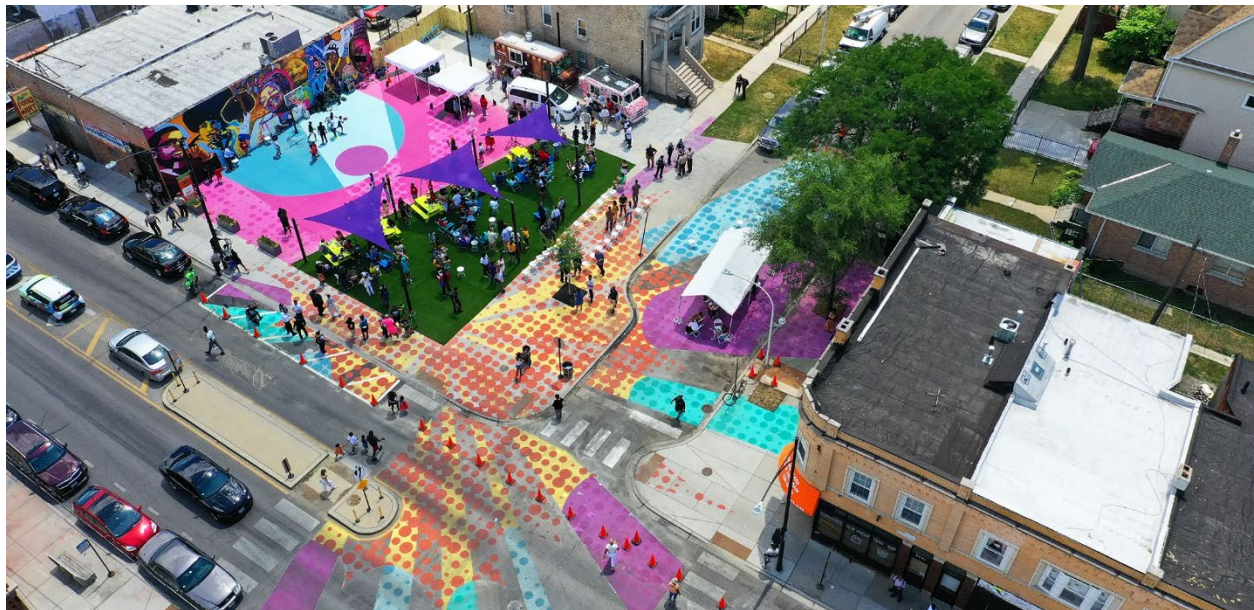


Figure 11 POPCourts! site photo. (Source: Lamar Johnson Collaborative)

The neighborhoods of Chicago each have their distinct personalities, and the Austin neighborhood, where the POPCourts! project is situated in a vibrant African-American cultural community. Figure 11 provides a bird's eye view of the site, showcasing the project's result within its context. The project was completed in 2022 and spans 20,000 square feet, earning recognition as an award-winning endeavor. It is part of a broader plan to enhance the quality of

life, accessibility, visibility, and empowerment within a historically underserved neighborhood (Architizer, 2022).

Prior to the project's construction, the site was characterized by a vacant and underutilized lot with a history of violence and unrest. However, it also held the potential to ignite a community-led transformation of the neighborhood. Consequently, it was transformed into a space for activity, gathering, and commerce. The primary objective of the Austin community was to establish a sense of place and community identity with limited access to public open spaces. The design was meticulously considered, focusing on aesthetics and how people would come together and interact within this space.

Figure 12 Paint Day on POPCourt! and community participants (Source: Lamar Johnson Collaborative)



Throughout the construction and design phases, community members actively participated in painting the pavement and creating murals (Figure 12) to leave their mark on the project. The project comprises three distinct open space zones known as "Courts," each accommodating a

variety of flexible activities that can "pop" up and evolve over time (SWA, 2023). These open spaces include a basketball court, a gravel drive, and a shaded lawn, providing flexibility for various community activities such as sports, farmers' markets, community gatherings, stages, DJ booths, or food truck locations. The municipal authorities emphasized that they aimed to create a "food court" in this green space, allowing people to freely use it without imposing a predefined program. This approach transformed it into a tangible "city corridor" through art and community engagement, demonstrating how thoughtful design and adding value can become tactical.

One of the project's key objectives was to create a space that would highlight Austin's rich arts and culture scene and be the envy of more affluent neighborhoods in the city. It evolved into a source of pride for the community, symbolizing resilience and change and inspiring additional investments along the corridor. Local artists and contractors had the opportunity to showcase their talents through their involvement in the project, underscoring the community's capacity to self-organize. Overall, the project has become a source of pride, and one can sense the residents' enthusiasm and interest in the site.

This project served as the impetus for the introduction of the POP! Program, which is part of the Chicago Recovery Plan. Launched in early 2022, this program aims to assist community-based organizations in revitalizing underutilized land along neighborhood retail corridors (Architizer, 2022). The program is crucial to achieving equitable economic recovery and promoting thriving and safe communities through pop-ups, art, entertainment, gardening, and more. Ten locations were selected, each featuring unique approaches tailored to viability, local needs, and project design. The Chicago Mayor's Press Office announced that public and private investments will support small businesses, foster public realm improvements, restore historic buildings, and promote equity and resilience where needed. So far, POP! Heights, POPGrove,

POPF!t, Winthrop Garden, and others have been completed. Each POP! project has been transformed into a more accessible, creative, and community-oriented space through the participation of community members and local artists, reflecting the community's needs.

2.6.3. Historic Downtown Plano, Plano, Texas

Downtown Plano showcases a pedestrian-centric design rare in the car-dominated state of Texas. Historic Downtown Plano served as the center of a small agricultural community from its establishment in the 1870s until the mid-20th century. People accessed downtown via rail for grocery shopping, hospital visits, school, and government services. After the war, downtown began to decline with the cessation of commuter train operations and the shift of the city's cultural and commercial center to the west in the 1970s. The downtown area began to prosper again in the 1980s with upgrades to sidewalks and streets and establishment of a downtown vision plan. Over the past decade, downtown has transformed into a vibrant urban center with the introduction of new light rail, a variety of shops, housing options, art venues, and restaurants. In particular, the introduction of the light rail in 2002 led to a city centered on public transportation, where people walk more and have several ways to access the city other than by car. This is a representative example of a walkable downtown. Taking advantage of easy access to other areas through light rail, many residents are gathering, and this trend is forming more than 1,000 residences within 0.25 miles centered on DART stations. The strong vision of downtown Plano was achieved in cooperation with city officials, residents, community development organizations, and consultants centered on the biggest goal of 'place-making' (See Figure 13).

Figure 13 Historic Downtown Plano - Preserved historic building and new DART station. (Source: Author)



While the function of the town has been reimagined, many efforts have been made to maintain the unique historic feel of downtown while following contemporary planning practices such as high-density mixed-use development (APA, 2023). Iconic red bricks that can be seen as a symbol of downtown differentiate it from other areas. Buildings built in the 1890s were preserved, while newly built houses and shops were carefully considered not to harm these aesthetics. Although Plano City is car-centric, downtown was designed to be centered on pedestrians and bicycle users. Providing various access options promotes various activities in downtown Plano that occur through diversity in downtown residents and diversity in art. Museums, theaters, festivals, a park, a square, and historic buildings that cultivate all forms of artistic expression, including dance, music, drama, and even culinary arts, implement the unique image of downtown. Sculptures, murals, and other artistic installations represent their unique history and culture and support local artists (See Figure 14).

Figure 14 Historic Downtown Plano - Mural on the building wall showcases the history of Downtown Plano as a Local Art (Source: Author)



One of the most significant factors contributing to the successful transformation of downtown Plano was the initial adoption of an urban development plan for the downtown area in 1912, coupled with the enactment of relevant laws and the seamless collaboration with various community organizations, such as the Downtown Plano Association. Implementing mixed-use zoning has played a pivotal role in offering the area a wide array of services and attractions. Specific urban planning features, including maximum building setbacks, traffic calming measures, and a minimum residential density requirement of 40 units per acre, have all contributed to creating a pedestrian-friendly urban environment (APA, 2023). Furthermore, new planning ordinances are continually being introduced to accommodate innovative placemaking concepts (APA, 2023). Plano is exploring new possibilities for vacant lands on the outskirts of downtown. As a recent development, the city has introduced new regulatory codes to oversee and

permit the establishment of food truck parks. It boasts a diverse community, comprising residents from various backgrounds who live or work downtown. The active involvement of the Historic Downtown Plano Association has been instrumental in driving the area's success (APA, 2023). As a result, downtown Plano has acquired a unique character distinct from the surrounding region.

2.7.Summary

This review lays the theoretical and empirical groundwork for the study's research questions and design proposal. It delves into green open space and urban vacant land, their definitions, impacts, and benefits, and the concepts of cultural and social sustainability, placemaking, and the public realm in urban design. It scrutinizes Downtown Arlington's current plans, focusing on green open space provision and revitalization strategies. It also highlights three successful green open space projects that repurposed urban vacant land and revitalized downtown areas.

3. Methodology

3.1.Introduction

This chapter discusses methodologies to improve the volume and quality of green open space in Downtown Arlington and to study green open space types, design elements, and programs to suggest green open space design for the community. This process used qualitative and quantitative methods of interviewing urban planning experts, user surveys, and data analysis.

This study aims to investigate the potential of vacant land as an asset for improving and expanding green open space within Downtown Arlington and to investigate the perception of experts and potential users on the site. Since the design site is already included in the downtown development plan, this study investigates whether it meets the existing development plans and site conditions proposed by the city of Arlington to propose a better alternative. The three key research questions to achieve the research objectives are as follows:

1. How can urban vacant land be utilized to meet the needs and demands of residents and visitors through green open space design in a city?
2. How can urban vacant land be designed and implemented to enhance green open space in Downtown Arlington?
3. How can the repurposed vacant land enhance community identity and create vibrant community spaces and cultural diversity in Downtown Arlington?

These questions help to explore the multifaceted aspects of proposing green open space design and downtown redevelopment. The following chapters briefly describe the systematic approaches to solving these research questions. Each chapter details the research method,

discusses the data collection procedure, and discusses how the collected data is analyzed and processed. It also explains how the collected data can contribute to research objectives.

3.2. Research Design

The concept of Research through Design (RTD) refers to a research methodology where spatial design takes the lead (Nijhuis & de Vries, 2020). As per Nijhuis & de Vries (2020), RTD can be employed to generate specific or generic knowledge applicable to a particular situation, context, or broader case by formulating design strategies, concepts, principles, or guidelines. Furthermore, it can be utilized to adopt various design approaches focusing on concept, context, or program, contingent on the research objectives and questions (Nijhuis & de Vries, 2020).

This study utilized multiple research methods to address the research purpose and questions, including a literature review, expert interviews, user surveys, and research through design, which included a site inventory and analysis, precedent studies, synthesis of all data collected, and an original design responding to the specific of this study. Figure 15 shows the overall research process.

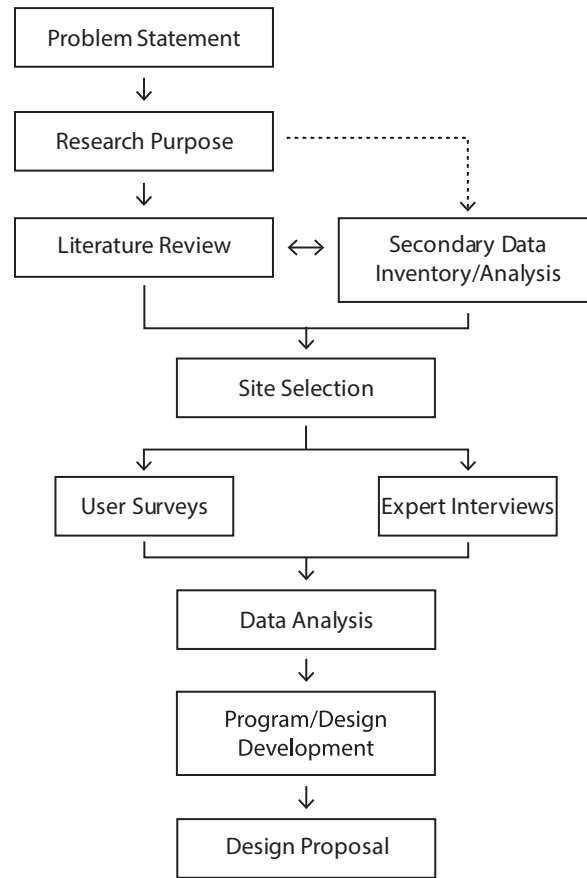
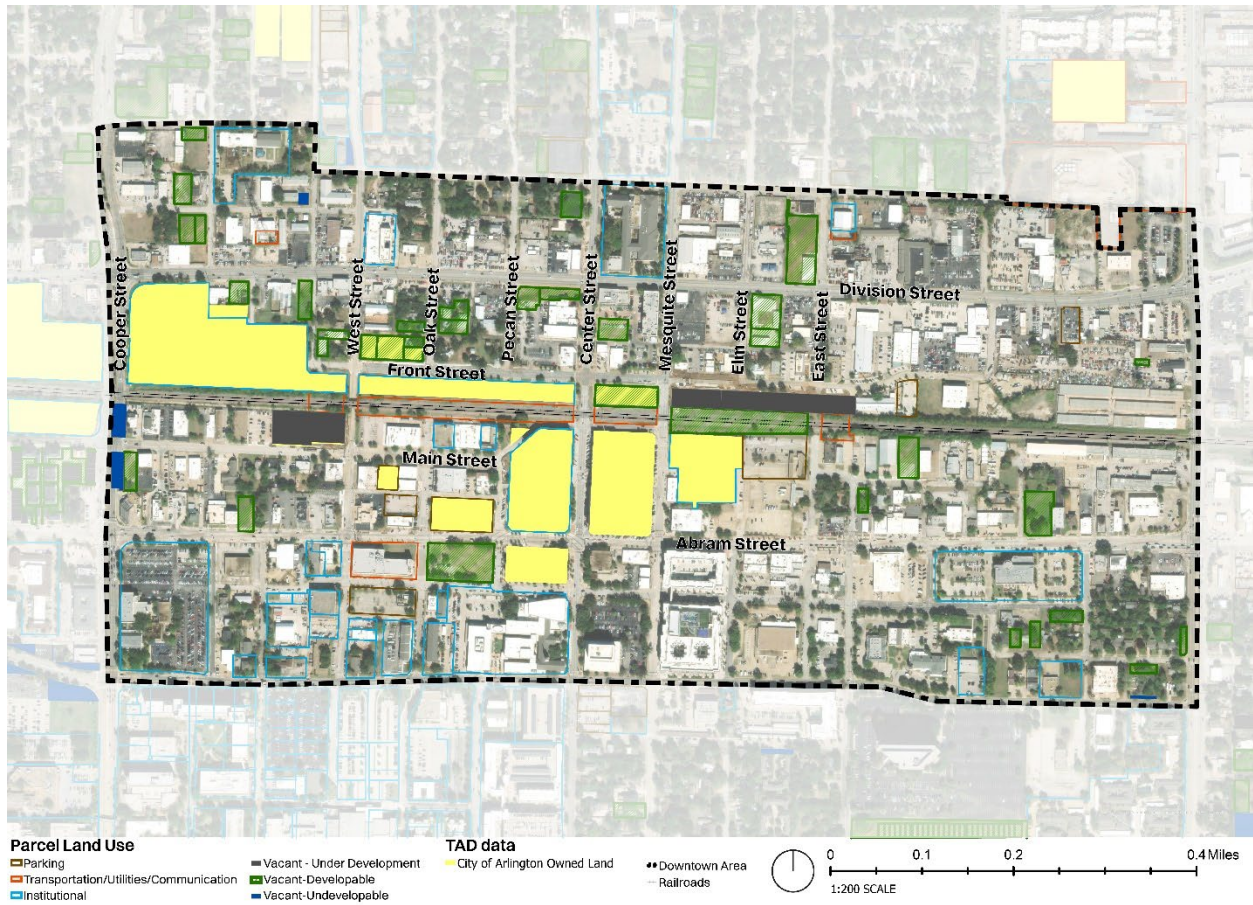


Figure 15 Research Design

3.3. Description of Design Site

This study was conducted around Arlington, and the design site was found and selected through field investigation within Downtown Arlington and through GIS data inventory and analysis. Arlington is in the North Texas region, about midway between Dallas and Fort Worth. Arlington is the 50th largest city in the United States, with an estimated population of 392,786 (US Census, 2021). The land area is 95.87 square miles (about the area of Athens, Georgia) according to the 2020 census, of which 4,700 acres is the park site.

Figure 16 GIS data layering for site selection



The site selection process was conducted by finding developable vacant lands indicated in city data and city-owned lands in Tarrant Appraisal District (TAD) data within Downtown Arlington’s boundary (See Figure 16). By layering two GIS data, 36 developable vacant lands were found within Downtown Arlington boundary. Among 36 developable vacant lands, four candidate sites were analyzed through GIS data layering; and among them, the property with good visibility and accessibility, diverse surrounding land use, and relatively large size was selected as the most suitable site. The selected design site is between N Oak Street, N Mesquite Street, E Main Street, and E Front Street. It is next to the Union Pacific railway, which can be considered a critical vehicle and pedestrian barrier. The design site contains a large surface parking lot and lawn area. Some parts of the design site are classified as vacant-developable on

the land use maps and parks in the city park map, but its current state is a vegetated lawn area. According to the City of Arlington, part of the design site was selected for the new park plan called Arlington Dream Park. The public art piece was constructed for phase 1 of the project, and the new design and construction for phase 2 will include relocating the DREAM sculpture, which is located on the property owned by the First Baptist Church.

After selecting the site, the study boundary was expanded with the surface parking lot on 300 W FRONT ST to increase the benefit of green open space. It is not indicated as vacant land in the city of Arlington's land use data. However, from the literature review, one of the demands of the city of Arlington was utilizing surface parking lots for other developments, such as green open space or mix-use development, to provide more benefits and make downtown a pedestrian-centric district. Also, some literature (Northam, 1971; Bowman & Pagano, 2004; Cianfarani et al., 2023) contains surface parking lots and institutional vacant parcels in vacant land or other related categories. Also, this land is indicated as C1C in TAD data, which is Vacant Land Commercial.

3.4.Data Collection Methods

Multiple qualitative data collection methods were used to synthesize diverse types of data. These methods were chosen to ensure a comprehensive understanding of the subject matter and to gather data from various sources for a well-rounded perspective.

3.4.1. Literature Review

This literature review was used to understand the current status and plans for green open space and vacant lands in Downtown Arlington. It also seeks to comprehend the needs of

Downtown Arlington's residents and visitors regarding the revitalization of downtown through landscape approaches. Lastly, it serves to identify pre-design elements and principles for repurposing vacant lands into future green open space design in Downtown Arlington. Primary review materials include official publications such as the Downtown Arlington master plan published by the City of Arlington. Documents published by the city of Arlington were analyzed to understand their demands and plans for future development. This analysis offered insights into the city's vision for the future of Downtown Arlington.

Precedent studies were conducted to learn from similar projects or initiatives in other cities. These studies provided valuable insights into successful strategies. They shared challenges in repurposing vacant lands for green open space design and community design and planning by considering history to increase community identity. The findings from these studies were used to inform the design process for Downtown Arlington and conduct a design solution matrix.

3.4.2. Expert Interview

Expert interviews were valuable opportunities to acquire empirical information that is difficult to get through simple data research or analysis. It is an excellent opportunity to learn more complex and detailed information through experts' opinions in various fields. As part of this study, expert interviews were deliberately designed to serve several key purposes:

1. Each expert interview provided a valuable opportunity to gather comprehensive insights into the characteristics of Downtown Arlington's green open spaces and the designated thesis design site.

2. These interviews aided in the formulation of essential design principles and programs for the transformation of vacant land into a final green open space design, contributing to the enhancement of community identity.
3. The expert interviews played a vital role in gaining a nuanced understanding of the Downtown Arlington community's needs and demands and the development of diverse perspectives and plans to address them.

Expert interviews aimed to collect specialized knowledge related to the research project's objectives and underlying rationale. Experts from various relevant fields were selected to participate, each demonstrating knowledge pertinent to the research questions central to this study. These fields of expertise included landscape architecture, public parks and recreation management, downtown non-profit organizations, city maintenance, strategic initiatives, and urban planning. Among candidate experts, three expert interviews were conducted with expert landscape architects in the private sector and City of Arlington, and strategic initiative experts from City of Arlington.

Each interview was conducted online, ensuring compliance with the rigorous review and approval process established by the Institutional Review Board (IRB) protocol at the University of Texas at Arlington for all studies involving human subjects. Interview questions were prepared through the IRB protocol, and approved question lists were selected and delivered to each interviewee before the interview. Interview questions can be found in Appendix D. This method of expert interviews significantly impacted the study's design and programming aspects.

3.4.3. User Survey

The user survey explores users' perceptions of current green open spaces in and surrounding Downtown Arlington and gathers their suggestions for future green open space designs. This research method was approved by the Institutional Review Board (IRB) at the University of Texas at Arlington (See Appendix B). As highlighted by Abd El Gawad et al. (2019), collecting and understanding community perceptions and needs is necessary to increase community liveliness and create a thriving public space. The survey aims to identify factors that may deter user enjoyment and seeks insights into how users have contributed to improving urban green open spaces in Downtown Arlington. The survey questions are categorized into two sections: The first part assesses user perceptions of green open spaces in and surrounding Downtown Arlington. The second part focuses on the project site itself. Additionally, the survey includes questions about usage patterns, preferred programming, and amenities to inform the design process. Surveys were administered both online and in person.

While the survey is entirely anonymous, respondents were asked to share their age range, zip code, and distance between residence and green open space surrounding Downtown Arlington to gauge the geographic impact of the research topic and their current relationship with Downtown Arlington. The inclusion criteria, as outlined in the informed consent, are adults aged 18 and over who have visited green open spaces in Arlington.

3.4.4. GIS Data Layering

GIS data is utilized for site selection, site inventory, and analysis. For the site selection, current land use data in Arlington and ownership data were used. Each GIS data was sourced from the city of Arlington's Data Portal, the Texas Department of Transportation (TxDOT)

website, the North Central Texas Council of Governments (NCTCOG) website, the Tarrant Appraisal District (TAD) website, and the United States Department of Agriculture (USDA) website.

GIS data layering involves overlaying data layers to create a comprehensive view of a specific geographic area. Each layer represents a different data type, such as land use, road circulation, or green open spaces. Superimposing these data sets during the inventory and analysis process makes it easier to comprehend the context and conditions of the design site and its surroundings.

Table 1 GIS Data List

Source	Data Title	Year
City of Arlington GIS Data Portal	Municipal Boundary	2018
	On-Street Hike and Bike	2018
	Off-Street Hike and Bike	2018
	Parcel Land Use	2021
	Parks Property	2018
	Zoning District	2019
North Central Texas Council of Government	Lakes	2019
	Parks	2020
	Streams	2019
Tarrant Appraisal District	Parcel	2022
Texas Department of Transportation	Railroads	2023
	Roadways	2023
	Texas Cemetery Boundaries	2023
	Texas State Boundary	2022
United States Department of Agriculture	Land Use Land Cover	2021

3.4.1. Secondary Data

The Trust for Public Land’s ParkScord Index® data (2023) is an invaluable resource for assessing the quality of green open spaces in Arlington. This data encompasses information on park access, park size, facilities and amenities, and park investment. The data was utilized to identify and pinpoint areas where access to high-quality green open spaces is lacking and to

guide efforts to improve park quality and access. The index can help to inform decisions about where to invest resources for park development or improvement. It provides a rich dataset for studying urban park systems and their impacts on public health, social equity, and environmental sustainability.

Demographics is a crucial aspect of secondary data. It provides information about the characteristics of a population, such as age, income, and education. Census data was used for this research to understand the distribution and characteristics of the population within adjacent neighborhoods of the design site. Census data can help understand the needs and preferences of different user groups of people in a community and measure the impact and performance of their projects on various social and economic indicators. Moreover, census data can help identify underrepresented or underserved populations and design more equitable and inclusive spaces.

3.5. Data Analysis

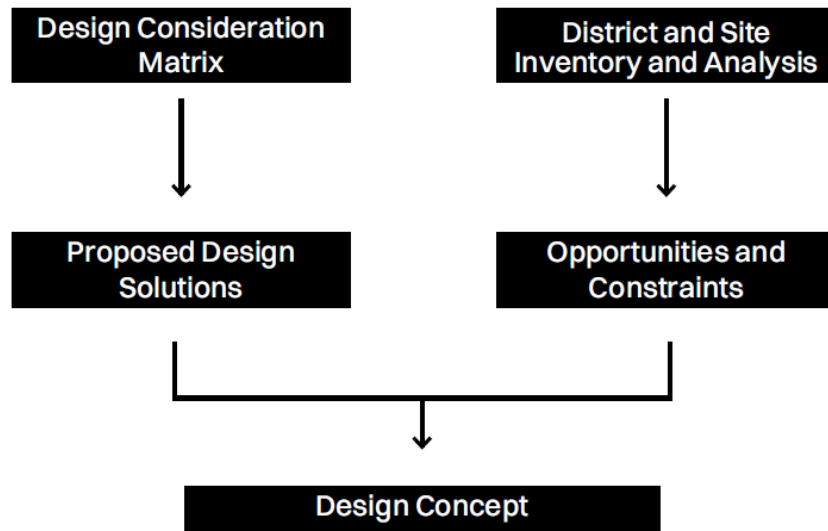
For this study, several qualitative research materials were utilized. Thematic analysis (TA) is a “method for identifying, analyzing, and interpreting patterns of meaning (‘themes’) within qualitative data” (Clarke & Braun, 2017, p. 297). According to Clarke and Braun (2017), the objective of Thematic Analysis (TA) is not merely to condense the data but to identify and interpret significant aspects of the data. The research question directs this process; however, in TA, the research question is not rigid and has the potential to evolve throughout the states of coding and theme development (Clarke & Braun, 2017).

The data for analysis was collected using a thematic analysis approach to combine and evaluate the data from the literature review, Downtown Arlington Master Plan document,

precedent study, expert interviews, and user surveys. Each source was analyzed by the common theme of each method and grouped by four place-making themes suggested by Project for Public Spaces and sub-themes (codes) of the main four themes. In TA, themes provide “a framework for organizing and reporting the researcher’s analytic observations” (Clarke & Braun, 2017, p. 297). The major four themes are as follows: Uses and Activities, Sociability, Comfort and Image, and Access and Linkages. As a result, the comprehensive design consideration matrix (Appendix A) was conducted by reviewing each data source mentioned above. Based on this, the design solution matrix (Table 2) was restructured to illustrate each goal, strategy, and element concretely.

District and site inventory and analysis were primarily conducted based on the GIS data layering process. The specific data list was listed in Table 1. Secondary data, such as demographics or park access scores, were utilized to identify characteristics of the design site and its surroundings. Through this process, specific opportunities and constraints of the design site were identified and incorporated into it. These opportunities and constraints were utilized to organize the design concept of the design site. Design concepts were derived by synthesizing proposed design solutions and the site’s opportunities and constraints. These processes were conducted through the theming process under four different themes. Each design concept was applied to the park design process (See Figure 17).

Figure 17 Data Analysis Process for Design



3.6.Design Processes

The design processes involved a comprehensive analysis, incorporating elements from the design solution matrix and the site’s opportunities and constraints. Each design consideration was carefully examined, leading to the development of design concepts for the city park to promote community identity. Throughout the consideration of design solutions as well as the opportunities and constraints of the site, the concept of the design site was derived from four major placemaking themes: Uses and Activities, Sociability, Comfort and Image, and Access and Linkages. The primary goal of the design is to create a substantial community amenity and destination in Downtown Arlington by reflecting their potential and history, thereby enhancing community identity.

Through the consideration of four different themes and design concepts under each theme, the park was selected from several green open space typologies for community amenities as a

form of green open space. Each part of the park has a different usage and theme for the activities and user groups, and design concepts were applied throughout the design process.

3.7.Bias and Error

Thematic analysis is a valuable tool to synthesize data from different methods and sources and generate insights and recommendations for design projects. However, the thematic analysis may be a subjective and interpretive process that depends on the researcher's judgment and perspective; therefore, the researcher needs to be careful not to impose assumptions or biases on the data or to overlook the nuances and contradictions in the data.

It should be noted that many participants of the user survey were visitors, and there needed to be more opinions from nearby residents. Although the community engagement and survey data of the Downtown Arlington Master Plan were used as literature, more meaningful user surveys should be conducted in future research processes for more accurate results. Available data from various organizations may have different criteria for data and be outdated. The ParkScore Index as secondary data also has limitations, such as the fact that the index relies on the availability and accuracy of data from city governments and other resources. If this data needs to be completed, updated, or inaccurately reported, it could affect the reliability of the index. Also, the index primarily uses quantitative measures. Aspects like the quality of park maintenance, safety, or user satisfaction, which are more qualitative and subjective, might need to be fully captured. Census data may not capture human behavior's dynamic and complex nature and experience in the built environment. Also, this may not provide enough detail or specificity for some research questions or design goals.

3.8.Summary

This chapter outlines the data collection and analysis methods during the design process. It further elucidates the steps involved in developing the design solution matrix, identifying the opportunities and constraints of the site, and incorporating the design elements based on the four placemaking themes. The primary objective of the design is to establish a robust community amenity and destination in Downtown Arlington that reflects its potential and history while enhancing its community identity. The subsequent chapter will conduct data analysis and present findings for the design.

4. Analysis and Findings

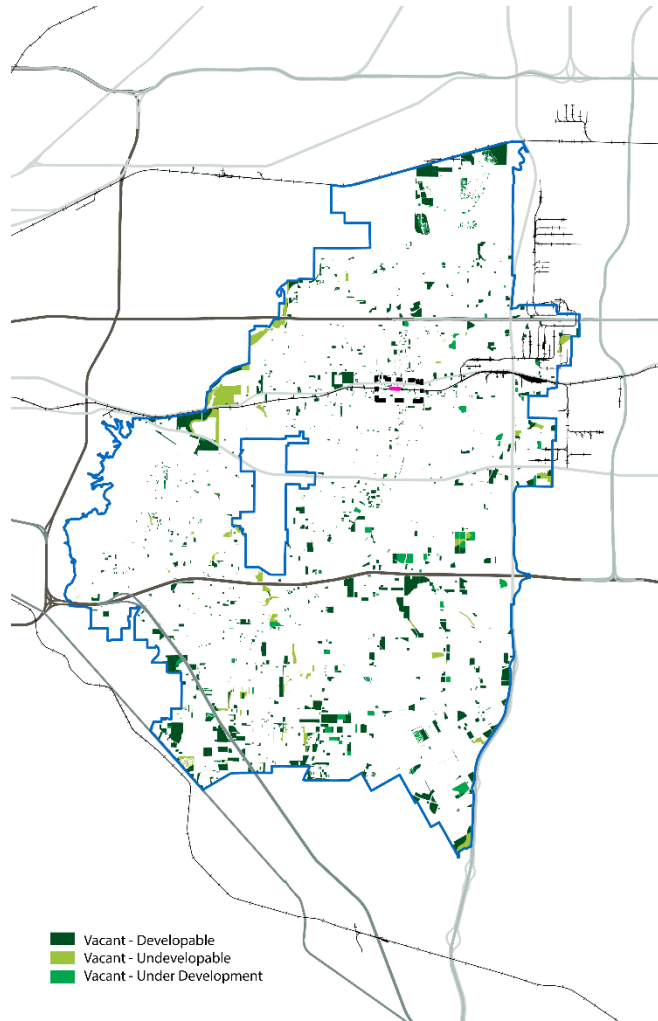
4.1. Introduction

This chapter presents the research findings from the literature review, user survey, expert interview, and GIS analysis results. The design solution for Downtown Arlington’s green open space design was conducted based on collected data. The design solutions for the design site are selected through the site inventory and analysis process.

4.2. Vacant-developable lands

According to the city of Arlington’s 2022 Annual Development Profile, Vacant-Developable land use is 3,828.3 acres, which is 7.6% of the overall land use (Figure 18). However, overall vacant land uses, including Vacant-Undevelopable lands and Vacant-Under Development lands, are 4957.9 acres, which represents 9.9% of the total lands of Arlington. “Vacant-Undevelopable” refers to the land that cannot be developed due to various characteristics such as floodplains, setbacks, grades, etc. “Vacant-Developable” means the land can be built upon as it meets all building code, zoning and engineering requirements, and all other associated requirements. “Vacant-Under Development” is a property with an issued building permit that is permitted to begin construction (Arlington Planning and Development Services).

Figure 18 vacant Lands in Arlington



4.3.2023 ParkScore Index® by Trust for Public Land

The ParkScore compares the national park system for the 100 most populated cities in the United States, and the whole score point is out of 100 based on an average of the five categories: Acreage, Access, Investment, Amenities, and Equity. These numbers show the overall city of Arlington, not focusing on Downtown Arlington only. They assigned points for 14 measures across the five categories above. The Trust for Public Land also provides a ParkScore Index map for visualization and discussion. This map can be used to study the Downtown Arlington area.

According to the 2023 report, Arlington's 2023 rank is 74, and a score of 40.4 is lower than the 2022 rank (68th). Among the top 100 cities in the United States, cities within Texas that rank higher than Arlington include Plano(16th), Austin(41st), Dallas(43rd), San Antonio(57th), El Paso(67th), Corpus Christi(69th), and Houston(71st). Arlington has 105 parks; however, while the national median of land for parks and recreation is 15%, only 7% of Arlington's land is used for parks and recreation. The following information is detailed in each category:

- **Acreage:** Arlington has a below-average percentage of city area dedicated to parkland (30/100 points) but scores high on median park size (100/100 points), showing a presence of large 'destination' parks, which include large natural areas that provide significant mental health as well as climate and conservation benefits.
- **Access:** 60% of Arlington's population lives within a 10-minute walk of a park, below the average for the 100 most populous US cities (74%) and above the average for all urban US cities and towns (55%).
- **Investment:** Arlington spends an average of \$113 per capita annually on publicly accessible parks and recreation. Much of this investment (98%) comes from the city agency, with the remaining 2% from monetized volunteer hours.
- **Amenities:** This category includes a prosperity of six park activities popular among a diverse choice of user groups: kids, teenagers, adults, and seniors. Arlington's overall category score is 26, which is below average. This includes the following amenities: basketball hoops (26 points out of 100), dog parks (11 points), playgrounds (13 points), senior and recreation centers (11 points), permanent restrooms (39 points), and splash pads (55 points).

- Equity: Arlington’s equity score reflects the fairness of park distribution by race and income. It scores 38/100 for proximity to parks in neighborhoods of color and 31/100 for low-income households. In terms of park space distribution, neighborhoods of color have 68% less nearby park space than white neighborhoods (17/100 points), and lower-income neighborhoods have 57% less nearby park space than higher-income neighborhoods (23/100 points) (Figure 19 and 20).

Figure 19 Arlington, Texas 2023 ParkScore index: Equity - Race (Source: Trust for Public Land)

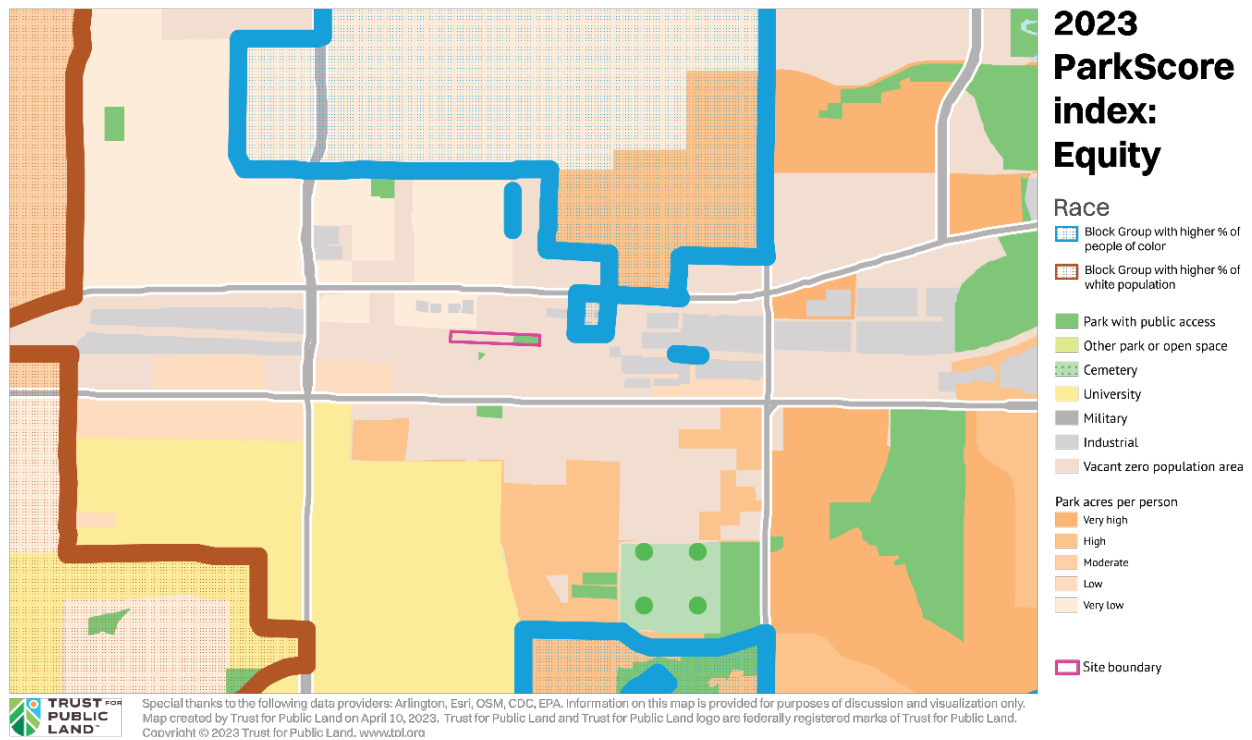
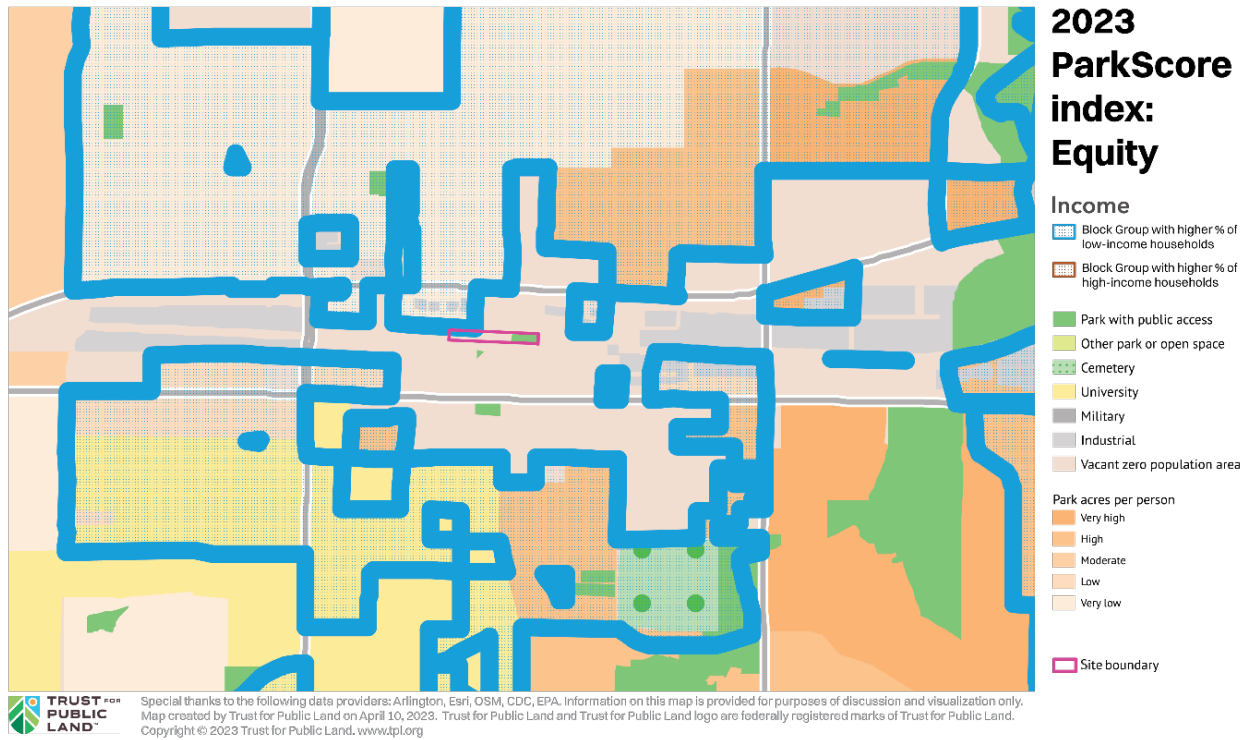
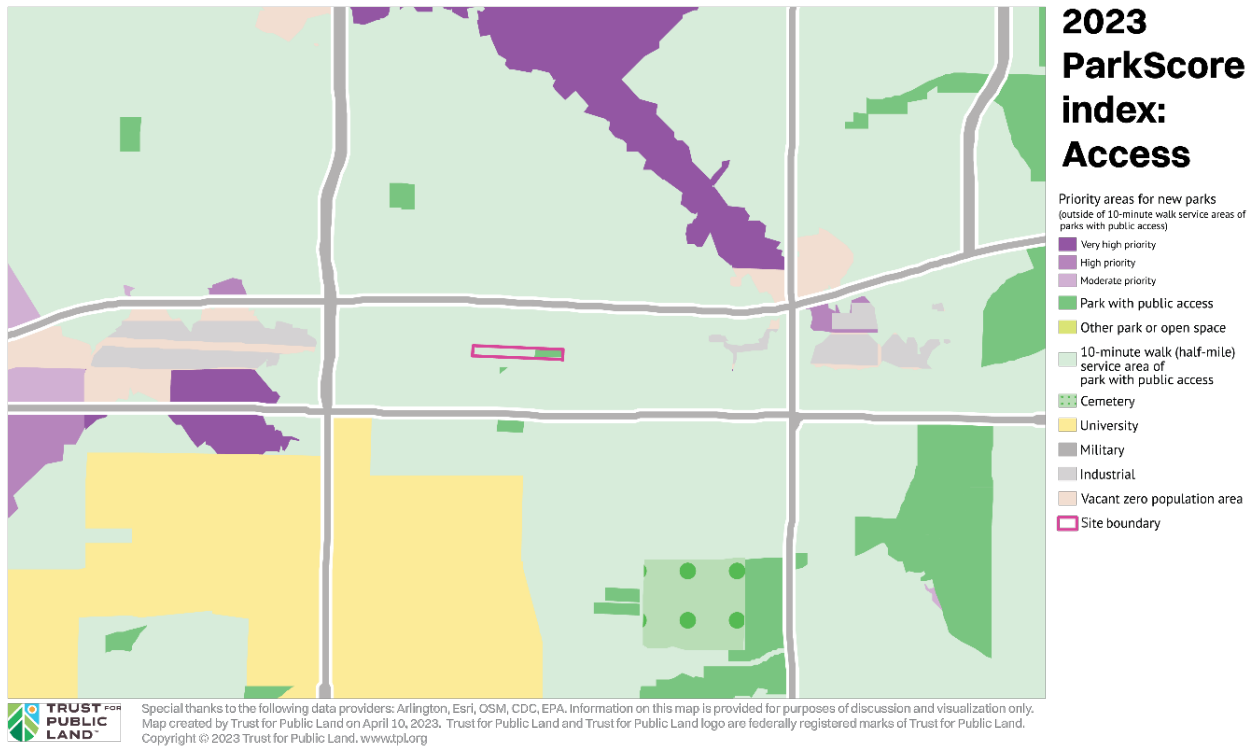


Figure 20 Arlington, Texas 2023 ParkScore index: Equity - Income (Source: Trust for Public Land)



According to the ParkScore Index map, 40% of the population (158,228) lives within a 10-minute walk distance (1/2 mile) from the park. The future Arlington Dream Park site in the design is shown as a park with public access so that Figure 21 can be used for prospects after park construction. The Trust for Public Land recommends priorities for the development of new parks to reduce the gap in accessibility between residents and parks based on their comprehensive index.

Figure 21 Arlington, Texas 2023 ParkScore index: Access (Source: Trust for Public Land)



4.4. City of Arlington Socio-Demographics

The socio-demographic characteristics can provide valuable insights that inform urban planning, landscape architecture, and the provision of public services. Such data is crucial when planning for community services, infrastructure, and other aspects of urban development. The data from the United States Census Bureau was used.

Arlington, Texas, had a population of 394,266 in 2020 Decennial Census data. The median age was 32.8, and the median household income was \$70,433. The population is diverse, with 40.5% identifying as White, 22.9% as Black or African American, 7.7% as Asian, and 30.7% as Hispanic or Latino. The city also has many foreign-born individuals, representing 21.3% of the population. 36.7% of the population speak a language other than English at home.

In terms of housing, the owner-occupied housing unit rate was 53.9%, and the median gross rent was \$1,333, which is higher than the median gross rent in Texas, \$1,290. The total number of households in Arlington City was 140,525, and the average family size was 3.47, which was more significant than the average family size in Texas, which was 3.25.

Regarding education attainment, 85.9% of persons aged 25 years and over were high school graduates or higher, and 31% had a bachelor's degree or higher. Regarding industries for the civilian employment population 16 years and over, 18.4% of the population were working in educational services, health care, and social assistance; 10.6% were working in professional, scientific, management, and administrative and waste management services; and 9.1% were working in arts, entertainment, and recreation, and accommodation and food services. The median household income in Arlington was \$70,433, and the poverty rate was 11.7%, lower than in Texas.

Overall, this data shows a diverse and dynamic community. This diversity likely contributes to the richness of the city's cultural and social fabric. The average household size and the percentage of households speaking a language other than English at home further underscore the city's diversity. The educational attainment levels suggest a well-educated population, with a significant proportion of residents having completed high school and obtained a bachelor's degree or higher.

4.5. Expert Interviews

Three expert interviews were conducted with five expert interview candidates from different fields. The classification of the participants includes landscape architects in the public sector,

landscape architects in the private sector, and strategic initiatives in the public sector. Each interview's questions differed due to the interviewees' professional experiences and circumstances. However, several common topics about increasing community identity were discussed throughout each interview. The contents of each category were combined and rephrased from the interview contents.

Role of green open space in Downtown Arlington

According to the interviews, green open spaces were crucial components in urban areas to enhance the quality of life in the communities. These spaces were deemed critical and "not something that could be ignored or just forgotten about." Green open spaces provide a gathering place, relieve mental stress, and beautify the city. One interviewee mentioned that green open spaces in downtown are exceptionally vital, and these spaces are beneficial in terms of social, enhancing the quality of space, engineering, economic, and beautification aspects. Having local green open spaces was essential for the environment, combating climate change, and improving the community's social and economic health. One interviewee mentioned that much research supported the idea of mental health being improved when people had access to nature and utilized it. The interviewee also mentioned that having green open space provided a great first impression of the city.

One interviewee mentioned that new developments could be conceived with public open spaces and green spaces because they were expected amenities for people to want to live and work around. One interviewee highlighted that the importance of green open space had become a more significant part of what everybody thought about architects, planners, landscape architects, engineers, developers, and everybody who touched the system and created these projects.

Diversity of User Groups and Accessibility

It was essential to make green open space accessible to everybody. Different types of green open spaces can cover different user groups. For example, neighborhood parks can supply recreation and leisure services to families, kids, and seniors. One interviewee mentioned that green open spaces provide a connection both in the community and an accessible route that is safe. The Clock Tower next to the city hall can serve people with interactive water features; the City Center Plaza has public art sculptures. Green open space designs and how they could be used to provide a variety of activities were discussed throughout the interview.

Including inclusivity and making the space accessible to people with disabilities were discussed as essential for planning and design. All interviewees agreed that including various activities in an urban green space to cater to diverse populations ensures the park is accessible and safer for users with physical disabilities, children, and seniors. One interviewee mentioned that as Arlington progresses with new developments, they are always thinking about ensuring that spaces are inclusive, accessible, and open to everybody.

Sustainability

Sustainability came in several different ways. During the interview, one interviewee discussed how landscape architects try to keep the sustainable aspect principles at the core when prioritizing things, such as sustainability standards, when creating iconic urban green spaces that represent the city's identity. Using local materials and vendors is essential to achieving the sustainable goal of the project. Using local vendors and materials can save costs and reduce carbon footprints and waste. One interviewee emphasized that landscape architects think about green infrastructure, planting more trees, and how far the material is coming from and applies to

plants. One interviewee emphasized that good native plant pallets can increase economic efficiency because native plants can sustain themselves in all of the climates and things we experience here. So, these do not have to be all the extra watering.

Planting trees is a sustainable way to mitigate air and noise pollution. A stormwater management system helps to mitigate the risk of flash flooding, especially on lots of impervious surfaces in Downtown Arlington. One interviewee suggested it is not just about the quote-unquote stereotypical idea of sustainability but has to get creative with it. The interviewee emphasized that landscape architects must know how to care for our environment.

Community Involvement

According to the interview, community participation during the planning and design process is essential to ensuring that the space meets people's needs. Making sustainable community environments by activating places for people's use is crucial. Making sense of place, community identity, and community attachment is vital by involving people in the decision-making process for actual design, programs, activities, and even maintenance. One interviewee emphasized the importance of understanding the purpose of the planning and design process and involving the public in the planning and design process.

Iconic Green Open Space

Iconic green open space is complicated and related to both sustainability and community. One interviewee emphasized that it is a cycle of not just creating creatives; it always relies on other creatives to expand upon designs, and we take inspiration from other people. The interviewee mentioned that there is no idea yet to be thought of, but it is just a matter of what we will do with it and how we will implement it.

The idea is to ensure that what designers design is for the community, not just for an idea. It always has to be balanced because if designers design something and ask for community input, all public projects need to have a public input process. So, the interviewee mentioned that if design gives the community something that does not resonate with the community, it could be more sustainable. However, the interviewee also emphasized that decision-makers must look at it from different angles. If the design does not reflect the community's needs, it might not necessarily be utilized by the community, so it is not sustainable.

When we create a destination, it is hard to address every single person's needs. Nevertheless, carving out anything that is publicly accessible and that is the foundation of it, is making sure that it is publicly acceptable but does not have barriers to get to or be in.

Connectivity

Improving pedestrian access and connectivity by proposing a pedestrian-friendly environment is critical. A pedestrian-friendly environment can encourage physical activity and community interaction. Connectivity could be physical but also considered social or cultural. One interviewee mentioned strategies they use to promote social inclusivity and reduce social disconnection in urban communities. To reduce this gap, the interviewee suggested providing various seating options, including benches and other facilities that can cover various activities such as walking dogs, hanging out, eating lunch, and gathering.

Safety and Security

Safety is essential to creating safe spaces and preventing crimes, particularly downtown. One interviewee mentioned that the significant issues of Downtown Arlington were fear of car encroachment and vandalism. The bollards installed around the city can create a perception of

safety, and trees and other barriers can also be used to create a strong barrier between vehicles and pedestrians. Another interviewee mentioned that police presence and patrol and having eyes on things could prevent crime and have everything be open and visible, not hidden areas.

History and Culture

Storytelling is vital in creating a sense of identity and connection between green open spaces and the city's history or culture. One interviewee highlighted the significance of considering various viewpoints, including the present and past years. Additionally, the interviewee suggested integrating design elements and layouts in public spaces to convey narratives effectively. History and culture could be used for the design process; on the other hand, a well-designed space with fluent history and culture can preserve local history and stories through such projects. For example, an interviewee mentioned that the Clock Tower project in Arlington contributed to economic development and place-making in the city because of its crucial historical background. On the other hand, there was an opinion that space could be flexible and timeless for future generations.

They integrated design elements and layouts in public spaces to convey narratives effectively. One interviewee mentioned the role of design and layout in telling a story and mentioned the use of signs, planting selection, and artistic installations. One interviewee mentioned that there are always opportunities to add cultural features to the parks and open spaces. The interviewee mentioned that Levitt Pavilion is not so much that permanent infrastructure is in place. However, it is a place where people can go and participate in various activities such as performances, concerts, or some cultural festivals.

Green Open Spaces in Downtown Arlington

One interviewee mentioned that Downtown Arlington has some existing green spaces, such as the Clock Tower Plaza and Levitt Pavilion, but could be used more. The interviewee mentioned that the Clock Tower and other green open space projects have increased tourism and driven economic development in Arlington. Another interviewee mentioned there is not enough green open space in Downtown Arlington, and increasing accessibility and quantity is the key. The busyness of the downtown area during the day and the possibility of being less busy in the evenings should be considered. One interviewee mentioned that it is crucial to make sure to co-locate green open spaces with areas of activity, residential areas, and commercial areas such as restaurants and retail. Having many different activities that people access throughout the day keeps things alive, active, and engaging. So, the interviewee suggested making sure that there is a mix of uses nearby and that people are engaging on a 24/7 basis.

Downtown Arlington is a much more diverse, impressive, and unique place in the city of Arlington. All interviewees described the Downtown area as diverse and said catering to the different user groups using the spaces is essential. One interviewee mentioned an exciting mix of incomes; because of the student population, the incomes trend lower, but that does not necessarily mean they lack purchasing power. The interviewee mentioned that culturally, there are more activities downtown, which is the heart of the cultural district; art organizations and industries are concentrated downtown, so it has a different feel and environment than any other area in the city. Therefore, it is essential to consider who the users are, their safety, and their needs, as emphasized for green open space planning and design within Downtown Arlington.

Arlington Dream Park

There were three different opinions about Dream Park. One interviewee mentioned that it is well-designed and will provide a great experience throughout the Downtown Arlington

community. On the question about Dream Park's program and community-friendly park, an interviewee mentioned that any green space would be community-friendly just by the nature of being a public green open space. Another interviewee mentioned that it is well-designed but could still be improved by expanding the parking area. Another interviewee was unsure if the current design for the Arlington Dream Park was satisfactory and felt that the design was not final and had some room for improvement. The interviewee suggested the park should be more community-friendly and have more design elements.

On the other hand, all interviewees agreed to utilize the surface parking lot to provide green open space and extend the Dream Park area. They mentioned that if there is a specific need for repurposing, it is okay to change the purpose of the parking lots. One interviewee is okay with giving up the parking lot within Downtown Arlington to make it more pedestrian-friendly. Another interviewee mentioned that the main issue with green open space downtown is that there is no need for more of it, and they want to see some surface parking space turned into green space. The interviewee mentioned that Downtown Arlington has a lot of surface parking and that Arlington could reclaim some of that surface and turn it into a previous surface. The interviewee mentioned that it would be ideal to see some of those parking spaces utilized that way.

One interviewee mentioned that Downtown Arlington is changing a lot. There was no residential area in the downtown at all, but now they are having a lot more development with residents. It will bring people 24/7 to the downtown area. One interviewee mentioned that Arlington had a deliberate plan to put parks with good geographic coverage all over the city so that people could access them without a car. In conclusion, green open space development should be continued with the downtown development trend to provide more quality and valuable green open space for residents and visitors.

4.6. User Surveys

This study investigates user perceptions of green open spaces in and around Downtown Arlington through the utilization of a meticulously crafted user survey. The survey aims to provide participants with an opportunity to share in-depth insights, employing a combination of multiple-choice questions and open-ended sections for comprehensive comments and feedback. Dissemination occurred primarily through the primary investigator's social media platforms, specifically Instagram and LinkedIn. Additionally, in-person surveys were conducted within Downtown Arlington. The online survey was accessible from October 23 to November 26, 2023. Thirteen in-person surveys were also conducted in the vicinity of the target area. Out of 60 participants, 37 completed the survey, resulting in a response rate of 61.67%. While participant zip codes were collected to identify their distribution, data gaps occurred during the in-person survey. The travel distance to green open spaces in and around Downtown Arlington was utilized as a workaround. Notably, 47.38% of respondents lived within 5 miles of the green open spaces, with commuter students (37.83%), visitors (35.13%), and business employees and residents (each 13.52%) comprising the majority. The age distribution of respondents was as follows: 25 to 34 (58.33%), 18 to 24 (19.44%), 35 to 44 (16.67%), and 45 to 54 (5.56%)

Visitation Patterns on Green Open Spaces

In a survey on green open spaces in and surrounding Downtown Arlington, 31.07% of respondents have visited parks, 30.39% public plazas, and 15.69% public seating areas. Transportation to these spaces primarily involved personal vehicles (79.01%), with 20.93% choosing to walk. The most common travel group size was 2 to 4 people (55.81%), followed by solo visitors (37.21%). Respondents often visit with friends (27.27%), family (24.24%), alone

(19.7%), or with dogs (10.61%). Purposes for visits varied, with 20.34% for leisure and relaxation, 16.1% each for physical activities in surrounding areas, and spending time with friends and family. Community events (12.71%), eating (11.02%), and spending time alone (11.02%) were also popular reasons. Most respondents stay in the green open spaces for about 30 minutes to 1 hour (42.50%), with 37.5% staying for 1 to 2 hours.

Positive and Negative Factors on Existing Green Open Spaces

In response to the question about factors that have a positive impact when visiting the green open space in and surrounding Downtown Arlington, shade resulted in 12.5%, sense of safety 12.07%, vegetation 9.05%, accessibility 8.62% and pedestrian access and surrounding amenities (i.e., stores, restaurants, etc.) each resulted in 7.76%. In response to the question about factors that have a negative impact, lack of shade resulted in 13.09%, litter/trash 11.52%, feelings of insecurity and lack of maintenance each resulted in 9.42%, and unsafe behaviors by other users resulted in 7.85%.

Perceptions of Existing Green Open Spaces

Regarding whether there is enough green open space in and surrounding Downtown Arlington, 59.46% of respondents answered no, while 37.84% were unsure. Opinions on this were gathered through open-ended answers. The respondents who answered that there was enough space cited the Levitt Pavilion, the park with the DREAM sculpture next to the Levitt Pavilion, the small park next to the Arlington Museum of Art, and the vast green space on Front Street as reasons for their opinion. On the other hand, respondents who answered that there were not enough green open spaces expressed opinions such as not enough shade areas to withstand

the hot summer in Texas, lack of pedestrian access, not noticeable, needing more space to accommodate various activities, and needing more space to sit and rest.

Overall Satisfaction and Importance

In response to the questions about overall satisfaction with the experience of green open spaces in and surrounding Downtown Arlington, 51.35% of respondents were neither satisfied nor dissatisfied, 21.62% were quite satisfied, 12.51% were quite dissatisfied, and 10.81% were not satisfied. When asked about the importance of green open spaces in the local area, 81.08% of respondents said it was very important, and 18.92% answered that it was quite important.

Identity and Image of Downtown Arlington

In order to investigate respondents' about Downtown Arlington's identity, open-ended questions were also asked about the image that comes to mind when thinking of downtown and their favorite spaces in downtown, in addition to green open spaces. The most common images that came to mind when considering downtown were entertainment venues such as various sports stadiums and amusement parks, UTA, a desolated city with concrete pavement, a small city, and restaurants. The most common response to the question about their favorite place was "none," followed by various restaurants, bars, coffee shops, and entertainment-related industries outside of downtown, such as the AT&T Stadium, Baseball Park, and Texas Live. These results suggest that respondents tend to associate the image of Downtown Arlington with its surrounding areas rather than having a distinct image of Downtown Arlington itself.

Design Site Responses

Following the general questions about green open spaces, questions related to the design site were conducted. In response to whether they had visited or heard of the design site, 59.46% of

respondents answered yes. When asked if they had a purpose for visiting the current site, responses such as physical activity surrounding space, spending time alone, and walking the dog were 13.95%, and eating and parking were 11.63% each. When asked if they had a negative experience when visiting the site, lack of shade was the highest at 18.18%, followed by low usage by people (12.73%), lack of maintenance (9.09%), unsafe behaviors by other users, litter and trash, and space's program (each 7.27%). Respondents who answered others had responses such as lack of connectivity and dislike of passing by the gear sculpture because it makes them feel hotter walking environment.

After these questions, in response to the question related to the use of a new green open space if it will be designed, very likely was 32.43%, quite likely was 24.32%, and likely was 29.73%. In response to the question of what kind of green open space they would prefer if a new green open space were designed, the city park was 14.17%, nature trails were 13.39%, and urban forest was 11.81%. In response to the question of what activities are needed on the new design site, 17.93% answered leisure and relaxing, 13.79% answered spending time with friends and family, physical activity surrounding space and artistic endeavors each resulted for 11.03%, and eating was 10.34%. This was similar to the current state of activities being carried out in Downtown Arlington's green open space. When asked what features they would like to see included, shade trees accounted for 18.24%, seating area 14.47%, interactive water feature 9.43%, picnic table and area, and restaurant and food trucks each recorded 8.81%. This was also similar to the responses about features they would like to see included in the green open space in Downtown Arlington.

Suggestions for Improvement from Respondents

In response to the open-ended question asking for suggestions for improvements or additions to the design site, the most common responses were an increase in shade and a lack of it. Safety and a fenced buffer from the train were the subsequent most collected. Other opinions included event space, fenced and open areas, interactive elements for the community, wayfinding design, reflecting community diversity, and so on.

In conclusion, the survey findings provide a nuanced perspective on green open spaces in Downtown Arlington, highlighting both positive aspects and areas for improvement. The study provides valuable insights for future planning and development initiatives, emphasizing the importance of addressing community concerns and preferences in enhancing urban green spaces.

4.7. Proposed Design Solutions

A design solution was proposed after developing design consideration matrices by reviewing relevant literature, the Downtown Arlington Master Plan, precedent studies, expert interviews, and user survey results. Each design consideration was categorized based on the principles outlined in the Placemaking guidebook published by Project for Public Spaces. The development of these design considerations is detailed in Appendix A. The proposed design solutions were identified for each category throughout the collected data, aligning with Downtown Arlington's overall placemaking strategy. The site-specific solutions were selected based on site analysis and specific contextual factors for the design concept and grouped based on four district categories that were derived from data analysis in chapter 3 (See Table 2).

Table 2 Proposed Design Solutions for Green Open Space in Downtown Arlington

Design Goal	Design Strategy	Design Elements
Uses & Activities		
Enhancing connection to adjacent local businesses	<ul style="list-style-type: none"> Events and programs in collaboration with nearby businesses 	<ul style="list-style-type: none"> Shared business spaces Place to eat and gather Flexible space for various events
Redeveloping surface lot/underutilized parking lot to propose green open spaces in Downtown Arlington	<ul style="list-style-type: none"> Finding vacant lots or developable lands within Downtown to use as public space 	
Considering various user groups	<ul style="list-style-type: none"> Business owners, business employees, municipal facility visitors, residents, students One-person household, single-family, multi-family, pet Tourists and visitors Individuals with disabilities 	<ul style="list-style-type: none"> Special spaces (e.g., a place for kids, seniors, and others) ADA accessible
Making place as pedestrian-centric	<ul style="list-style-type: none"> Transforming car-centric space to people-dominant space 	<ul style="list-style-type: none"> Street buffer between vehicle and pedestrian Safe crosswalk Signage
Various programs and spaces for place visitors	<ul style="list-style-type: none"> Iconic green open space design Bringing public art to make great destination All-day programs (Day/Evening) 	<ul style="list-style-type: none"> Educational spaces Sports facilities Eco Park Flexible space for various events (plaza, flex lawn, and others) Others
Planning regular maintenance and management	<ul style="list-style-type: none"> Regular cleaning Maintenance staff Designing the landscape to minimize maintenance and mess 	<ul style="list-style-type: none"> Waste bins Signage
Sociability		
Increasing the change of community engagement	<ul style="list-style-type: none"> Design collaboration through partnership with various organizations (public and private sectors, non-profit organizations, community organizations, and others) Design through community input gathering (survey, public engagement, charrette, and others) Encouraging volunteerism 	<ul style="list-style-type: none"> Design elements making with residents and visitors
Making a welcoming and cohesive space	<ul style="list-style-type: none"> Emphasizing entrance and street to make people well indicate the place 	<ul style="list-style-type: none"> Entry gateway Public art Streetscape Striking structure
Considering social interactions with	<ul style="list-style-type: none"> Neighbors, co-workers, families, friends, and others 	<ul style="list-style-type: none"> Individual/group gathering space
Reflecting the theme of surrounding areas of the design	<ul style="list-style-type: none"> Using the color of Arlington, UTA, entertainment district Railway-inspired design 	<ul style="list-style-type: none"> Local arts (Arlington stars, DREAM sculpture, Boundless sculpture, and others)
Reflecting the story of Arlington through the design process for a sense of community	<ul style="list-style-type: none"> Collaboration with different user groups in the design process 	
Comfort & Image		
Protecting people from the conflict by car	<ul style="list-style-type: none"> Making vehicle barriers 	<ul style="list-style-type: none"> Bollards Planting trees along the sidewalk Planting buffer areas
Emphasizing central nodes for both vehicle and pedestrian access and safety	<ul style="list-style-type: none"> Pedestrian-friendly design Consistent streetscaping Landscape enhancement 	<ul style="list-style-type: none"> Pavement materials Shade
Making activities, places, and destinations what make a great city as Power of 10+ Strategy		
Reducing concrete pavement	<ul style="list-style-type: none"> Using alternative materials 	<ul style="list-style-type: none"> Recycled material Bricks Wood Others

Reflecting historical elements through design theme	<ul style="list-style-type: none"> • Historic elements during the design process • Using material from the history 	<ul style="list-style-type: none"> • Pavement with a historic timeline • Sculpture • Historic signage
Considering culture and art		<ul style="list-style-type: none"> • Murals, sculptures, space for cultural performances, historic elements, art walks, interactive spaces, community art, and others
Providing shaded area		<ul style="list-style-type: none"> • Trees or shade structures
Increasing green open spaces	<ul style="list-style-type: none"> • Designing the green open spaces to serve multiple purposes • Increasing green space per capita • Involving the community in planning and design of green open space • Identifying potential areas for creating new green open spaces • Adding more trees and plants 	
Considering environmental sustainability	<ul style="list-style-type: none"> • Using local materials • Aiming net-zero carbon emissions 	<ul style="list-style-type: none"> • Planting trees and native plants • Recycled materials • Green infrastructure • Water filtration systems • Rainwater collecting facility • Green corridors
Considering landscape pattern	<ul style="list-style-type: none"> • Arranging the landscape pattern by the characteristics of the surrounding environment to maximize function 	
Considering longevity and success	<ul style="list-style-type: none"> • Regular maintenance • Flexibility for future changes • Designing for resilience against climate change 	
Providing a variety of seating options with shade and sun	<ul style="list-style-type: none"> • Considering views from the seating • Using easy-to-clean seating materials 	<ul style="list-style-type: none"> • Group and individual seating • Accessible seating options for individuals with disabilities
Fostering a sense of safety and security	<ul style="list-style-type: none"> • Providing open space, less enclosed space 	<ul style="list-style-type: none"> • Lighting • Lower barrier to see through
Controlling noise pollution	<ul style="list-style-type: none"> • Locating noisy activity or facilities near the source • Installing sound barriers 	<ul style="list-style-type: none"> • Sound wall with plants • Dense tree cover • Earth berms • Water features
Securing a sense of comfort	<ul style="list-style-type: none"> • Considering aesthetic, safety, and accessibility 	
Promoting health	<ul style="list-style-type: none"> • Encouraging people to use green open spaces and facilities 	<ul style="list-style-type: none"> • Outdoor gym equipment • Walking trail • Multi-sport arenas • Community gardens • playgrounds
Access & Linkages		
Encouraging proximity to green open space	<ul style="list-style-type: none"> • Revitalization of existing spaces • Creating new green open space • Co-location with activity hubs with residential areas, workplaces, restaurants, retail establishments 	
Enhancing connectivity and continuity	<ul style="list-style-type: none"> • Pedestrian and bicycle connectivity and safety • Link to the regional bike network • Integrating with public transportation (Via) 	<ul style="list-style-type: none"> • Green corridors • Via stops (on-demand public transportation service) • Bike rack
Improving visibility		<ul style="list-style-type: none"> • Landmark features • Lighting • Signage • View corridors
Improving wayfinding		<ul style="list-style-type: none"> • signage • landmark • paths and trails • lighting • digital tools (kiosk, etc.) • map
Enhancing walkability and pedestrian activity	<ul style="list-style-type: none"> • Widening sidewalks • Creating seating areas along the streets • Increasing and making visible crosswalk 	<ul style="list-style-type: none"> • Crosswalk • Sidewalk with seating area

Considering inclusive design	<ul style="list-style-type: none"> • ADA requirements 	<ul style="list-style-type: none"> • Accessible equipment, pathways, ramps, and other options • Inclusive playground • Easy-to-read signage • Natural elements • Sports facilities • Lighting • Art installations
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4.8.Summary

This chapter presents the results of the data collection and analysis to answer the research questions and inform the design proposal. The GIS data layering identified 7.6% of developable vacant lands in Arlington. The 2023 ParkScore Index shows Arlington ranked 74th out of the 100 largest U.S. cities regarding park access, quality, and equity, indicating a need for more and better green open spaces. The population of Arlington is diverse, young, and growing, with varying preferences and needs for green open spaces. Expert interviews with urban planning, parks and recreation, and landscape architecture experts revealed the challenges and opportunities for green open space design in Downtown Arlington, such as connectivity, identity, programming, and maintenance. User surveys with residents and visitors of Downtown Arlington showed the perceptions and expectations of green open spaces, such as the importance of shade, safety, amenities, and activities. Lastly, the design consideration matrix summarized the critical design elements, amenities, and program requirements for the design site based on the data analysis and literature review. The findings from this chapter provide the basis for developing a conceptual design framework for a new green open space in Downtown Arlington that repurposes vacant lands and enhances community identity.

5. Design

5.1.Introduction

This design chapter was utilized as part of the Research through Design (RTD) method. According to Deming and Swaffield (2011), design is a “precious type of opportunistic response,” a projection of a potential future landscape in response to a change in condition or need. Design processes can utilize or draw insights from various research methods such as inventory, interpretation, and engaged action, and they can directly implement, scrutinize, or build upon the findings of empirical studies, case examples, and design guidelines from previous research (Deming & Swaffield, 2011).

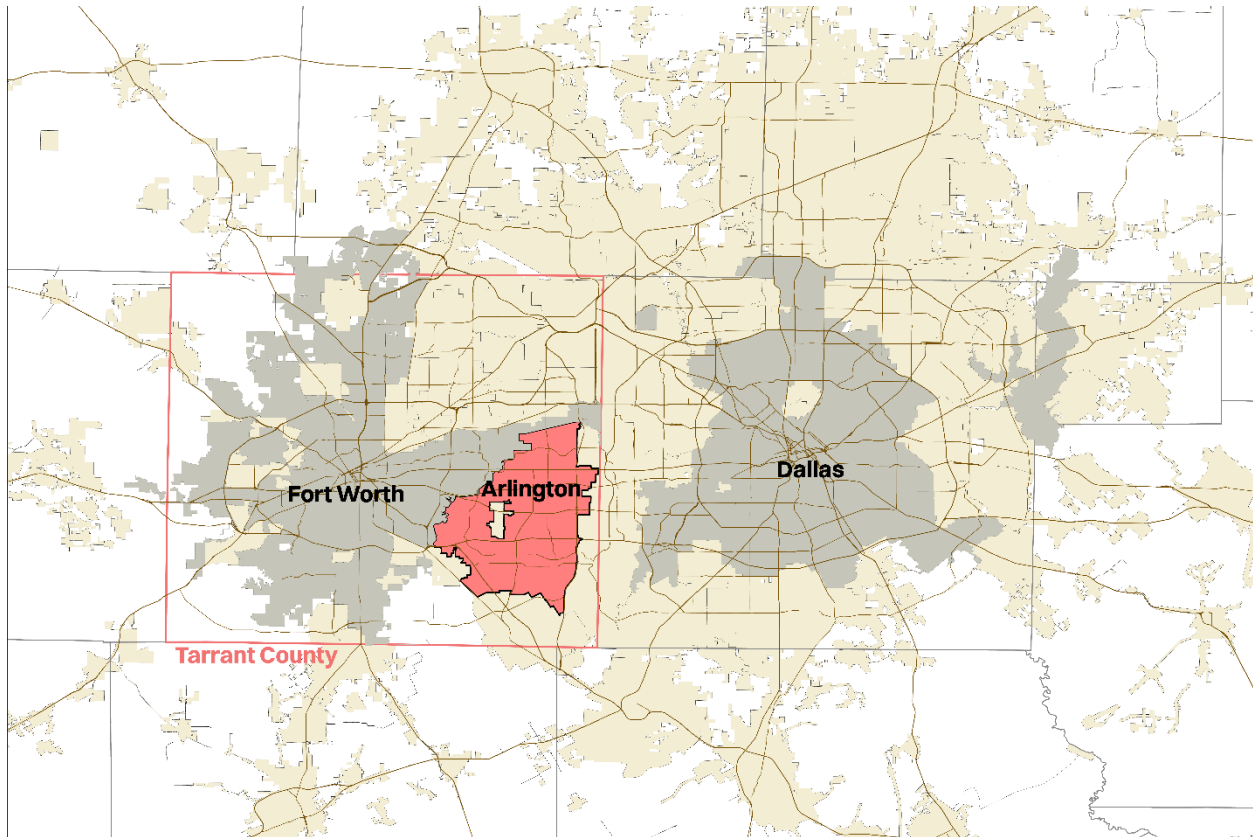
This chapter illustrates the design approach for green open space design in Downtown Arlington by examining literature reviews, inventory, and analysis data. Site inventory and analysis are crucial to understanding the current state and context of the site. Through site inventory and analysis, opportunities and constraints can be defined, and design solutions can be applied to enhance the space or solve the issues.

5.2.History of Arlington and Downtown Arlington

Arlington is located between two major metropolises, Dallas and Fort Worth (Figure 22). In 1876, the Texas and Pacific Railroad surveyed a railway station, marking the inception of Arlington's trajectory. By July of that year, the inaugural train arrived, and Arlington received official recognition from the United States Postal Service in 1877.

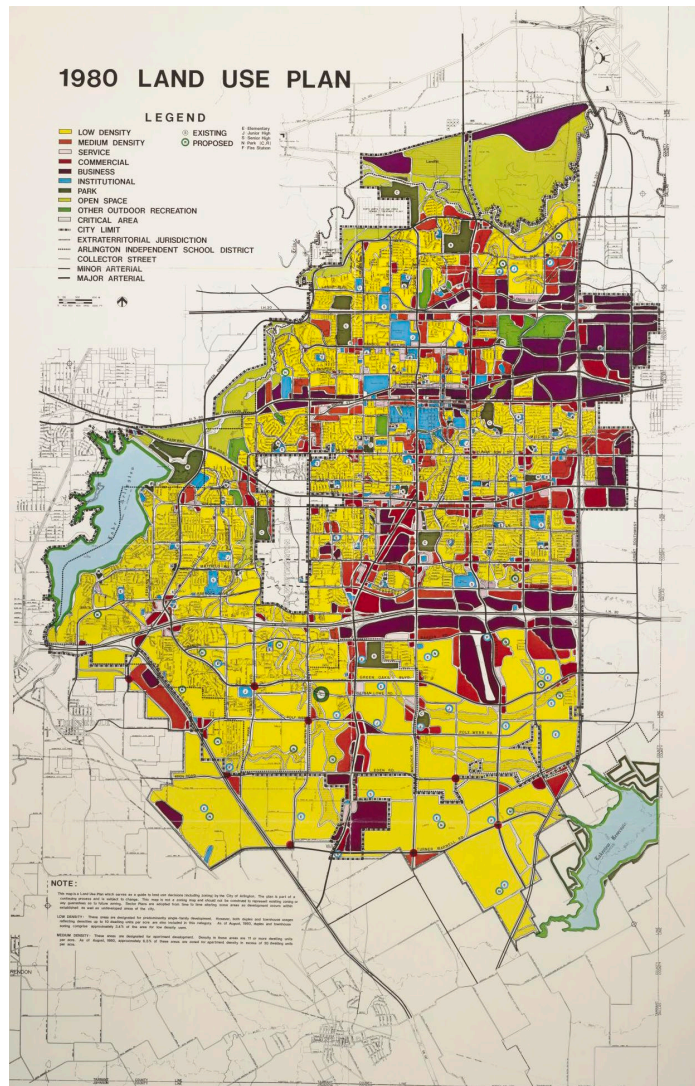
The land's agricultural viability, strategic location, and transportation infrastructure paved the way for Arlington's economic prosperity, with the population exceeding 3,700 by the 1930s. A renowned mineral well and the agricultural center transformed the first area into a notable tourist attraction (City of Arlington, 2023).

Figure 22 Arlington is located between Dallas and Fort Worth, which are two major big cities in the DFW Metropolis.



The decline of interurban rail lines in 1934, attributed to the proliferation of automobiles and enhanced road networks, reshaped transportation dynamics. Nevertheless, the Texas and Pacific Railway retained its pivotal role, helping with the daily passages of freight and passenger trains. The inauguration of the Dallas Fort Worth Turnpike (now Interstate 30) in 1957 marked a significant milestone in transportation development.

Figure 23 1980 Arlington Land Use Plan (Source: The Portal to Texas History)



Arlington's ongoing evolution unfolded with the establishment of Six Flags Over Texas in 1961 and the relocation of the Texas Rangers in 1972, cementing the entertainment industry as a fundamental economic force. Figure 23 shows the land use result in 1980 caused by Arlington's development. In 2009, Dallas Cowboys Stadium (now AT&T Stadium) was opened.

Downtown Arlington was started as a small community within a half-mile of the train station. Downtown was a center for produce and agricultural sales and rail transit. The city grew north and south, of which the I-30 and I-20, and the downtown population decreased. The Downtown

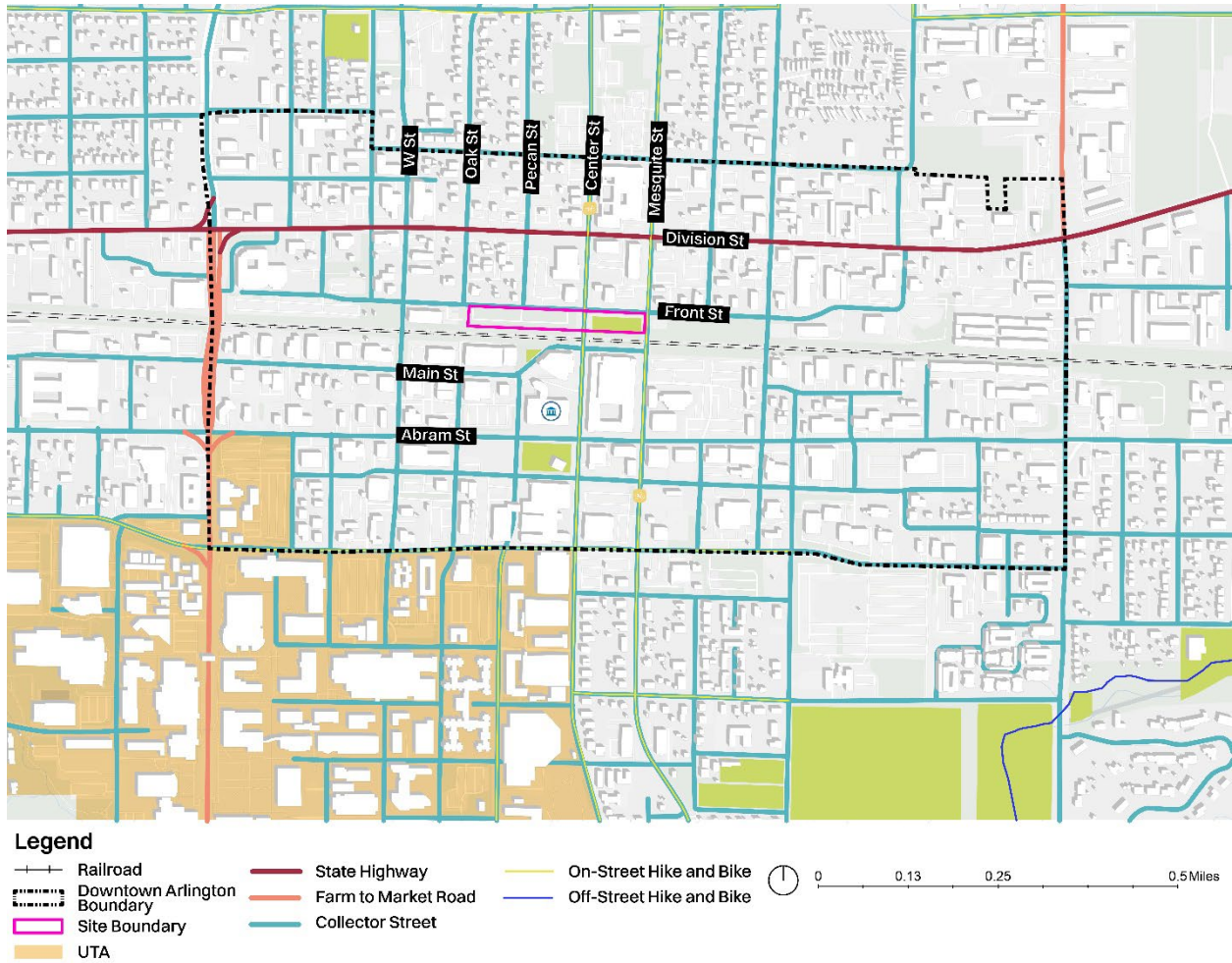
area shrunk and sometimes disappeared in unintentional disinvestment (Downtown Arlington, 2023). By 1990, downtown revitalization initiatives had gained momentum, rendering it an appealing hub for residents and businesses. The resultant growth and expansion positioned the entertainment sector as a foundational element of Arlington's economic landscape. Arlington has the 49th largest population among the 50 most populous cities in the nation, underscoring its dynamic history and continuous evolution (City of Arlington, 2023).

5.3.District and Site Inventory

5.3.1. Circulation and connectivity

Downtown Arlington's current boundary is defined by four major roadways: Cooper Street, Collins Street, Nort Street, and Border Street. Union Pacific operates freight transportation through the Texas and Pacific Railroad, and the former T&P station downtown is closed, and only the platform remains on the Union Pacific property. Another major road that runs through downtown is Division Street, home to many car-related businesses, making the downtown area look more like a car-dominant urban core. It is a major road to cross north and south through Center Street and Mesquite Street. The other major road connecting to the design site is Abram Street, south of the railroad. Division Street and Abram Street are major connectors for Downtown Arlington. The on-street bike lane through the downtown core is on Center Street and Mesquite Street, passing through the design site. Figure 24 is a map showing the overall circulation of downtown and its surroundings, including road hierarchy, major roads around the design site, and on- and off-street hiking and biking trails.

Figure 24 Vehicular Circulation (Source: NCTCOG; City of Arlington Open Data Portal Layered in ArcGIS Pro)



Many of the roads adjacent to the design site have sidewalks installed. However, Front Street, which is on the north side of the design site, needs a sidewalk on one side, and many of the roads connecting the north and south outside the central commercial area do not have sidewalks (See Figure 25). Enhancing the sidewalks is necessary to improve pedestrian connectivity. In addition, except for Center Street and Mesquite Street, other roads do not have crosswalks, and instances of jaywalking have been observed. Therefore, it appears necessary to improve sidewalks and establish crosswalks to enhance pedestrian safety and connectivity, focusing on adjacent intersections.

Figure 25 Existing No Sidewalk Conditions Around the Design Site

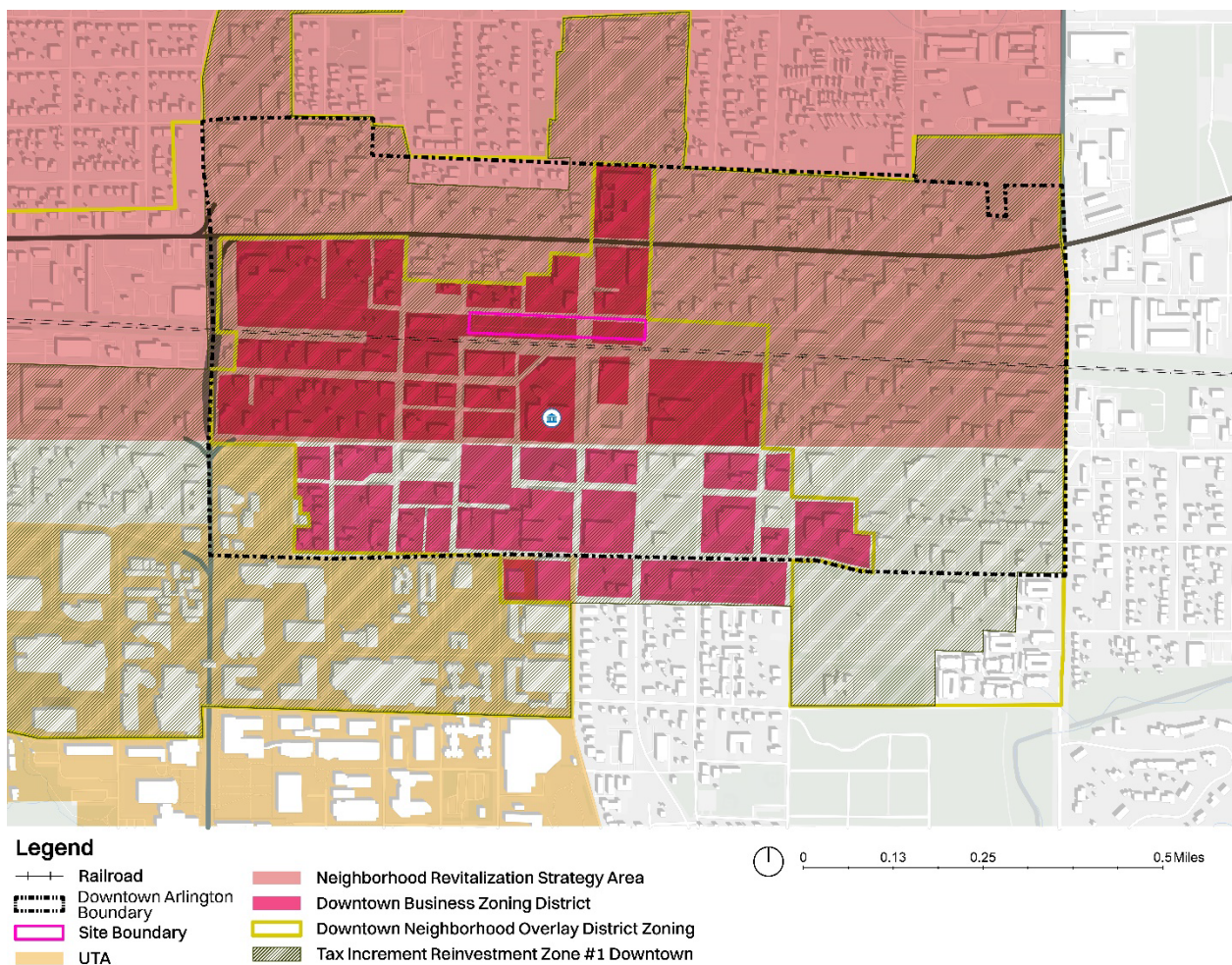


5.3.2. Zoning District

According to the zoning district, the site is in the Neighborhood Revitalization Strategy Area (NRSA), Downtown Business Zoning District, and Tax Increment Reinvestment Zone (Figure 26). NRSA is a designated Community Development Block Grant area aimed at revitalizing Arlington. The City of Arlington established the Central Arlington NRSA to address prevalent poverty and development needs, with extensive community involvement encouraged and required for comprehensive revitalization efforts. The Central Arlington NRSA, with 64.6 percent residential land use, encompasses historic housing, a state university, and diverse populations (City of Arlington). The Downtown Business Zoning District is a designated area that focuses on bringing together a variety of activities, including downtown, civic, service, office, institutional, cultural, residential, and other uses within the established central business

district. The main objective of this district is to support the revitalization efforts of Arlington's original downtown area. By allowing specific land uses, the DB district aims to create a distinct identity for the downtown area, enhancing its significance as a unique civic and ceremonial center within the city (City of Arlington). The Tax Increment Reinvestment Zone (TIRZ) aims to reimburse private developers for public infrastructure enhancements that could lead to a financial gap in a project. These enhancements encompass parking, water, sewer, drainage, street and sidewalk design and construction, signals and signs, and easements for public purposes (City of Arlington).

Figure 26 Zoning District (Source: City of Arlington Open Data Portal)

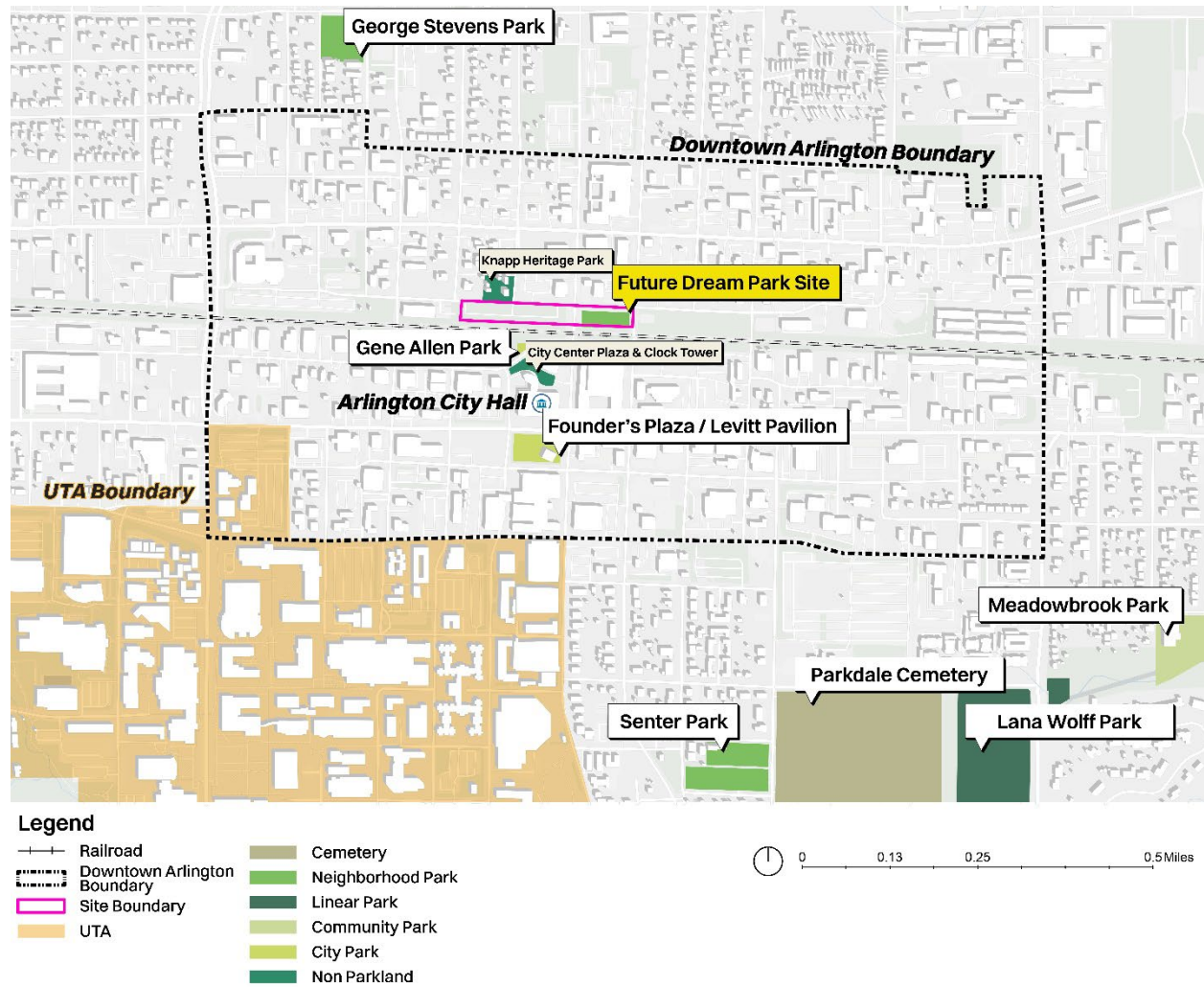


It proposes green open space within the design site where various zones overlap, which is crucial for activation. This approach enhances residents' quality of life, attracts businesses and investments, and improves the area's overall appeal. This aligns with the goals of each zoning district to address poverty and development needs, establish a unique downtown identity, and enhance public infrastructure. Therefore, green open space design is beneficial and essential within these zoning districts.

5.3.3. Park Property

The map shows the current green open spaces (Figure 27) within and around Downtown. In Arlington's parks property GIS data, only two parks and plazas are indicated as parks. However, Knapp Heritage Park and the space between Arlington Public Library and City Hall (informally called the City Center Plaza and Mineral Well Clock Tower) can be treated as green space (Figure 28). Most parks around the downtown boundary are on the south side. Neighborhood Parks, cemeteries, linear parks, and community parks are indicated. One neighborhood park is to the north of the Downtown. Levitt Pavilion is a city park, but the future Dream Park site is a neighborhood park. Overall, including informal park sites on the park property, many more green open spaces are still needed in Downtown Arlington.

Figure 27 Park Properties (Source: City of Arlington Open Data Portal)



As described in the earlier chapter, part of the design site is planned for Arlington Dream Park, which is the Arlington Rotary Club funds. According to the article from the city of Arlington (2023), Arlington Dream Park has the gear shape sculpture as an interactive public art called “Boundless,” meaning capturing the 2023’ Rotary International theme of “Imagine.” The gear shape represents the Rotary Club of Arlington’s dedication and acts as a new anchor of Downtown Arlington. Location-wise, the future Dream Park site has potential opportunities to serve and connect several neighborhoods both north and south of the railroad. Also, the site can connect a few city parks, historic parks, and open spaces due to its location.

Figure 28 Park and Open Space in Downtown Arlington



Founder's Plaza/ Levitt Pavilion



Knapp Heritage Park (No Park Property)



Gene Allen Park



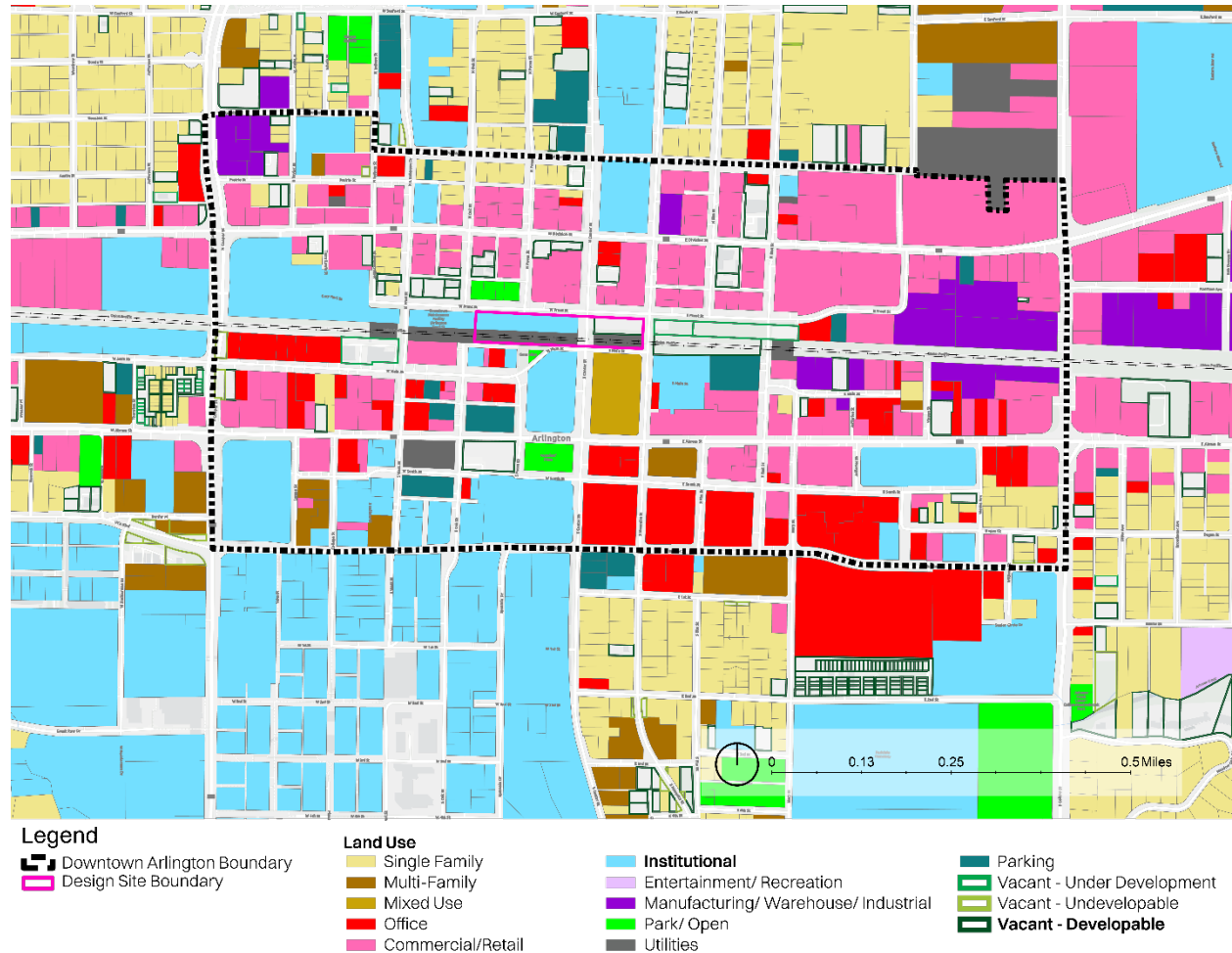
City Center Plaza and Mineral Well Clock Tower (No Park Property)

5.3.4. Current Land Use and Vacant Land

According to the current land use data provided by the city of Arlington (Figure 29), significant land use types within the downtown area are commercial and retail. Due to the proximity of UTA and several municipal facilities, the second largest land use type is institutional. The surrounding land uses of the design site are diverse, including commercial/retail, mixed-use, park, institutional, office, utility, parking, and several vacant lands. 101 Center is the major residential area of the park site due to its close location and population. On the east side of the design site, there are vacant lands under development, which will be office and commercial buildings. The design site itself is also indicated as developable vacant land, and many of the vacant lands within the downtown area are developable or under

development. Overall, the downtown area, especially surrounding the design site, is developed with a diversity of land uses and will be denser with several mixed-use development plans.

Figure 29 Land Use Map (Source: City of Arlington Open Data Portal)

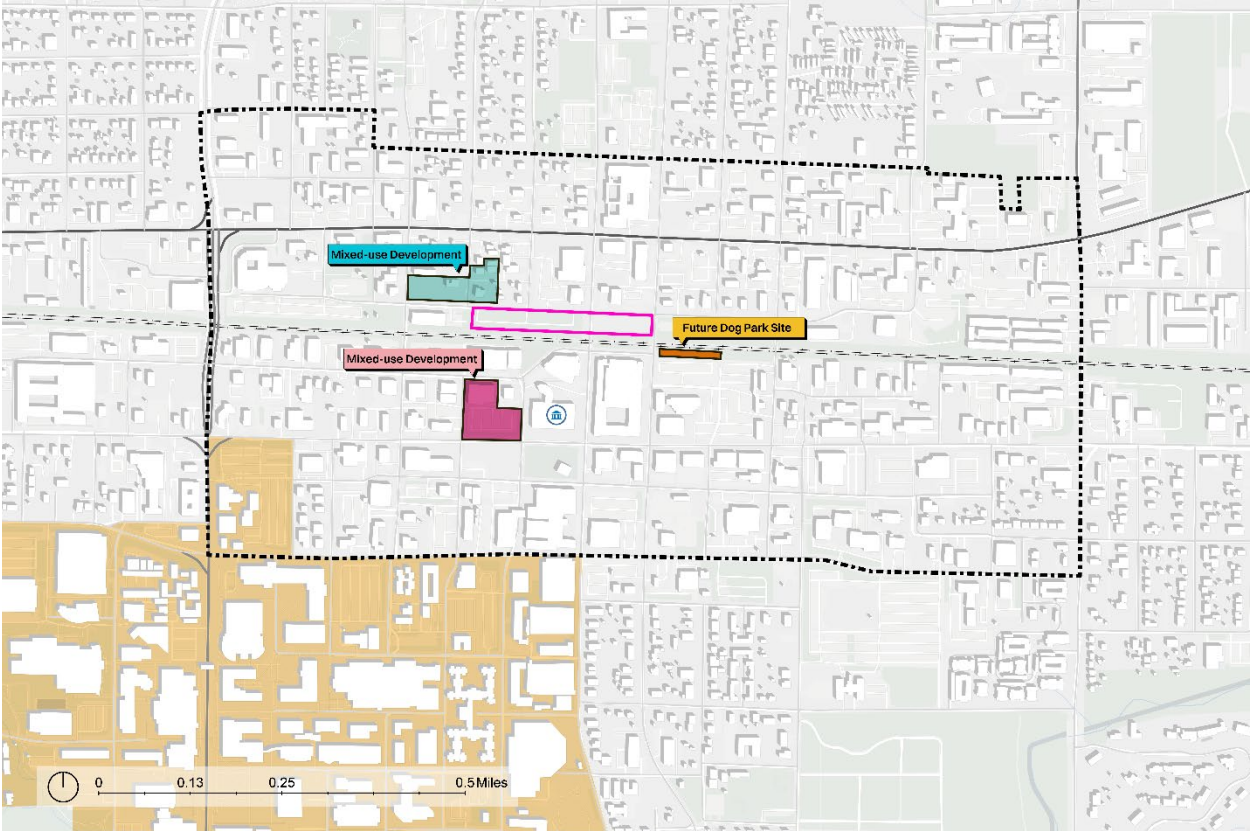


5.3.5. Future Development Plans around Design Site

According to the signed 380 agreements and documents and the information from Downtown Arlington, several future developments are presented in Figure 30. The future dog park is designated on the Union Pacific railroad property, informally called the railroad corridor. This plan shows the opportunity to develop the railroad right of way along the design site. Two mixed-use development plans are anticipated according to the 380 agreements. These two

significant developments are expected to bring more people into the downtown area and make downtown more densely populated. Therefore, quality green open space is needed to serve the future larger community.

Figure 30 Future Developments in Downtown Arlington (Source: 360 Agreement; Downtown Arlington)



5.3.6. Surrounding Neighborhood Socio-Demographics

Understanding socio-demographic factors is essential to identifying potential users of a space. This study delves into the socio-demographic data from two adjacent census tracts from the design site, 1222 and 1223, in Tarrant County, Texas, using the United States Census Bureau data. Census tracts typically house around 4,000 residents, ranging from 1,200 to 8,000 (United States Census Bureau). Despite the different sizes of the two tracts, their data vary significantly. The specific information is as follows:

Population: The combined estimated population of these tracts is 7,737, with tract 1222 housing 2,095 individuals and tract 1223 housing 5,642, nearly double that of 1222. The median age in census tract 1222 was 29.8, and in census tract 1223, it was 21.8. The median age of the city of Arlington was 32.8, and the median age of Tarrant County was 35.1. 69.9% of the population in tract 1222 and 37.9% of the population in tract 1223 use language other than English at home in census tract 1222. 36.7% of the population in the city of Arlington use a language other than English at home. The percentage of the older population, 65 years and older, in tract 1222 was 7.8%, and in tract 1223 was 4.3%. The percentage of the older population in Arlington was 11.3%.

Income: According to the 2022 American Community Survey 5-Year data, the median income was \$34,031 for individuals in tract 1222 and \$22,707 for those in tract 1223. Interestingly, the median income was significantly lower than the median household income of \$70,433 in Arlington. Regarding work experience, the usual hours worked for workers in tract 1222 was 41.7, and in tract 1223, it was 28.3. For the city of Arlington, the mean usual hours was 39.6.

Housing: The total number of households was 758 in tract 1222, with an average family size of 3.91, and 1,492 in tract 1223, with an average family size of 2.62. In comparison, Arlington's average household was 140,525, and the family size was 3.47. Regarding financial characteristics, the median gross rent in tract 1222 was \$1,102; in tract 1223, it was \$1,076, below the mean gross rent in the city of Arlington, which was \$1,333.

Education: According to the 2022 American Community Survey 5-Year Estimates data, 6.3% of individuals in tract 1222 and 46.7% in tract 1223 have a bachelor's degree or higher. For the city of Arlington, 31% of individuals have a bachelor's degree or higher.

These findings provide valuable insight into the socio-demographic characteristics of the potential users of the space, which can inform the design process. The significant factors of the two tracts, particularly in terms of population and housing, suggest that a diverse range of amenities and programs may be needed to cater to the needs of the different population groups.

5.4.District and Site Analysis

Through the site inventory process, the site's opportunities and constraints are indicated by considering the surrounding context and connections. The analysis is helpful to understand the site and its connection with the downtown area. According to the walkability analysis conducted in ArcGIS Pro (Figure 31), most of the downtown areas are located within a 15-minute walking distance from the design site. This suggests that it can serve most of the downtown and surrounding residential neighborhoods and the UTA area on local level.

Figure 31 Walking Distance Analysis (ArcGIS Pro)

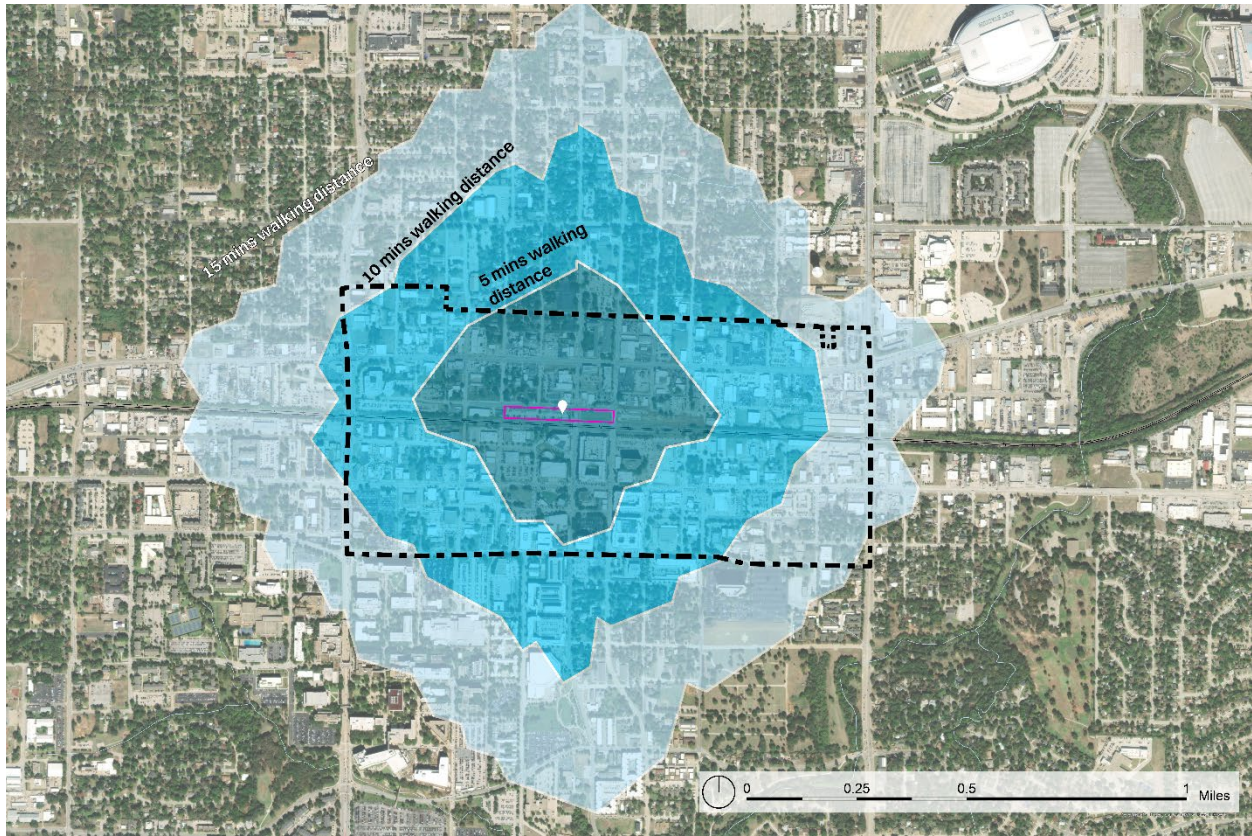
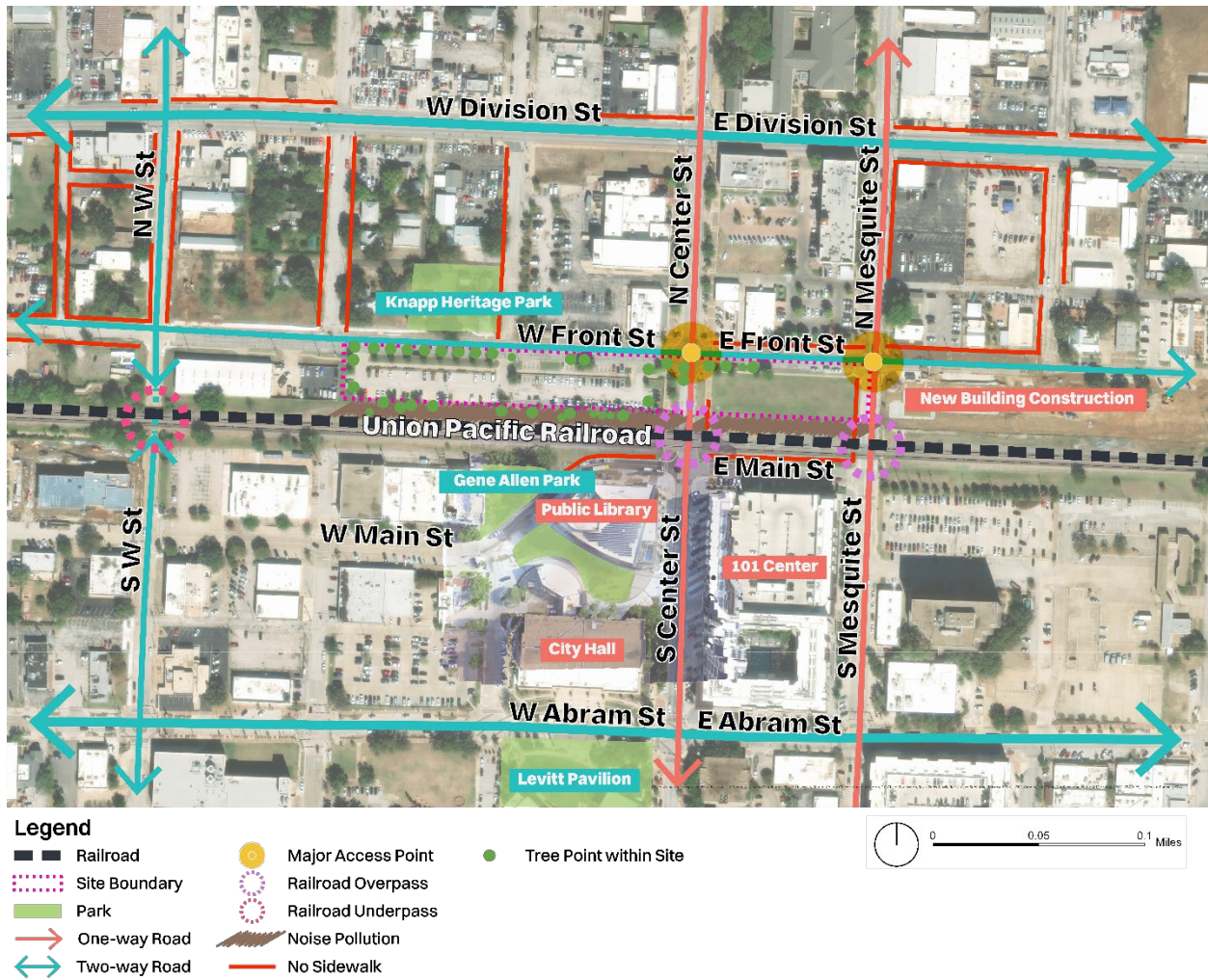


Figure 32 shows the overall analysis conducted through the inventory process. An inventory and research process were undertaken to investigate the conditions and contextual elements of the design site and its adjacent areas. The insights gleaned from this analytical procedure have illustrated a range of opportunities and constraints inherent to the design site. These findings, derived from the meticulous analysis, are poised to inform and shape the subsequent design process.

Figure 32 District and Site Analysis



5.4.1. Site Opportunities

The site's potential to serve as a green open space, a critical amenity for the community, has identified several site opportunities. These opportunities aim to enhance the community's identity and quality of life and can be maximized by leveraging the insights gained through prior research.

- The design site is strategically located in the heart of Downtown Arlington.

- The land use surrounding the design site is diverse and dense, offering a rich context compared to other parts of downtown.
- The planned mixed-use developments and the construction of new office and commercial buildings around the design will necessitate more community amenities.
- The intersections on Center Street and Mesquite Street with Front Street can serve as gateways to space for vehicles and pedestrians, offering opportunities for everyday and unique use programming in the park.
- The design site holds historical significance as the initial point of the city of Arlington with the train station, which can be incorporated as a design element.

5.4.2. Site Constraints

While the design site offers numerous opportunities, it also presents several constraints that need to be addressed for the successful implementation of the project. These constraints were identified through analysis and research. These constraints must be carefully considered and addressed in the design process to ensure the creation of a space that is aesthetically pleasing, functional, and beneficial to the community.

- The site suffers from poor shade conditions, which need to be addressed to mitigate the extreme weather conditions in Texas.
- The two major neighborhoods on the north and south sides of the railroad are disconnected, posing a challenge to community cohesion.
- Noise pollution from the railroad could potentially detract from the tranquility of the park site.

- Enhanced pedestrian connections are required for walkability and pedestrian activity. This can be achieved by emphasizing and creating sidewalks and crosswalks to increase pedestrian safety and prevent accidents.
- The neighborhoods around the design site are characterized by low-income and high poverty levels, as per the census data of the city of Arlington, which may influence the types of amenities and programs that can be supported.
- The dominance of surface parking lots and numerous impervious surfaces contribute to the image of a car-centric city, which is not conducive to creating a vibrant, pedestrian-friendly downtown area.
- Downtown Arlington lacks identifiable landmarks. According to the user survey result, while Downtown Arlington is perceived as an entertainment and university district, there is a lack of distinct images associated with Downtown Arlington.
- The lot size is small and narrow compared to other green open spaces in Arlington, which may limit the types and scale of amenities that can be accommodated.
- The design site is between a railroad and a vehicle road, raising safety concerns that must be addressed to create a safe and pleasant environment.
- Currently, there are no programs for community use, limiting the site's appeal and utilization by the local community.

5.5.Design Concept

The design concepts were structured based on the site analysis, considering the opportunities and constraints of the design site, which define its characteristics. Located within the downtown area, the design site was considered in the context of the overall theme and goal of downtown as planned by the city of Arlington.

The City of Arlington Downtown Master Plan (2018) envisions a dynamic, multifaceted, and inclusive urban core. It aims to attract a diverse population for residential, professional, social, and recreational purposes, thereby establishing a unique identity. The plan underscores the importance of a resilient economy, diverse housing options, and a concentration of activities to support and attract businesses and residents. It advocates for the activation of streets and open spaces, the promotion of arts and culture, and the support of civic and community-oriented programs. The overarching objective is to foster a community that is welcoming to all demographics.

To achieve these goals for Downtown Arlington, the design goals, strategies, and elements for the design solution were applied through an analysis process. These were applied in conjunction with the opportunities and constraints of the design site, which served as the foundation of the design concept. This approach ensures that the design concept is grounded in a deep understanding of the site's unique characteristics and aligned with the broader objectives for Downtown Arlington. The design concepts were selected from the proposed design solutions (Table 2) based on the site opportunities and constraints. The concept of the park design was as follows:

Uses & Activities

- Providing flexible and multipurpose space for various events, such as food trucks, farmer's markets, art, performances, and daily uses
- Making street buffer between vehicles and pedestrians to make the place a pedestrian-centered place
- Considering striking crosswalks and node design for the indicatable intersection for pedestrian walkability and safety
- Considering various potential programs for each section of the park, such as walking, eating, performance, dog walking, kids playing, unique events, and photography
- Diverse types of seating and gathering spaces

Sociability

- Making welcoming intersections with paving color, streetscape, striking structure, and public art by emphasizing entrance and street to make people well indicate the place
- Applying local arts such as Arlington stars, DREAM sculpture, Boundless sculpture, and others
- Design collaboration through partnership with various downtown organizations, such as furniture, murals, programming, and even volunteerism
- Considering various gathering and social spaces with neighbors, co-workers, families, friends, and others

- Reflecting characteristics of surrounding areas into the design, such as land use, materials, or user groups, to make cohesion

Comfort & Image

- Emphasizing major nodes for both vehicles and pedestrians' access and safety
- Making several activities and small destinations that make a great place to go
- Providing shaded areas by using different methods such as trees or shade structures
- Considering environmental sustainability through various methods such as planting trees and native plants, using recycled materials, applying green infrastructure, or making green corridors
- Providing a variety of seating options with shade and sun for individuals and groups
- Fostering a sense of safety and security by providing open spaces and less enclosed spaces, lighting, or lower barriers to see through
- Controlling noise pollution and surface runoff by dense tree cover and water feature
- Promoting health by encouraging people to use green open spaces such as walking trails or play area

Access & Linkages

- Encouraging proximity to green open space by co-locating with activities hubs with residential areas, workplaces, restaurants, retail establishments, and others
- Increasing connectivity and accessibility by considering pedestrian and bicycle connectivity and safety

- Improving visibility through various wayfinding methods such as landmark features, lighting, signage, paths and trails, digital tools, and map
- Enhancing walkability and pedestrian activities by widening sidewalks and increasing and making visible crosswalks
- Considering inclusive design for ADA requirements such as accessible equipment, pathways, ramps, easy-to-read signage, and other options

5.6.Design Proposal

The design proposal for the park was developed through the design concepts discussed in the previous sector. The overall design comprises intersections, open spaces, and streetscape. Figure 33 represents the overall design of the site and its surroundings. For this design thesis, the major park site did not include Union Pacific property, but for better pedestrian connectivity, sidewalks were created within Union Pacific property. The visual representation of the changes and improvements the park design will bring to the site and its surroundings. The comparison shows the benefits of repurposing vacant land into green open space.

Figure 33 Park Schematic Plan



‘Dream’ and ‘Boundless’ sculptures, which were suggested in the original Rotary Dream Park design, were kept on the park property; however, to cohesion the overall design, the sculptures were adjusted. As one of the goals of the park’s creation is to enhance the city’s image, the furniture was designed in an exciting shape that matches the theme. Also, by using local materials and vendors or reflecting local design features, this approach can be considered sustainable due to its reduction of transportation costs and emissions, and it also supports the local economy and community. LEED suggested using local material, a product sourced within 100 miles of the project site. Using local plant materials helps reduce frequent maintenance and provides healthier nature communities.

5.6.1. Intersection Design

The major roads around the park are Center Street and Mesquite Street, north-south, and Front Street, east-west. The railroad located south of the site could serve as a barrier, but it could also become a focal area depending on its emphasis during the design process. Similar local roads, Oak Street and Pecan Street, can be minor intersections directly connected to the site. Emphasizing the intersections formed by these roads can welcome people and serve as an element of wayfinding. This can also improve visibility and increase connectivity and accessibility for both pedestrians and vehicles. The most significant intersections are where Center Street and Mesquite Street meet Front Street. Each road is one-way, but pedestrians can enter from any direction, so a design that considers both pedestrians and drivers was proposed (See Figure 34).

Figure 34 Emphasizing Park Entry



Each intersection comprises six ellipses connected to adjacent areas and forms individual programs. For example, in the area where the railroad, Main Street, and Center Street intersect, public libraries, city halls, and 101 Center can be emphasized. Figure 35 shows the existing condition of the intersection of Center Street and Front Street. Figure 36 represents the proposed entrance to the park, emphasized by the intersection of Center Street and Front Street. The view from outside the park is fundamental to attracting the attention of potential users. The DREAM Sculpture was relocated from the other area of downtown due to the plan for the original Dream Park (See Figure 37). This sculpture is also a public art as a focal object, and the word DREAM itself symbolizes the identity of Arlington. Streetlights and banners, tree planting, and continued green streets emphasize the park entry.

Figure 35 Existing Condition of Intersection on Center Street and Front Street (Source: Google Maps)



Figure 36 Proposed Main Intersection of the Park on Center Street and Front Street



Figure 37 Proposed View towards West Side of Center Street



The emphasized crosswalk and oval floor pattern include focus from outside the park and assist pedestrian access. Each node was emphasized as a focal point, but these could also be the unique destination and connection through other park areas. On the east side of Center Street is another central entrance to the park (See Figure 38).

Figure 38 View on the East Side of Center Street



Another node of the park entry (Figure 40) is on Mesquite Street and Front Street, which reflect the surrounding land uses such as businesses, commercial, restaurants, and mixed-use residential. To cohesion the diverse demands, the node was considered a multi-purpose node to have various programs on the intersection, such as food trucks, gatherings, or relaxing. Part of these two entry nodes could be utilized as the entrance and circulation uses, flexible space, and small destinations when the street is blocked for weekends or special events. Figure 39 shows the existing condition of the intersection on Mesquite Street and Front Street.

Figure 39 Existing Condition of Intersection on Mesquite Street and Front Street (Source: Google Maps)



Figure 40 View from the intersection on Mesquite Street and Front Street



Nodes on Oak Street and Pecan Street (Figure 41) were also constructed to provide better pedestrian access from the surrounding neighborhoods and provide better a visual connection.

Emphasized crosswalks and oval-shaped pavements can emphasize the direction of the park to encourage better access (See Figure 42). These nodes can also be essential connectors between the park and other parts of downtown.

By increasing and emphasizing the critical nodes, pedestrian connectivity and recognition of the park could be increased. Visibility for pedestrians and drivers can be improved through node design to increase access and safety.

Figure 41 Existing Condition of the Intersection on Pecan Street and Front Street (Source: Google Maps)



Figure 42 Proposed View from the Intersection on Pecan Street and Front Street



5.6.2. Open space Design

Several open spaces were designed within the park, depending on the major programs of each space. Those spaces were broken into three major sections: civic plaza, art plaza, and flexible lawn. The walking path pattern is made up of the edge of each space passed through the park, and it divides spaces visually and physically but also connects each location. The total walking path is approximately 1,300 feet, so when people walk this path four times, the total walking length would be around 1 mile. This walking path can provide aesthetic encouragement and promote public health through physical activity.

The art plaza on the west side of Center Street focused on collaborating between the public arts and various art-related downtown industries and the city of Arlington (Figure 44). This plaza can be utilized for daily use. However, it can also cover various programs such as outdoor exhibitions, library programs, UTA exhibitions, or space for public meetings by Downtown

Arlington Corporation. The furniture within this area is selected to provide flexibility and aesthetics. The overall theme of the art plaza is continued from the DREAM entry feature. Providing shade structures and planting trees help to mitigate extreme weather conditions during the summer season in Texas. Various seating options in the shade and sun are available for preference. Figure 43 shows the existing condition of the proposed Art Plaza area.

The water wall is suggested to reduce the noise pollution from the railroad, which continues through other parts of the park, to create harmony. Set up the water wall stimulated by the train's sound so it can be interactive and block the loud noise made by the train. Part of the fence surface in the art plaza reflects the history of Arlington and Downtown Arlington.

Figure 43 Existing Condition of Art Plaza (Source: Google Maps)



Figure 44 Proposed Art Plaza with Outdoor Exhibition

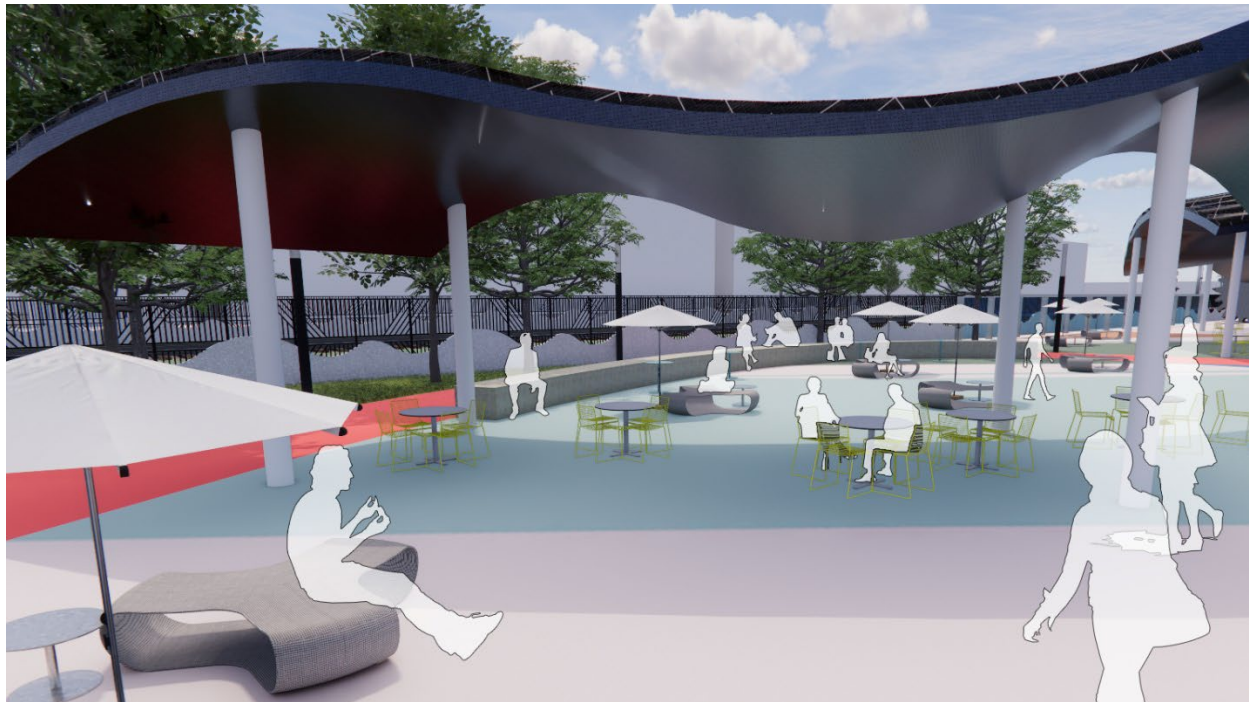


On the other side of Center Street, the civic plaza was designed for multipurpose use with pavement (See Figure 46). Figure 45 shows the existing condition of the proposed Civic Plaza. The shade structure and fence at the park's edge embody a curvilinear theme. Notably, the shade structure is equipped with photovoltaic panels to generate usable electricity by harnessing solar energy. The energy collected can be utilized for the park's system and the structure, providing lighting during the night for events or crime prevention. Various seating options provide a place for eating, gathering, relaxing, and other activities. The furniture and tree planters are movable so that the whole space can be utilized for special events such as the farmer's market, Arlington local market, art fair, flea market, food festival, or other programs. These programs reflect diverse land use around the plaza, especially many restaurants, offices, shared offices, and residential and municipal facilities. This plaza is connected to both main intersections on Front Street.

Figure 45 Existing Condition of Civic Plaza (Source: Google Maps)



Figure 46 Proposed Civic Plaza with Solar Panel Shade Structure



The flexible lawn area, which appears after passing through two plazas centered on Center Street, can be used for various purposes, like other spaces. However, it is covered with groundcover planting instead of increasing impervious pavement. Public-engaged art can be applied to the art of the fence surface as a community art installation. Such public installation art can be used with programs in downtown art workshops or libraries. For example, a specific size of tile can be priced, and residents or visitors can purchase a piece of tile that will decorate the fences along the train track and draw on it to participate in the production process as a class. A particular portion of the profits generated can be shared between the city and educational institutions to create benefits. Community participation in the design process can form community identity and attachment to residents.

The flexible lawn area is divided into three small destinations along the walkway across the park. Each destination includes The Great Lawn, Playing Yard, and Dog Park. Figure 47 and

Figure 48 each show the existing condition and the proposed Great Lawn area with shade trees and flexible furniture. Movable and flexible seating options for events such as picnics, performances, or community events are available. This location could be utilized for extending the use of other plaza areas.

Figure 47 Existing Condition of the Great Lawn (Source: Google Maps)



Figure 48 Proposed Great Lawn with Movable Furniture and Flexible Lawn



The Playing Yard provides various physical activities such as kids playing, yoga, or other outdoor activities (See Figure 50). Berms surrounding the lawn area were designed up to 3 feet for crime prevention and to foster a sense of safety, but they also provide more dynamic views and geography in the flat areas. The enclosure with the berms forms the territory for separation from other activities. The water wall and shade trees can help people stay during the hot weather. Figure 49 shows the existing condition of the Play Yard area.

Figure 49 Existing Condition of the Playing Yard (Source: Google Maps)



Figure 50 The Playing Yard with Berms



Dog parks are a component of community parks, offering a secure environment for dogs to exercise and interact with other dogs. Establishing a dog park is an effective strategy to foster

community engagement and provide recreational amenities. A survey by the National Recreation and Park Association (NRPA, 2019) revealed that 91 percent of Americans perceive dog parks as beneficial to their communities.

From a design perspective, an off-leash, fenced-in grassy area can ensure safety for both dogs and their owners. Amenities such as furniture and water stations can enhance the user experience while providing shade structure, and seating areas can encourage longer stays. The rain garden in the surrounding fence can collect untreated water from the dog park and provide aesthetics. Figures 51 and 52 each show the existing condition and proposed design of the dog park area.

Figure 51 Existing Condition of Dog Park (Source: Google Maps)



Figure 52 Proposed Dog Park with Rain Garden



5.6.3. Streetscape Design

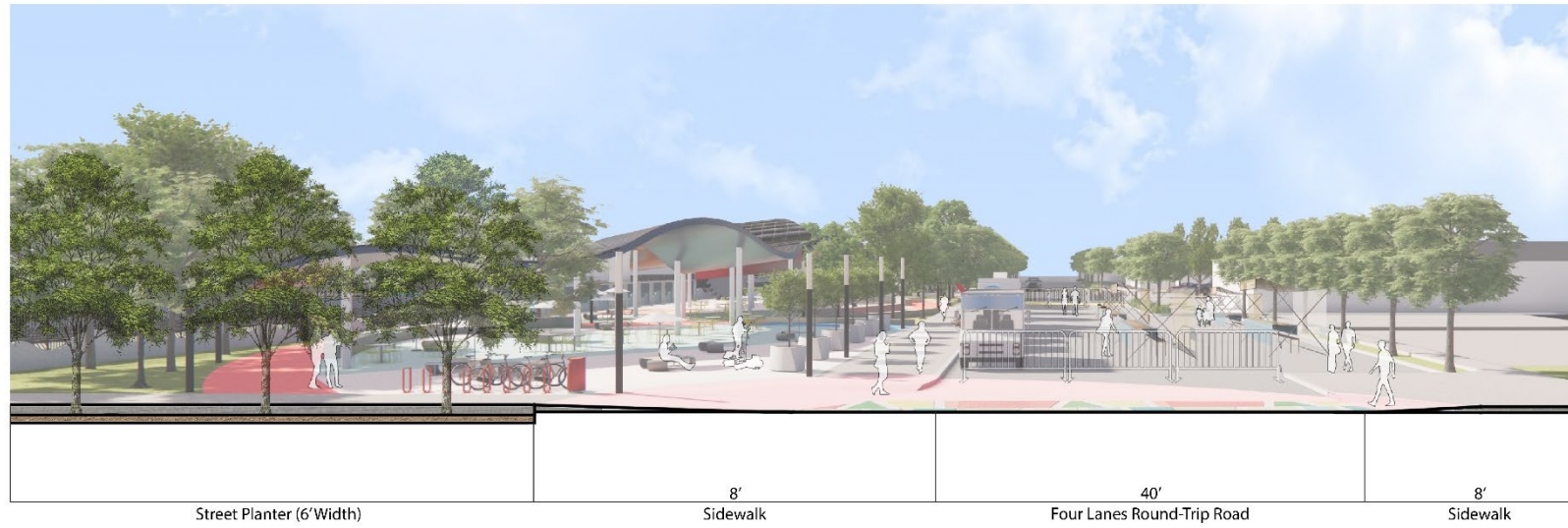
One primary design concept discussed in the previous section was creating a pedestrian-centric place. During the site analysis, the problems of lack of shade, sidewalk conditions, and lack of crosswalks were indicated. Enhancing the streetscape was a solution to make better connections with the surrounding community and increase walkability. Most streets around the park were designed for green streets. Tree planters along the streets are easy to plant along the sidewalk, and they help to create a street buffer between vehicles and pedestrians to create a safe walking environment. It can also collect surface runoff from park areas and roadways to mitigate stormwater runoff. It helps increase the amount of plant material within the urban area, and native plants were selected for sustainability which can help to reduce maintenance. Figure 53 shows the street sections of Center Street and Mesquite Street to illustrate the functional streetscape.

Figure 53 Street Sections on Center Street and Mesquite Street

| Center Street Section



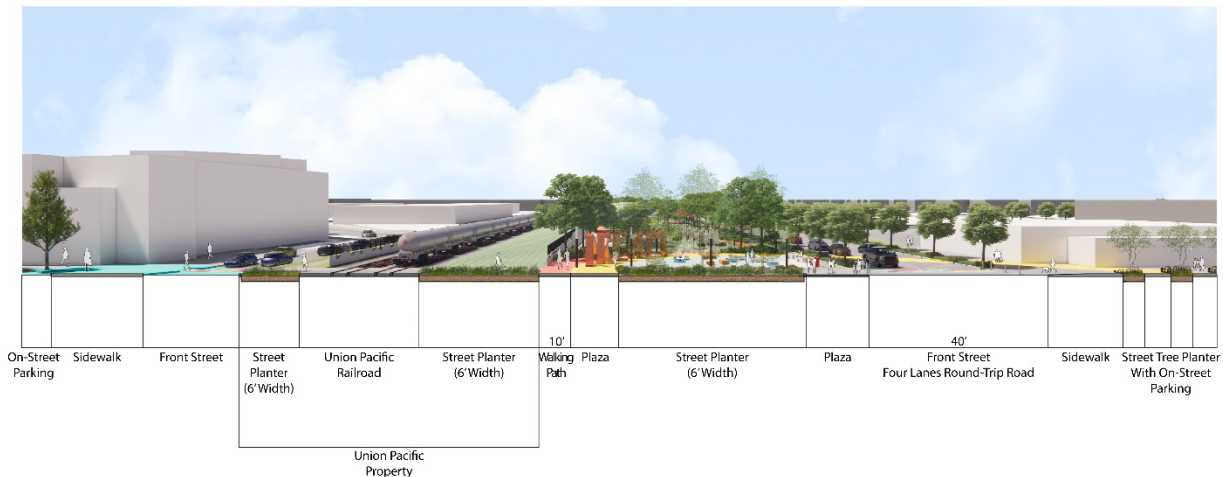
| Mesquite Street Section



Tree planting was one way to offer shade for pedestrians. Placing lighting in the proper location is also important to enhance a sense of safety and security when people walk the street. Some connected roads do not have sidewalks on the street, which can decrease walkability. Mirrored fences and proposed sidewalks along Main Street can help enhance safety and security from the railroad and enhance connectivity and walkability by having a similar vibe from the park area. Providing and widening sidewalks can help make walkable streets. Overall, the streetscape enhancement provided visually and physically improved walkability and connectivity. Figure 54 shows the section on Main Street and Front Street.

Figure 54 Street Section on Main Street and Front Street

| Main Street and Front Street Section

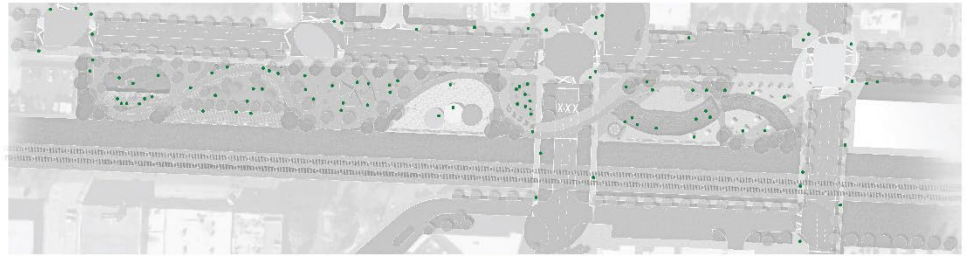


5.6.4. Different Use by Programs

Park uses may vary depending on events or time. Figure 55 shows an anticipated diagram of park usage by program users. Circumstances such as daily use, a food truck event, farmers’ market, and an art exhibition were selected as examples. However, each place can be flexibly used according to various programs and activities.

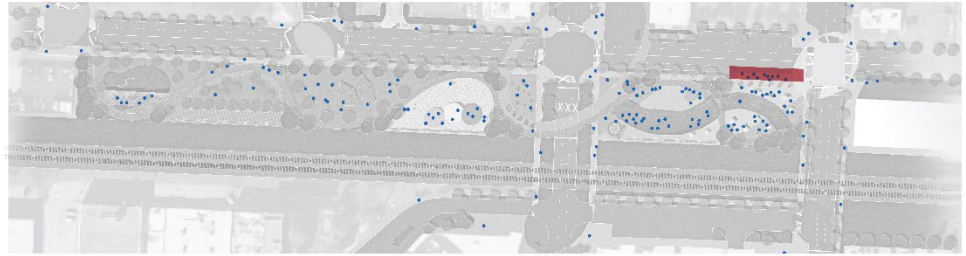
Figure 55 Anticipated User Distribution by Programs

Daily Use



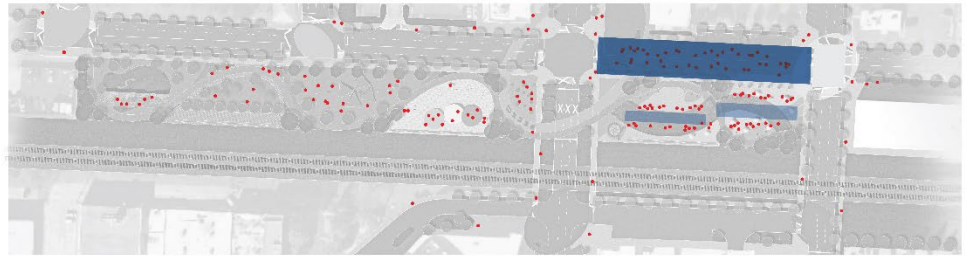
Food Truck

Food Truck Zone



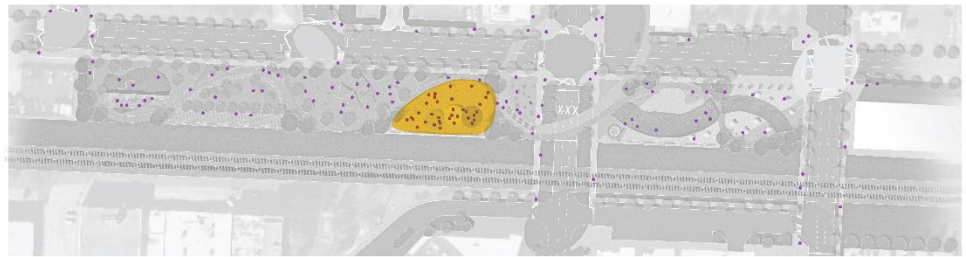
Farmers Market

Roadway Block
Event Zone in Plaza



Art Event

Art Exhibition



5.7. Summary

This chapter presents the design proposal for repurposing the vacant land in Downtown Arlington into a green open space that enhances the community's identity and quality of life. The site inventory and analysis were conducted through GIS layering and analysis, and opportunities and constraints were identified. Design concepts were developed based on these findings, and the design concept explains the main idea and principles that guide the design process. Design

elements illustrate the specific features and components of the design proposal. The design proposal includes intersection design, open space design, and streetscape design. The design proposal aims to create a green open space that can serve as a destination and an asset for Downtown Arlington and its surrounding communities. This chapter also shows how the design proposal can accommodate different uses and programs for various user groups.

6. Conclusion

6.1. Introduction

This design thesis explores the potential of vacant lands in Downtown Arlington to serve as green open spaces that could enhance the connectivity, amenity, and identity of the city. This research proposes a design and program for a new public space that could be used as a city central park. The findings suggest that vacant lands can be transformed into valuable assets for urban development and innovation. This work also contributes to the enhancement of community identity in Downtown Arlington by providing several small destinations within the park design.

6.2. Response to Research Questions

This design thesis explored how urban vacant land could be transformed into green open spaces that provide cultural, social, and environmental benefits for the community, such as recreation, community art, and stormwater management. The thesis reviewed the literature and precedent studies on the public value of urban vacant land. It proposed a framework for assessing vacant land's potential uses and benefits in different contexts.

1. How can urban vacant land be utilized to meet the needs and demands of residents and visitors through green open space design in a city?

Understanding the needs and demands of the community was crucial for successfully designing green open spaces. This design thesis conducted literature reviews, site analysis, expert interviews, and user surveys to identify the residents' and visitors' needs and preferences in Downtown Arlington. The research found that the landscape design process should involve the

community to ensure the green open space meets their needs and demands. This could be achieved through several methods, such as community meetings, surveys, and participatory design processes.

According to the district and site analysis, adjacent neighborhoods of the design site were young and diverse. Also, user survey results suggest providing various options for gathering and relaxing areas, more programs, more plants, and various shade options. Also, they suggested that the programs related to surrounding land use, such as places for eating, more seating options, and flexible space for various events and performances. Considering and understanding various user groups, community events, and site conditions and context are crucial to designing appropriate green open spaces.

2. How can urban vacant land be designed and implemented to enhance green open space in Downtown Arlington?

One idea presented to increase the limited green open space within Downtown Arlington is to repurpose urban vacant land. As mentioned, various development plans for the vacant land within downtown have already been designated for office or mixed-use residential buildings. Among their plans, the design site has been designated as a green open space plan called Arlington Dream Park. As mentioned in the interview, redevelopment plans for urban vacant land were considered a means to enhance the quality of life in the city beyond simply building structures. This paradigm shift reminded us that providing shared spaces that offer a variety of activities and rest areas beyond simply cramming people into the city center was essential. These green open spaces were not only a way to promote community health and the economy but also a way to express the city's identity.

Providing various small destination options within the design site is crucial to enhancing green open space in Downtown Arlington. According to the user survey, the current vacant land for the design site has yet to have specific programs for the community. Considering activities, gathering spaces, and shade options are crucial to responding to the lack of existing conditions. Multipurpose spaces can cover various programs and user groups. Redeveloping vacant land as green open space can provide multiple gathering spaces and promote social interaction.

The application of various sustainable methods is crucial to repurposing vacant land into green open space. According to the literature reviews and interview process, sustainability can be achieved in different ways, such as through plant materials, green streets, water features, and rain gardens. Many urban vacant land conditions are impervious, and green open space can function for aesthetic and environmental purposes. Adding vegetation could achieve tree shades, stormwater management, safety buffers, increased biodiversity, and air and noise pollution mitigation throughout the landscape design.

3. How can the repurposed vacant land enhance community identity and create vibrant community spaces and cultural diversity in Downtown Arlington?

Increasing community attachment and a sense of belonging to create a quality space is also essential. Through community engagement, the design could successfully enhance neighborhood livability and connectivity, increase community and property values, enhance pedestrian safety, and incorporate more green spaces into the urban area. In this design thesis, various activities, designated spaces, and programs for community participation were reflected through the design process. One example of community participation was a program of art installations on the fence created by the community. As design professionals, it is vital to reflect historical aspects of place into design; however, having flexibility for future use is also essential. Identity can be affected

by various factors, such as history, culture, economy, and physical environment. This also connects to a sense of place, among the many traits that emerged from the relations between people and the local identity (Shao et al., 2017).

Making a physical and visual connection between green open space and surrounding land uses is important for community attachment. In a user survey about the image of Downtown Arlington, it was often found that most people associate it with images outside of Downtown rather than within. While responses such as UTA could be considered valid because part of UTA overlaps Downtown, associations with an amusement park or sports facilities within the entertainment district were quite detached. As a result, it was concluded that there was a need for a place that evoked the downtown community. In response to survey questions about favorite places downtown, various restaurants, pubs, coffee shops, and other places frequented by residents and visitors were mentioned, including green open spaces like the Levitt Pavilion and city center plaza. Most of these places are located around the design site or partway outside Downtown. Therefore, it was judged that the design site could be positioned as the center of Downtown. This result also resulted in the need for accommodation for surrounding land use characteristics and the features other green open spaces did not provide, such as shades or more seating options.

Based on the findings, the thesis proposed a design concept and master plan for repurposing urban vacant land in Downtown Arlington to create vibrant and diverse community spaces that reflect the local identity and culture.

6.3.Design Implications

The Research Through Design (RTD) method was used to implement the design thesis. This approach explores, identifies, and maps out possibilities. As a research strategy, it applies designing and designs to inform alternative concepts and ideas (Nijhuis & de Vries, 2019). The suggested design through this design thesis was conducted through site-specific analysis.

Through the design process, the need for space to reflect the downtown identity and green open space to improve the quality of life of urban residents was highlighted. In particular, the lack of shade, the supply of seating areas, increased awareness of green open space, safety issues, and the need for space to accommodate various activities were reflected in the design.

1. **Striking crosswalks and node design should be considered to enhance visibility and connectivity.** According to the survey, the users suggested increased visibility of green open spaces from the roadway and walkway. They mentioned it took much work to indicate where green open spaces were in Downtown Arlington. Crosswalks and node design improvements could help promote better indication from outside of the design site. Also, safety and security issues were one concern of Downtown Arlington, which were discussed during the expert interviews. Emphasizing intersections of the crosswalk could reduce congestion with pedestrians and vehicles. Also, each intersection is essential to connecting the park and surrounding land.
2. **Various gathering and seating options are crucial for different user groups and their activities.** Flexible space can promote different activities, such as farmers' markets, community events, and performances. Based on expert interviews and user surveys, one community demand was various options for the gathering spaces for different group sizes. Seating options for individuals were also considered due to users' current activities.

Moreover, users wanted diverse activities within the park site, such as small performances, community events, picnics, and other activities. Flexibility should be considered to adapt to different demands within the park.

3. **Shade is important to provide a comfortable space for users.** Various options can be considered, such as trees and shade structures. The primary concern about Downtown Arlington's overall green open spaces is that the design site needs more shade. Extreme Texas summer weather and temperatures should be considered throughout the design process. Various shade options were proposed throughout the design proposal in various combinations. Shade structures, shade structures with water features, and tree shades were adopted as shade options.
4. **Continuous streetscapes and sidewalks could connect green open spaces and surrounding areas cohesively with the same or similar vibe. It is also essential to enhance walkability and pedestrian activities.** The existing state of the adjacent streets needs more pedestrian-friendly paths. It has been observed that individuals find it challenging to walk along these streets. Enhancements to the street layout could include planting more street trees and expanding the sidewalks. Also, the street planter along the street could treat the stormwater runoff from impervious surfaces. Combining tree planting and low-growing plants can provide a safety buffer for vehicles and enhance walkability. A continuous streetscape could also increase connectivity outside the parking area, especially the south and north connections.
5. **Community involvement is crucial in promoting community identity, community attachment, and place experience.** Community involvement, such as art installation, can be considered throughout the design process. According to the literature review and

interview results, community participation is crucial to enhancing the sense of belonging and community attachment. Community identity is strongly related to the physical and emotional connection with individuals. Also, one of the critical elements of community identity was social interaction. Reflecting on a place's history and community culture can also help to promote community identity. History does not always remain in the past. Community participation can be part of the process of making history.

According to expert interviews, Downtown Arlington has changed for decades and is predicted to continue changing positively. In particular, the current development of a mixed-use residential and commercial area downtown has occurred in the last 15 years and is expected to continue. As zoning regulations continue to change, the way green open spaces are provided will need to change with the times, according to future city planning and development plans. The emergence of vacant land can stem from various causes and may occur in different forms and patterns in the future. The city of Arlington mentioned that vacant land in downtown Arlington should be utilized for redevelopment and green open spaces through the Downtown Master Plan and that the image of a "walkable downtown" in Downtown Arlington should be firmly established by using surface parking spaces and especially the commercial areas on Division Street to move away from the image of "car-centric" (City of Arlington, 2018). Therefore, the development trend after this point may move towards developing not only designed vacant land but also parking lots owned by the city or other types of concrete surfaces.

6.4.Relevance to Landscape Architecture

As part of the placemaking strategy, urban vacant land repurposing is a great method to expand green open spaces and opportunities to provide places for the public. The design, as per research outcomes, could transfer vacant land to community amenities.

Urban vacant land often presents a variety of repurposing opportunities. Vertical development is often the preferred strategy to maximize property value in urban cores with dense development. However, transforming such spaces into green open spaces could create valuable public areas.

Vacant lands, often viewed as problematic within developed regions, can be strategically repurposed, reducing the number of unused urban spaces and providing amenities for the community. Therefore, an in-depth understanding of the conditions and impacts of vacant lands is essential for effective urban planning and development.

As a green open space, vacant land could provide valuable community gathering spaces and enhanced vegetation. Thus, landscape architects should consider urban vacant lands a great asset for future green open space.

6.5.Limitation

This research encountered several limitations and challenges, including data availability and quality, implementation feasibility and cost, and community acceptance and participation. One of the limitations of current research is that it may not capture the diversity of results according to the diversity of users. Preference and results might vary depending on the propensity, race, gender, and cultural differences of the subjects responding to the survey and the interviewees.

Future work could address these issues by conducting more surveys and interviews, exploring alternative design solutions, and engaging more stakeholders and partners. This research did not include a structured evaluation of the design proposal. A structured evaluation could be conducted for future design research.

The scope of the study was limited to Downtown Arlington, Texas, and may not be generalizable to other urban contexts with different characteristics and challenges. Arlington itself is an automobile-oriented city, and public transportation and bicycle-only roads are not well developed, so walking accessibility can be different from other large cities. Moreover, the condition and context of other parts of Downtown Arlington may differ from the design site. The design concept and suggestions may not fit another type of green open space due to different characteristics.

This study focused on using various places; however, the usage pattern may vary significantly depending on the presence or absence of parking lots. It could also be challenging to apply in other areas because Arlington's unique hot and dry summer climate or the limitations of spontaneous vegetation in Texas were to be considered. Finally, since all landscape sites have their own characteristics, the analysis and design of each target site are essential.

Therefore, this study cannot be generalized, and the typologies and concepts proposed in this study are not static and should be further developed and evolved through future research and practice. However, this design process provides a framework for repurposing vacant land into green open spaces within Downtown Arlington. Nonetheless, the established structure for repurposing vacant land into green open spaces could be implemented in other urban environments with comparable conditions.

6.6.Future Research Opportunities

This research focused on how repurposing vacant land can promote community identity through a green open space design process.

In the future research opportunities may include:

1. Evaluating the economic and social outcomes of repurposing vacant land into green open space in North Texas region
2. Comparing the design approaches and best practices of repurposing vacant land into green open spaces in different contexts
3. Studying on specific user groups such as younger or older populations or low-income communities to study providing different benefits
4. Exploring the impact of repurposing vacant land into green open space on urban resilience and climate adaptation.

6.7.Summary

The existence of vacant lands in developed urban areas has both positive and negative implications. From the perspective of urban planning and design, it can also present opportunities to enhance the quality of the city, while vacant lands can pose challenges. Specifically, vacant land can serve as a shared space that bridges physically disconnected adjacent areas within communities.

As the connectivity between places strengthens, the availability and diversity of amenities increase, both physically and psychologically, solidifying the city's identity. Enhanced connectivity can improve the pedestrian environment and accessibility and can mitigate physical and psychological barriers through the creation of complex and diverse shapes of space that take into account existing infrastructure and surrounding land use.

The increase in the quality and quantity of green open space through the repurposing of Downtown Arlington's vacant land can expand the range and value of amenities. The proposed green open space design and program development can support the enhancement of community identity. The suggested design has the potential to serve as a symbolic space for the future of Downtown Arlington. The activation of unused vacant lands will lead to expanded public access and the revitalization of desolate spaces by attracting community engagement.

Appendix A Comprehensive Design Consideration Matrix

Design Consideration	Literature Review	Downtown Arlington Master Plan	Precedent Study	Expert Interviews	User Surveys	Design solutions
Uses & Activities						
Local economic impact	Green spaces support local businesses and drive economic development by serving as venues for farmers' markets, outdoor events, and diverse community activities. These initiatives boost local businesses and contribute significantly to the overall economic vitality of the community (Giorgio et al., 2022).	Fostering a robust, resilient economy by attracting people to live, work, socialize, and recreation in Downtown	Public and private investments in POPCourts! support small businesses, public realm improvements, historic building restoration, and promoting equity and resilience.	Green open spaces are important for supporting businesses	Respondents mentioned their favorite downtown spots, including specific restaurants and coffee shops. Some responses also focused on the surrounding commercial strip, with a common association of Downtown being linked to restaurants.	Making connections to adjacent local businesses - encouraging programs such as farmers' markets, outdoor events, community activities, and others. - providing shared space for small businesses
	Fostering an inclusive local economy contributes to economic development, resulting in heightened tax revenue, the creation of desirable jobs, and increased real estate values. It cultivates an environment of enhanced local ownership and value, ultimately alleviating the demand for municipal services (PPS, 2022).	Encouraging small, local, and regional businesses is crucial when seeking land, redevelopment, or adaptive reuse opportunities.	POPCourts! is a catalyst for the POP! Program, vital in Chicago's Recovery Plan. It fosters equitable economic recovery, supporting community organizations to revitalize underutilized land along neighborhood retail corridors and promoting thriving and safe communities.	The city faces a challenge in relocating businesses from specific areas to improve their aesthetic appeal. The focus is on transforming surface lots into prime examples for future redevelopment, with a vision to revitalize these areas over time gradually.		Redeveloping surface lot to revitalize Downtown Arlington
Mixed-use development		The key to achieving denser development is through mixed-use development.	Mixed-use zoning in Downtown Plano creates a diverse and pedestrian-friendly environment with features like building setbacks, traffic calming, and residential density requirements.	Consideration should be given to land use patterns around the green open space, including the types of businesses, libraries, public buildings, housing, universities, etc.		Considering various user groups - business owners, business employees, municipal facility visitors, residents, students
				Reducing minimum parking requirements can create a more people-friendly downtown environment.		Repurposing underutilized parking lot Pedestrian-centric design

				Emphasis is placed on the need for additional housing downtown, hoping that any housing development will integrate green spaces.		Considering mixed-use development and its users - one-person household, single-family, multi-family, pet
		The plan focuses on creating a diverse, relatively dense mix of uses in Downtown through zoning districts like the Downtown Business Zoning District (DB) and the Downtown Neighborhood Overlay (DNO).		Downtown Arlington's zoning is changing significantly, integrating more residential spaces and attracting a continuous influx of residents. The dynamic regulations, influenced by market dynamics, undergo frequent changes. Developers actively collaborate with the city council to secure zoning approvals, shaping the evolving urban landscape.		Events and programs in collaboration with nearby businesses
Tourists and visitors	Green open spaces can yield economic benefits by drawing tourists and visitors, resulting in heightened expenditures within the local economy (Jennings & Bamkole, 2019).			Green open spaces are economic drivers that bring people from outside the area. At the same time, green open space should be considered in surrounding communities.		Various programs and space for visitors - Iconic green open space design - bringing public art to make it a great destination
	Increased tourism and recreational activities, facilitated by green spaces, lead to economic growth in the surrounding areas. Green spaces attract visitors and tourists who contribute to the local economy by spending on accommodations, food, and other services (Giorgio et al., 2022).			Tourism plays a pivotal role in Arlington's economy, and the city places considerable emphasis on designing attractive and well-planned spaces to enhance the tourist experience. The city recognizes the significance of tourism in contributing to its economic vitality.		Events for tourists and visitors
Range of activities	Thoughtfully selecting diverse activities contributes to a place's ability to attract various individuals at different times throughout the day. For instance, a playground may attract young children during daylight hours, while basketball courts appeal to older kids after school, and evening concerts draw a diverse audience (PPS, 2022).			Downtown Arlington is known for its diverse and dynamic atmosphere, offering activities day and night, weekdays, and weekends. A mix of nearby uses fosters continuous engagement, contributing to a lively environment.	Some respondents expressed the need for more activities when responding to their satisfaction with green open spaces within downtown.	All day programs - Day programs - Evening programs

	The variety of simultaneous activities influences the vibrancy of space—whether it is people walking, eating, playing baseball, engaging in chess, relaxing, or reading (PPS, 2022).	The plan strengthens Downtown as an entertainment destination, promoting arts, culture, and music.	Ricardo Lara Park promotes physical activities and various community programs such as exercise, community gardening, walking, and biking. Downtown Plano promotes diverse artistic expressions including dance, music, drama, and culinary arts.	Consider activities for people working with surrounding businesses, including lunch spots, benches, and stress-relief spaces. Urban areas should provide diverse activities such as walking dogs, relaxation, nature experiences, sitting areas, outdoor dining, meetings, family spaces, and entertainment, with concerts and annual festivals, notably art festivals, contributing to the area's unique and vibrant character.	Feedback emphasized the need for dedicated spaces for dog walking. Many respondents stressed the importance of considering surrounding facilities, expressing a desire for additional event spaces, pavilions, and a skate park.	Programmed space - dog park - event space - skate park - considering surrounding facilities' programs and events
	Organizing and promoting various activities within green spaces contributes to engaging the community and fostering a sense of belonging (Jenning & Bamkole, 2019).		The municipal authorities aimed to create a “food court” in this green space, allowing people to use it freely without imposing a predefined program in POPCourts! POPCourts!’s design focused on how people would come together and interact within this space.			Unprogrammed, flexible space
	Engaging activities provide individuals with a motive to visit and revisit a location. Without compelling activities, space remains vacant (PPS, 2022).	The plan supports civic and community-oriented uses, including a distinct public art program.		The interviewee in Downtown Arlington observed fitness, walking, walking the dogs, entertainment, relaxation, outdoor meetings, and doing homework.		Spaces for both individuals and groups
Different age groups/users	Considering different age groups makes the place diverse (PPS, 2022)		POPCourts! project caters to different age groups by providing various activities.	Demographics, the people using the space, should be considered for green open space, for example, students, residents, seniors, people with disabilities, children, and all other types of people.		ADA-accessible, low-rise facility
Transformation	Rather than being perceived as abandoned and neglected, leftover spaces have the potential to be utilized effectively and contribute positively to the city's image. In research, enhancing vegetation, creating seating areas, altering surface materials or colors, and improving maintenance and cleanliness were among the design aspects favored by participants (Azhar et al., 2022).	The plan addresses challenges such as low building heights, surface parking dominance, and lack of ground floor activation.	Continuous exploration of new possibilities for vacant lands on the outskirts of Downtown Plano demonstrates adaptability to changing needs.	Repurposing parking lots for green spaces promises to reduce impervious surfaces and enhance pedestrian activities. Some interviewees are open to sacrificing parking spaces for community needs. Downtown has excess surface parking, presenting an opportunity to transform it into pervious surfaces, enhancing sustainability and land utilization.		Utilizing surface parking lot for increasing permeable surface, planting area

		Utilizing vacant parcels and scattered developable land for new development and public amenities are emphasized in this plan.	POPCourts! transformed a vacant lot into a vibrant activity, gathering, and commerce space. Ricardo Lara Park converted 5 acres of freeway-adjacent lots into green open space, mitigating freeway impact and providing community access.	Downtown Arlington has limited vacant land, primarily occupied by surface parking. A desire is to repurpose surface parking into green spaces, requiring vertical parking structures and additional garages. This transformation is expected to increase green areas over time gradually.		Repurposing infrastructure R.O.W
Education and interpretation	Incorporating functional playgrounds that cater to the needs of diverse age groups is essential for promoting play and social interaction (Jennings & Bankole, 2019).			Kids and families should be considered.		Educational space - native planting area - nature playground - Historical signage/pavement
Flexibility and functional spaces	Temporary design installations are low-coat and low-maintenance strategy (Zhang & Park, 2023)		POPCourts! features three open space zones known as "Courts," offering versatility for diverse activities. These spaces include a basketball court, a gravel drive, and a shaded lawn, accommodating events like sports, farmers' markets, community gatherings, and more. Ricardo Lara Park provides various outdoor gathering spaces, including a dog park, fitness park, play park, community park, and eco-park.	Equipments for physical therapy are needed. Outdoor musical instruments can be included for people with different challenges	Some respondents mentioned a shortage of green open space within downtown, and the existing green open space needs to fulfill its functional role adequately.	Functional space - Sports facilities - eco park - event space for flec regional market - flexible lawn (yoga, fitness, etc.)
Maintenance and management	A sense of community can reduce the necessity for municipal control, fostering self-management (PPS, 2022).			Green open space must be maintained clean and safe.		Regular management plan
Sociability						
Volunteerism	Sense of community instills a sense of pride and encourages volunteerism, contributing to the perpetuation of integrity and values (PPS, 2022).		Community members actively participated in painting the pavement and creating murals during POPCourts! project process.			Increasing the chance of community engagement
Diversity of user group	The mix of ages and ethnic groups generally reflect their community diversity (PPS, 2022).			Downtown Arlington holds a distinctive position within the city, characterized by a diverse residential base, including a significant student population, contributing to a unique mix of incomes. While the student demographic tends to lower incomes, their purchasing power remains noteworthy.	Some respondents highlighted the importance of reflecting the diversity of Downtown Arlington in elements such as design, programming, signage, and more.	Considering diverse user groups

Welcoming and social interaction	Promoting social interaction enhances sociability, increases cultural exposure, encourages interpersonal interaction, and stimulates community creativity (PPS, 2022).	Creating a diverse community welcomes all residents, employees, students, and visitors.		The first impression of a city is crucial, and the presence of green open spaces can offer an economic advantage based solely on their ability to provide beautification and shape the city's image.		Streetscape for welcoming and cohesiveness Space for welcoming people
	Social interactions in urban green spaces offer opportunities to connect with others, cultivate a sense of community, and rejuvenate from the demands of daily life (Jennings & Bamkole, 2019). Fostering social interaction has the potential to attract a diverse population, resulting in increased participation of women, the elderly, and children in the space, thereby cultivating greater ethnic and cultural pluralism (PPS, 2022).		Ricardo Lara Park prioritizes safety and comfort for pedestrians while encouraging public interaction and activities. The POPCourts! project contributes to building social networks through active community engagement.	Any green space will be community-friendly just by being public open green space. Any expansion of the areas is going to attract more people and provide more area for them to gather and hang out. That would only enhance that aspect of the green space downtown.		Considering social interaction - with neighborhood - with co-workers - with family - with friends
Community engagement and identity	The community engagement process can involve public participants and community organizations by utilizing neighborhood events or volunteer activities (Zhang & Park, 2023).	During the process for the plan, it incorporates community engagement and surveys to gather input on desires and aspirations for Downtown.	Collaboration with city officials, residents, community development organizations, and consultants is integral to the community engagement process for Downtown Plano redevelopment. Ricardo Lara Park's construction involved community engagement and public-private partnerships, resulting in a well-themed park programmed for health, education, play, and connectivity.			Design collaboration through partnerships with various organizations (public and private sector, non-profit organization)
		The plan's goal is aligned with community aspirations, focusing on creating a lively, bustling, and active city center.	The design of Ricardo Lara Park incorporated input from design participants, enhancing community identity and addressing diverse community needs. Similarly, POPCourts! actively engaged community members in painting and mural creation during construction.	Considering community input is crucial to defining specific elements for every space design. The public input process and understanding the goals and intent are essential for creating a successful space.		Design through community input gathering - survey

Cooperation and stewardship		Collaboration with UTA and other organizations is the key to enhancing community connections.	In POPCourts! project process, local artists and contractors had the opportunity to showcase their talents through their involvement in the project, underscoring the community's capacity to self-organize.			Collaboration with local institutions, local artists, and local vendors
Sense of place and community attachment	Making great places nurtures and defines sense of community (PPS, 2022).		The POPCourts! project stands as a source of community pride, symbolizing resilience and change, and inspiring further investments along the corridor. In Austin neighborhood, the project's main goal was to establish a sense of place and identity for a community with limited access to public open spaces.		Associations with the image of downtown included entities like UTA, entertainment, tourism, railway, and art.	Reflecting themes of surrounding areas of the design site - color of the UTA, entertainment district - railway inspired design - local arts (Arlington stars, DREAM sculpture, Boundless sculpture, etc.)
					Descriptive elements associated with the image of downtown included perceptions of a city filled with concrete, a small city, and a bleak city. One respondent recalled a library and historical buildings when thinking about downtown.	Reducing concrete pavement - using alternative materials Reflecting historic elements through design theme
Placemaking	Wyckoff (2014) explains placemaking as the process of creating quality places that attract people to live, work, play and learn. In this context, the critical aspect to consider is that placemaking is conceived as a singular process aimed at the generation of a "quality place," but fundamentally, it should culminate in the establishment of a robust sense of place.			Placemaking can increase tourism activity and boost that aspect of economic development. It will also act as an economic driver. Through a placemaking approach, a place becomes an urban icon.	The responses from individuals who indicated that they don't have a favorite space downtown were intriguing.	Making quality place

				The selection of plants, artistic installations, and the arrangement guiding people through a space can function as a form of storytelling and placemaking. Shaping the environment allows us to convey ideas about people's thoughts and feelings, attributing human qualities to space. Establishing a connection that resonates with memories or emotions is a powerful aspect of this process.		Reflecting story of Arlington through the design process for sense of community
Comfort & Image						
Pedestrian safety	Highlighting the pedestrian route in complex transportation crossing areas can help promoting pedestrian safety and strengthening community identity by increasing drivers' caution (Zhang & Park, 2023)			Ensuring safety in Downtown areas, particularly against potential vehicular threats, involves installing substantial pipe bollards as a defensive measure. Additional measures include incorporating trees, creating berms along edges for a visual and robust barrier between vehicular traffic and the park, and using large stones as extra protective barriers.		Making car barrier - bollards - planting trees along the sidewalk - planting buffer areas
	Street painting serves to accentuate pedestrian routes in intricate transportation crossing areas, heightening drivers' caution. Additionally, it promotes pedestrian safety and reinforces community identity (Zhang & Park, 2023).		POPCourts! tried to emphasize the location, pedestrian access and vehicular access by painting the street. This enables both vehicles and pedestrians to better perceive the distance.			Emphasizing major node for both vehicles and pedestrian access and safety

Strong community destinations	Strong community destinations help to build an identity and image of the community that attracts people. Destination might be a downtown square, a main street, a waterfront, a park, or a museum (PPS, 2022)	The plan focuses on establishing Downtown as a local and regional destination with a distinct identity. Transforming Downtown into a vibrant, connected, and welcoming hub aligned with community aspirations is the key to making strong community destinations. Implementation of branding, identity, and wayfinding strengthen Downtown's identity.	Ricardo Lara Park stands out as a significant community destination, emphasizing both aesthetic appeal and functionality. The POPCourts! project transformed the site into a tangible "city corridor" through art and community engagement, displaying how strategic design and the addition of value can be tactical.	Levitt Pavilion, Gene Allen Park, and the Clock Tower are fantastic open spaces, but there is a need for more green areas. Creating a destination that caters to every individual's needs can be challenging. However, it is crucial to carve out publicly accessible elements in the process.	When respondents were asked about their favorite places downtown, many answered about places outside of downtown.	Making activities, places and destinations what make a great city as Power of 10+ Strategy
Maintaining aesthetic appeal	Focusing on the upkeep and visual appeal of green spaces is crucial to enhance their attractiveness and foster positive perceptions among residents (Jenning & Bamkole, 2019).	Prioritizing pedestrian-friendliness, consistent streetscaping, and landscape enhance the visual appeal	POPCourts!'s design was meticulously considered, focusing not only on aesthetics but also on how people would come together and interact within this space.			Frequent maintenance plan Pedestrian-friendly design Consistent streetscaping landscape enhancement interactive spaces
Shaded area	Establishing shaded areas within green spaces is important to provide comfortable and relaxing environments for individuals to enjoy (Jenning & Bamkole, 2019).		Ricardo Lara Park provides shade coverage with more than 300 new trees, featuring climate-adapted vegetation planting that effectively mitigates urban temperatures.		Many dissatisfied respondents downtown expressed a notable issue with the green open spaces, citing a lack of shade as a major concern. Numerous suggestions for improvement highlighted the need to address this specific issue in the site's design.	Providing shaded area with trees or structures

Culture and art			<p>Integration of art, including murals, to enhance the visual appeal and cultural significance of the POPCourts! project.</p>	<p>Arlington's identity is deeply tied to local culture and art, emphasizing the preservation of unique city elements. The downtown Levitt Pavilion is a cultural hub, hosting diverse events and international festivals. Cultural narratives are woven into urban design, exemplified by the historic Mineral Well Plaza Fountain. Despite its size, this space honors Arlington's past, showcasing the city's commitment to integrating cultural elements into downtown areas. The downtown district concentrates on arts organizations, creating a distinct cultural environment that sets it apart in Arlington.</p>		<p>Murals Sculptures and installations Space for cultural performances Historic elements Art walk Community art</p>
History			<p>Ricardo Lara Park contributes to an overarching strategy aimed at improving the quality of life, accessibility, visibility, and empowerment in a historically underserved neighborhood. The POPCourts! project, located in a vibrant African American cultural community, incorporates historical considerations in its design, reflecting the area's unique circumstances. The Historic Downtown Plano Association plays a crucial role in actively participating in the design and planning process, ensuring the preservation of the community's culture and history. Iconic red bricks from the 1890s are preserved to maintain the distinctive historical feel of downtown, and new houses and shops are thoughtfully designed to complement the area's historical aesthetics.</p>	<p>Creating a sense of place and understanding roots are crucial. Storytelling, beyond traditional facts and signs, occurs through design, offering diverse avenues for implementation. It's vital for bringing people together, bridging differences, and fostering understanding. In connecting to a place, storytelling involves exploring history and considering perspectives from both current and past times.</p>		<p>Reflecting historic elements during design process - Pavement with historic timeline - Sculpture - Historic signage - Material from the history</p>

Green open space		This plan emphasizes developing green spaces on city-owned property for multiple purposes.	POPCourts! project transformed a vacant and underutilized lot into a green space.	Green spaces in downtown are extremely vital. The role of green open spaces is important in terms of the following aspects: (1) social aspect, (2) enhancing quality of space, (3) Engineering aspect, (4) economic aspects, and (5) beautification.	Certain respondents expressed satisfaction with the green open spaces in downtown by highlighting specific features such as the Levitt Pavilion, the park adjacent to it with the Dream sculpture, the small park near the Arlington Museum of Art, and a sizable green space on Front Street.	Designing the green spaces to serve multiple purposes
		The plan recognizes the need for additional green open spaces to cater to a growing number of residents and visitors.	Ricardo Lara Park Increases the amount of green open space per capita from 0.57 acres to serve over 26,000 residents.	Arlington has excelled in park planning and distribution, acknowledging the growing importance of open spaces, parks, and trails in enhancing the city's quality of life. Over the past two decades, there has been a renewed emphasis on incorporating these spaces as essential amenities in new developments. Public open spaces are now considered crucial for both residential and office areas, with architects, planners, landscape architects, engineers, and developers recognizing their integral role in urban development.	Some respondents favored places downtown, including Founder's Plaza, Levitt Pavilion, parks, and the plaza in front of the theater. The plaza in front of the theater was described as a versatile open space that changes based on its purpose and is not a programmed venue.	Increasing green space per capita Involving the community in the planning and design of green open space
				Green spaces with trees and greenery as a part of society can enhance the quality of space. Downtown Arlington faces a key problem of limited green spaces, marked by insufficient quantity and the need for improved pedestrian accessibility. Despite these challenges, the Levitt Pavilion has stood out with its appealing design and successful concerts. Additionally, the Rotary Dream Park's design holds promise and is anticipated to become a distinctive and prominent feature in the area.		Identifying potential areas for creating new green open spaces Adding more trees and plants

Sustainability	The sustainable landscape design aims to achieve the virtuous cycle of the landscape and shall coordinate the development of the site and people (Shan et al., 2021).			Sustainable design involves more than green infrastructure; it includes using local materials, planting trees and native plants, reusing materials, and aiming for net-zero carbon emissions. Designers must find creative ways to integrate these ideas and contribute to environmental care.		Using of local materials planting trees and native plants reusing of materials net-zero carbon emissions green infrastructure
	The landscape pattern should be rationally arranged in accordance with the characteristics of the surrounding environment to maximize the function, considering the sustainable principle of smart green space. The landscape design of parks and plazas must meet the demands of the public while fully embodying aesthetic and urban characteristics (Shan et al., 2021).			Sustainable development and open green spaces are intertwined, contributing to the enduring success of places. The incorporation of green spaces is crucial for the longevity and overall success of a project.		Arranging the landscape pattern in accordance with the characteristics of the surrounding environment to maximize function Considering longevity and success - regular maintenance - flexibility for future changes - designing for resilience against climate change

	Using sustainable material is important. Landscape materials include soft landscape and hard landscape. For example, using native plants can be sustainable plant landscape design. Local materials, ecological permeable bricks, ecological concrete, and water filtration systems can be part of the ecological materials (Shan et al., 2021).			In contemporary urban planning, sustainability is a paramount consideration, with a particular emphasis on open spaces. These areas play a crucial role in facilitating access, managing stormwater to prevent flooding, and are essential components in sustainable projects. The city is adopting a comprehensive landscaping strategy that prioritizes native plantings for both ecological and economic reasons. Given constraints on widespread irrigation, the emphasis is on resilient native plants that can flourish autonomously in the local climate, especially in public areas. This dedication to sustainable landscaping guarantees resilience in diverse conditions, minimizing the need for excessive watering and aligning with principles of water conservation and environmental responsibility		Using native plants Local materials Ecological permeable bricks and concrete Water filtration systems recycled materials
Cleanliness	Clean space and free of litter make impression of the space (PPS, 2022).					Waste bins regular cleaning maintenance staff signage Designing the landscape to minimize maintenance and mess
Seating area	Providing enough seating options because people are drawn to places that give them a choice of places to sit. Choice of places to sit, either in or out of the sun at various times of day or year, convenient location, and sufficient seats should be considered (PPS, 2022).			Among the experts, there were opinions regarding the demand for spaces where people can sit for various purposes. This could include dining, gatherings, relaxation, and more.	There were responses indicating a shortage of seating or resting spaces within downtown. Among the design suggestions, there were responses expressing the need for an increase in seating areas within the site.	Variety of seating with shade and sun considering view from the seating group and individual seating accessible seating options for individuals with disabilities seating locations easy-to-clean seating material

Safety and security	Feeling safety and security are make place comfortable (PPS, 2022)			Improving safety in the downtown area focuses on a strong police presence and regular patrols to ensure constant vigilance. There's no specific emphasis on physical infrastructure changes, with the priority being an open and visible environment. Adequate lighting and regular patrols are key measures to control and monitor surroundings, contributing to a safer atmosphere.	There were opinions expressing dissatisfaction due to concerns about the safety of the green open spaces within downtown.	Providing open space, less enclosed space Lighting
Noise pollution control	Green space in urban areas can affect to reduce unwanted noise such as traffic, and water feature can be treated as a part of the green space feature (Kruize et al., 2019)		Ricardo Lara Park features a 10-foot-tall sound wall along the park's edge, strategically constructed to mitigate noise and air pollutants originating from the nearby freeway.	To address noise pollution, planting a dense tree cover is an effective method, leveraging trees as natural sound barriers. Another approach is constructing walls to act as physical barriers between the park and sources of negative land use, contributing to noise mitigation.		Sound wall with plants Dense tree cover Earth berms Water features locating noisy activities or facilities
Sense of comfort	Promoting a sense of comfort in a space yields critical benefits, including visual appeal, overall stimulation, a sense of belonging, increased security, improved environmental quality, and a feeling of freedom (PPS, 2022).					Considering aesthetic, safety, and accessibility
Green street and stormwater infrastructure	Incorporating vegetated facilities on sidewalks and expanding tree canopy, natural systems can reduce stormwater runoff, improving water quality and watershed health (Zhang & Park, 2023). The green stormwater infrastructure approach promotes public stewardship through resident participation in vegetation clean-up and occasional weeding (Zhang & Park, 2023).		Ricardo Lara Park has a rainwater capture and retention system that addresses runoff and previous flooding issues.	Stormwater runoff is one of the biggest risks in Downtown due to the massive number of impervious surfaces. Green infrastructure should be considered through green open spaces in excellent quality of aesthetic and function.		Development of facilities for rainwater collection or the creation of a green street
Air pollution control and environmental impact	Well-designed urban green space can help to reduce in air pollution in urban areas while simultaneously delivering diverse additional benefits (Kruize et al., 2019).			Trees are a singular way to mitigate pollution in the air. Trees give out oxygen and absorb carbon dioxide. They cleanse the air daily.	Some respondents expressed the need for green open spaces with resilience to weather conditions.	Planting more trees Incorporating green infrastructure Creating green corridors

Promoting health	Promoting health in spaces is vital, with increased physical activity and enhanced environmental health being key factors. Equally crucial are initiatives to improve access to fresh food, enhance security, and foster greater social inclusion (PPS, 2022).		POPCourts! promotes health by providing spaces for physical activities such as fitness equipment or walking trails.	Green space provides a place for health and wellness. Providing green infrastructure is known to, there's lots of research to back up the ideas of mental health being improved when people have access to nature and utilize it.	Among the suggestions for design improvements, there were requests for sports equipment in the downtown area.	Outdoor gym equipment walking trail multi-sport arenas community gardens playgrounds
Access & Linkages						
Proximity				Arlington has implemented a strategic plan to promote broad access to parks across the city, prioritizing geographic coverage to ease pedestrian access and reduce dependence on cars. This deliberate distribution of parks is a unique aspect of Arlington's comprehensive long-term planning. To ensure the vibrancy and utilization of open green spaces, there is a deliberate effort to co-locate them with various activity hubs, such as residential areas, workplaces, restaurants, and retail establishments.	Some respondents mentioned places outside the downtown boundary, such as AT&T Stadium, Baseball Park, Entertainment District, River Legacy Parks, and Texas Live.	Revitalization of existing spaces Creating new green space Co-location with activity hubs with - residential areas - workplaces - restaurants - retail establishments
Connectivity and continuity	A good connection between this place and adjacent building is important. Programmed and connected space make place interesting and safer (PPS, 2022).	Enhancing pedestrian and bicycle connectivity should be considered while re-establishing vehicular connections.	Ricardo Lara Park, intricately connected to a regional bike network and neighboring areas, offers an uninterrupted trail for walking and jogging. The park serves as a nexus for residents in the Lynwood neighborhood, enhancing local connectivity. This transformation of previously vacant land near the freeway into a community right-of-way exemplifies the park's role in providing accessible public green space. With multiple access points in Downtown Plano, including light rail, walking paths, and biking routes, the park contributes to a pedestrian-centric design.	Green space ^[OB] provides ^[OB] connections like accessible routes that are safe and provide a place for health and wellness.		Green corridors Pedestrian and bicycle connectivity and safety Link to regional bike network Integrating with public transportation (Via)

Visibility	The view from the distance is the key to help find the location and working as a landmark and visual link (PPS, 2022).		Ricardo Lara Park enhances the visibility of the Lynwood neighborhood and promotes walkability and pedestrian activity.		There were responses indicating difficulty in perceiving and a lack of visibility for the green open spaces in downtown.	Landmark features Lighting Signage View corridors
Wayfinding		Implementing branding, identity, and wayfinding initiatives strengthens the identity of Downtown.		Among the suggestions for the design, there was a response emphasizing the need for enhanced wayfinding.		Improving wayfinding - signage - landmark - paths and trails - lighting - universal design - digital tools - map
Walkability and pedestrian activity	Walkability is important to make access to space. Heavy traffic or bleak streetscapes can be barriers for pedestrians. Continuity of sidewalk can help make connection between place and adjacent areas and make more walkable (PPS, 2022).	Reducing impervious surfaces and enhancing public spaces can improve the pedestrian environment and walkability.	Downtown Plano is a successful pedestrian-centric project.	Revitalizing downtown necessitates a shift from a car-centric design to a more pedestrian-friendly approach. Proposals include introducing pedestrian promenades, enhancing Abram Street, and connecting it to nearby hiking and biking trails, offering substantial opportunities to improve the overall downtown experience. There is a clear preference for enhanced pedestrian connectivity to elevate accessibility and the overall appeal of the area.	Responses on downtown green spaces indicate concerns about walking difficulties and a lack of pedestrian connectivity. Negative feedback on the downtown image includes mentions of poor accessibility, limited walkability, and a perception of it being car centric. Despite this, some respondents note downtown as walkable and pedestrian-friendly, with manageable traffic control.	Widening sidewalks Creating seating areas along the streets Increasing and making visible crosswalk
Inclusive design	Enhancing accessibility renders a place more walkable and safer for pedestrians and bicyclists, concurrently diminishing the necessity for cars and parking while fostering increased connectivity between different land uses. Ultimately, improved accessibility represents a more efficient allocation of time and financial resources, aligning seamlessly with public transit initiatives (PPS, 2022).			During the design and planning process, designers need to make sure that the parks and amenities are ADA accessible. Parks need to be accessible like concrete walks which are firm, stable and slip resistant.		Accessible equipment, ADA requirements

	<p>Equitable access for people with disabilities is crucial in space design (PPS, 2022). Neighborhood open spaces are essential for social interactions, transcending economic, gender, and ethnic differences (Stanley et al., 2012). Inclusive green space design hinges on understanding diverse population needs and social contexts (Jennings & Bamkole, 2019). Open spaces in cities provide greater versatility compared to roofed spaces, which may encounter institutional restrictions and exclusions (Stanley et al., 2012).</p>		<p>Ricardo Lara Park improves access to safe and equitable outdoor spaces for a diverse neighborhood. POPCourts! project is part of a broader plan to enhance the quality of life, accessibility, visibility, and empowerment within a historically underserved neighborhood.</p>	<p>Inclusivity involves ensuring accessibility for a diverse range of users, including those with disabilities or restrictions. This priority is crucial in new developments, emphasizing open spaces for everyone. Measures like providing accessible playground equipment aim to offer equal experiences for disabled individuals. Acknowledging progress, ongoing initiatives are seen as steps in an evolving process toward greater inclusivity.</p>		<p>Universal design</p> <ul style="list-style-type: none"> - Accessible pathways - Inclusive playgrounds - Seating areas - Easy-to-read signage - Natural elements - Sports facilities - Lighting - Art installations - Sustainable practices
<p>Transit usage and public transportation</p>	<p>Enhancing access to green spaces can be achieved by implementing high-quality transportation options, making it easier for people to reach and use these areas (Jennings & Bamkole, 2019).</p>	<p>Collaborating with UTA and other organizations can enhance transportation options.</p>	<p>Downtown Plano's focus on public transportation promotes social interaction and walkability. The introduction of new light rail in 2002 has helped a significant shift towards increased use of public transportation in the city.</p>		<p>There were opinions expressing dissatisfaction with the lack of public transportation downtown when responding to the question about satisfaction with green open spaces.</p>	<p>Location for Via (on-demand public transportation service)</p>

Appendix B IRB Approval Letter



10/23/2023

IRB Approval of Minimal Risk (MR) Protocol

PI: Dasom Mun

Faculty Advisor: Joowon Im

Department: Landscape Architecture

IRB Protocol #:2024-0025

Study Title: *Promoting Community Identity through Repurposing Vacant Land: City Park Design in Downtown Arlington*

Effective Approval: 10/16/2023

Protocol Details

- Original Protocol Approval Date: 10/23/2023

The IRB has approved the above referenced submission in accordance with applicable regulations and/or UTA's IRB Standard Operating Procedures. The IRB team reviewed and approved this non-federally funded, non-FDA regulated protocol in accordance with the UTA IRB Internal Operating Procedures. The study is approved as Minimal Risk.

Principal Investigator and Faculty Advisor Responsibilities

All personnel conducting human subject research must comply with UTA's [IRB Standard Operating Procedures](#) and [RA-PO4, Statement of Principles and Policies Regarding Human Subjects in Research](#). Important items for PIs and Faculty Advisors are as follows:

- ****Notify [Regulatory Services](#) of proposed, new, or changing funding source****
- Fulfill research oversight responsibilities, [IV.F and IV.G](#).
- Obtain approval prior to initiating changes in research or personnel, [IX.B](#).
- Report Serious Adverse Events (SAEs) and Unanticipated Problems (UPs), [IX.C](#).
- Fulfill Continuing Review requirements, if applicable, [IX.A](#).
- Protect human subject data ([XV](#).) and maintain records ([XXI.C](#)).
- Maintain [HSP](#) (3 years), [GCP](#) (3 years), and [RCR](#) (4 years) training as applicable.

Appendix C User Survey



Hello,

My name is Dasom Phoebe Mun, and I am asking you to participate in a UT Arlington research study titled, **"Promoting Community Identity through Repurposing Vacant Land: City Park Design in Downtown Arlington."** This research study aims to examine the current state of urban green open spaces in Downtown Arlington and explore the potential of repurposing urban vacant land. These vacant lands are considered valuable city assets for urban redevelopment and can significantly contribute to the enhancement of community identity within Downtown Arlington. Additionally, the study investigates how the design of new green open spaces can positively impact the quality of life for both residents and visitors in Downtown Arlington. You can choose to participate in this research study **if you are at least 18 years old and have expertise in a field related to the research, planning, design, policy, and admin of Arlington's green open spaces and/or if you have any experience about Arlington's green open spaces.**

Reasons why you might want to participate in this study include that you have visited an urban green open space in Downtown Arlington and would like to provide feedback on your experience, the elements you enjoyed, and what might be done to improve Downtown Arlington's urban green open spaces through to suggest new design and plan by repurposing project site. You might not want to participate if you have not visited any type of green open space in and surrounding Downtown Arlington or if you do not wish to provide feedback about your experience. Your decision about whether to participate is entirely up to you. If you decide not to be in the study, there won't be any punishment or penalty; whatever your choice, there will be no impact on any benefits or services that you would normally receive. Even if you choose to begin the study, you can also change your mind and quit at any time without any consequences.

If you decide to participate in this research study, you will be asked to complete a survey. The questions are comprised of multiple-choice and short answer questions. It should take about 10 minutes of your time to complete the survey. Although you probably won't experience any

personal benefits from participating, your feedback provides insight toward a thesis study geared toward improving Downtown Arlington's green open spaces through urban vacancy revitalization. The study activities are not expected to pose any additional risks beyond those that you would normally experience in your regular everyday life.

You will not be paid for completing this study. There are no alternative options to this study project.

The research team is committed to protecting your rights and privacy as a research subject. We may publish or present the results, but your name (and other identifiable data you choose, such as your organization, contact information, etc.) will only be used with your consent. If you do consent use of your name and/or other identifiable information, we will only use it for citation purposes when incorporating your expertise into this study. While absolute confidentiality cannot be guaranteed, the research team will make every effort to protect the confidentiality of your records as described here and to the extent permitted by law. If you have questions about the study, you can contact me, Dasom Phoebe Mun, at dpm6396@mavs.uta.edu or my Academic Advisor, Joowon Im (joowon.im@uta.edu). For questions about your rights or to report complaints, contact the UTA Research Office at 817-272-3723 or regulatoryservices@uta.edu.

You are indicating your voluntary agreement to participate by clicking on the **"Start"** button below.

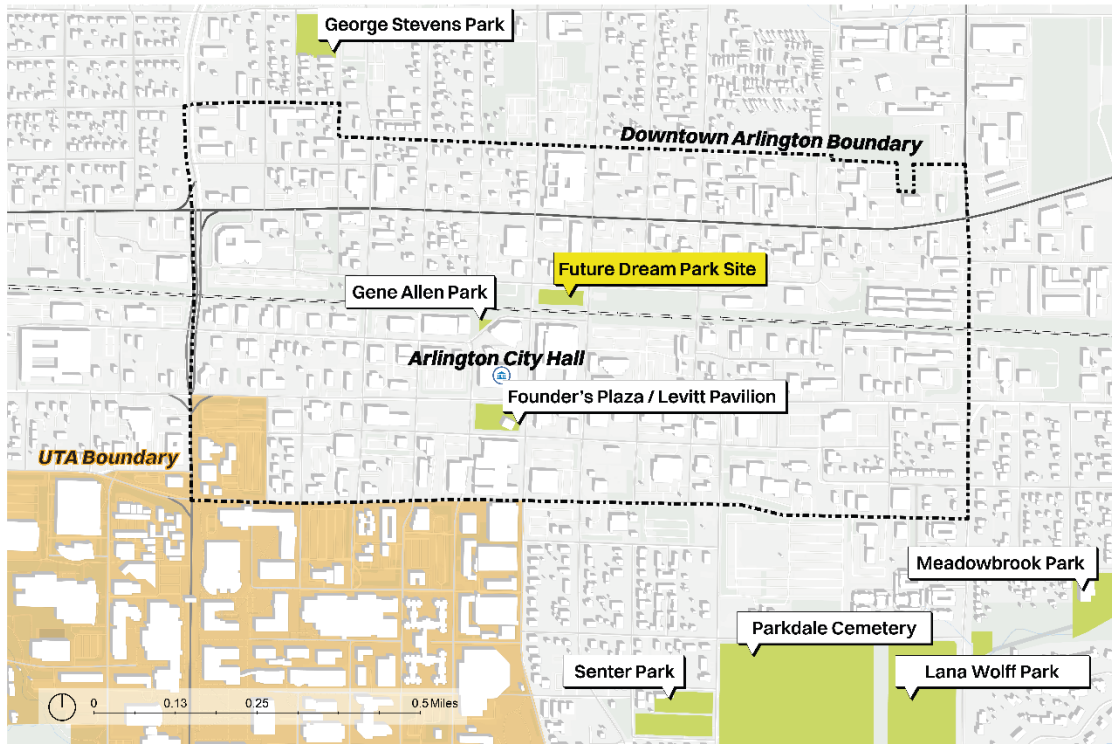
You are indicating your voluntary agreement to participate by completing and submitting this survey. By continuing, you are also indicating that you are over the age of 18 years.

- I wish to participate
- I do not wish to participate

By definition, **green space** means an area of grass, trees, or other vegetation set apart for recreational or aesthetic purposes in an otherwise urban environment (Oxford Dictionary). Green Space in this survey includes parks, playing fields, playgrounds, community gardens, pocket parks, cemeteries, Community plazas, etc.

Green open space is a space that is planned to meet the needs of community interaction and joint activities. It gives space that serves as a means of container of human life, both individually and in groups, as well as other living creatures that live and grow sustainably (Dewi et al., 2018). Green open space is an important part of the natural-social ecosystem, providing ecological services that maintain the healthy development of cities and society (Zhang, 2021).

The following image shows the green open spaces in and surrounding Downtown Arlington.



(Data: City of Arlington GIS database)

These questions focus on urban green open spaces in and surrounding Downtown Arlington.

* What type of green open space have you visited in and surrounding Downtown Arlington? (please select all that apply)

- Park
- Playground
- Public seating area
- Public plaza
- Community garden
- Cemetery

- Playing Fields
 - Pocket Park
 - Dog Park
 - Other (please describe)
-

*In the last 12 months, how often, on average, have you visited green open space in and surrounding Downtown Arlington?

- Once a week or more often
 - 1-2 times per month
 - 3-4 times per month
 - Once every 2 to 3 months
 - Once or twice per year
 - Less often
 - Never
-

*How far do you travel to visit green open space in and surrounding Downtown Arlington?

- Less than 0.5 mile
 - 0.5 - 1 mile
 - 1 - 2 miles
 - 2 - 5 miles
 - More than 5 miles
 - Don't know
-

* What types of transportation do you use to visit green open space in and surrounding Downtown Arlington? (please select all that apply)

- Walking
 - Biking
 - Public transportation (individual, i.e., rideshare)
 - Public transportation (multiple users, i.e., bus, train)
 - Private transportation (i.e., personal vehicle)
 - Other (please describe)
-

* With what size group do you travel? (please select all that apply)

- Individual
 - Group of 2-4 people
 - Group of 5-8 people
 - Group of greater than 8 people
-

* Who do you usually visit with? (please select all that apply)

- Family
 - Friends
 - Co-worker
 - Boyfriend/girlfriend
 - Dog
 - Alone
 - Other (please describe)
-

*What activities do you currently participate in when visiting green open spaces in and surrounding Downtown Arlington? (please select all that apply)

- Leisure/relaxing
 - Eating
 - Physical activity surrounding space (i.e., hiking, walking, cycling, etc.)
 - Physical activity within space (i.e., sports, yoga, etc.)
 - Artistic Endeavors
 - Community Event (i.e., festival, farmer's market, concert, etc.)
 - Spending time with friends and/or family
 - Spending time alone
 - Meeting with neighbors
 - Walking the dog
 - Other (please describe)
-

*What feature would you like to see included in green open space in and surrounding Downtown Arlington when you visit? (please select all that apply)

- Playground
- Interactive water features (i.e., waterfall, splash pad, water fountain, etc.)
- Open lawn
- Picnic tables/area
- Seating area
- Shade trees
- Workout equipment
- Hiking/Walking/Biking trail

- Outdoor grill
 - Restaurant/Food trucks
 - Outdoor theater/performance venue
 - Other (please describe)
-

*How long do you usually stay in green open spaces in and surrounding Downtown Arlington?

- Less than 30 minutes
 - 30 minutes to 1 hour
 - 1-2 hours
 - More than 2 hours
-

*When visiting green open spaces in and surrounding Downtown Arlington, what factors have a positive impact on your experience? (please select all that apply)

- Vegetation
 - Shade
 - Playground
 - Biodiversity
 - Accessibility
 - Sport areas
 - Event space
 - Picnic area
 - Sense of safety
 - Surrounded amenities (i.e., stores, restaurants, etc.)
-

- Programs available on location
 - furniture
 - Connection to the surrounding area
 - Vehicular access
 - Pedestrian access
 - Other (please describe)
 - N/A
-

*When visiting green open spaces in and surrounding Downtown Arlington, what factors have a negative impact on your experience? (please select all that apply)

- Overgrown vegetation
- Lack of shade
- Too much shade
- Litter/trash
- Feeling of Insecurity
- Too crowded
- Lack of people use
- No posted "rules"
- Other people's pet
- Lack of maintenance
- Vandalism
- Unsafe behaviors by other users
- Parking
- Aged equipment/furniture

- Space's program
 - Transportation
 - Poor vehicular access
 - Poor pedestrian access
 - Other (please describe)
 - N/A
-

* Do you think Downtown Arlington has enough green open spaces?

- Yes
 - No
 - I don't know
-

If yes, why do you think It is enough?

If no, Why do you think it is not enough?

* How satisfied are you with the overall experience of green open spaces in and surrounding Downtown Arlington?

- Not satisfied
 - Quite dissatisfied
 - Neither satisfied nor dissatisfied
-

- Quite satisfied
 - Very satisfied
 - Don't know
-

*How important do you consider it to have green open spaces in your local area?

- Not at all Important
- Not Important
- Neither nor
- Quite Important
- Very Important
- Don't know

When you think of downtown Arlington, what image comes to mind?

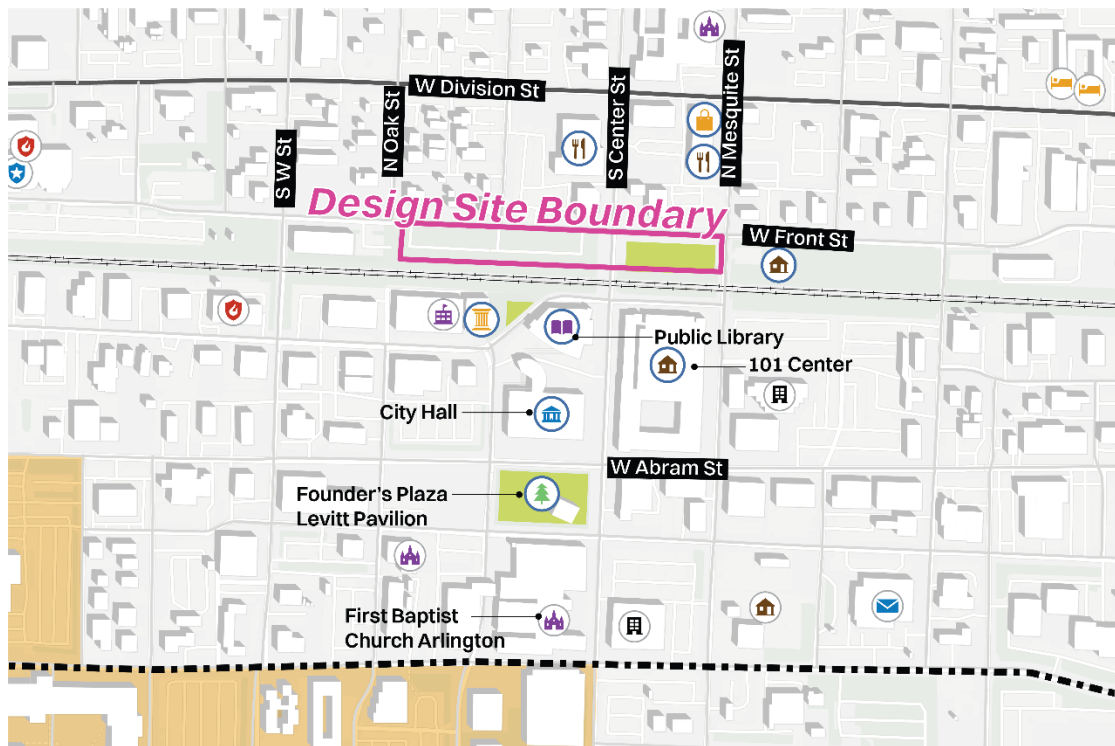
What is your favorite place in Downtown Arlington?

The following questions are about the thesis design site.

The design site is situated between N Oak Street and N Mesquite Street, and E Main Street and E Front Street. It is adjacent to the railroad tracks. The design site contains underused vegetated land, classified as vacant land in land use, and a surface parking lot.

The following images show the location and existing condition to provide visual context.

Map



Existing site photos

[Surface parking lot on W Front Street](#)



Vegetated vacant land on W Front Street



* Have you ever visited or heard of this design site indicated on the map above?

Yes

No

What activities do you currently participate in when visiting the project site? (please select all that apply)

- Leisure/relaxing
 - Sunbathing
 - Eating
 - Physical activity surrounding space (i.e., hiking, walking, cycling, etc.)
 - Physical activity within space (i.e., sports, yoga, etc.)
 - Artistic Endeavors
 - Community event (i.e., festival, farmer's market, concert, etc.)
 - Spending time with friends and/or family
 - Spending time alone
 - Meeting with neighbors
 - Walking the dog
 - Parking
 - Other (please describe)
 - N/A
-

When you visited this project site, what factors have a negative impact on your experience? (please select all that apply)

- Overgrown vegetation
- Lack of shade
- Litter/trash

No

What activities do you currently participate in when visiting the project site? (please select all that apply)

- Leisure/relaxing
 - Sunbathing
 - Eating
 - Physical activity surrounding space (i.e., hiking, walking, cycling, etc.)
 - Physical activity within space (i.e., sports, yoga, etc.)
 - Artistic Endeavors
 - Community event (i.e., festival, farmer's market, concert, etc.)
 - Spending time with friends and/or family
 - Spending time alone
 - Meeting with neighbors
 - Walking the dog
 - Parking
 - Other (please describe)
 - N/A
-

When you visited this project site, what factors have a negative impact on your experience? (please select all that apply)

- Overgrown vegetation
- Lack of shade
- Litter/trash

- Feeling of insecurity
 - Lack of people use
 - No posted "rules"
 - Pet
 - Lack of maintenance
 - Vandalism
 - Unsafe behaviors by other users
 - Parking
 - Aged equipment/furniture
 - Space's program
 - Transportation
 - Poor vehicular access
 - Poor pedestrian access
 - Other (please describe)
 - N/A
-

*Would you be willing to use it if a green open space is designed at this location?

- Very unlikely
 - Quite unlikely
 - Likely
 - Quite likely
 - Very likely
 - Don't know
-

*If a new green open space is designed, what kind of green open spaces would you prefer? (please select all that apply)

- City park
 - Playground
 - Public plaza
 - Community garden
 - Nature trails
 - Green street
 - Urban forest
 - Linear park
 - Pocket park
 - Dog Park
 - Other (please describe)
-

*What activities do you think are needed for the new project site design? (please select all that apply)

- Leisure/relaxing
- Eating
- Physical activity surrounding space (i.e., hiking, walking, cycling, etc.)
- Physical activity within space (i.e., sports, yoga, etc.)
- Artistic Endeavors
- Community Event (i.e., festival, farmer's market, concert, etc.)
- Spending time with friends and/or family
- Spending time alone

- Meeting with neighbors
 - Walking the dog
 - Other (please describe)
-

*What feature would you like to see included in the new project site design? (please select all that apply)

- Playground
 - Interactive water features (i.e., waterfall, splashpad, water fountain, etc.)
 - Open lawn
 - Picnic tables/area
 - Seating area
 - Shade trees
 - Workout equipment
 - Hiking/Walking/Biking trail
 - Outdoor grill
 - Restaurant/Food trucks
 - Outdoor theater/performance venue
 - Dog park
 - Other (please describe)
-

What improvements or additions would you suggest for the project site, if any?

* If green open space is designed at this location, how often do you think you will use it?

- Once a week or more often
 - 1-2 times per month
 - 3-4 times per month
 - Once every 2 to 3 months
 - Once or twice per year
 - Less often
 - Never
-

* Please select the category of your age range.

- 18-24
 - 25-34
 - 35-44
 - 45-54
 - 55-64
 - 65 or order
-

* Please select the category that best describes your current relationship with Downtown Arlington.

- Resident
 - Visitor
 - Commute employee
 - Commute Student
-

Business Owner

Other (Please specify)

*Please enter your 5-digit home ZIP code.

[The University of Texas at Arlington - Legal and Privacy Notice](#)

Appendix D IRB Approved Interview Questions

Project Title:

Principal Investigator: Dasom Phoebe Mun

Academic Advisor: Dr. Joowon Im

Date:

Expert Interview Questions

The following is a list of questions expected to be utilized during expert interviews. As detailed in the Primary Research Application, experts from different fields will be interviewed as part of this study; therefore, questions from this list will be selected based on each expert's field of knowledge. Because these questions are open-ended, additional follow-up questions that are within the scope of these questions may be asked as part of the interview process.

General Questions

Urban Green open spaces

1. Can you discuss the role of urban green open spaces (i.e., city parks, urban plazas, and walking trails) areas in enhancing the quality of life for urban residents and visitors?
2. Can you provide examples of iconic green open spaces that have significantly shaped a city's identity? What made these spaces iconic?
3. In your experience, how have green open spaces influenced local customs and values?
4. Can you provide insights into how green open spaces' aesthetics and visual appeal impact user perception and overall satisfaction?
5. What strategies do you use to ensure that newly created green open spaces contribute to the overall sustainability and resilience of the urban environment?
6. How do you balance the need for public access and recreation with sustainability goals in the design of urban green open spaces?
7. In your opinion, what are the long-term prospects for green open spaces?
8. Have you noticed any impacts of urban development (good and/or bad) on the user experience or surrounding landscape in urban green open spaces?
9. When planning/designing green open spaces, what factors determine if the existing landscape features are maintained versus constructing new ones?
10. What typical user activities have you observed in urban green open spaces? What extreme/unusual user activities have you observed?
11. What strategies do you use to ensure that iconic urban green open spaces remain relevant and resonate with future generations as the city evolves?
12. From your experience, what do you think are the common factors that affect how users perceive and interact with green open spaces in urban environments?

Landscape Design and Urban Planning

1. What advice or best practices would you give city planners, architects, and policymakers undertaking urban regeneration projects?

2. Can you provide insights into how technology and smart city concepts influence downtown redevelopment projects featuring urban green open spaces?
3. What strategies do you use to ensure that sustainable urban green open spaces are accessible and inclusive, catering to diverse user groups within the community?
4. How do you approach the initial concept and visioning phase when designing iconic urban green open spaces meant to represent a city's identity and image?
5. How do you stay informed of new trends and developments in landscape and urban planning?
6. What would you do if a proposed landscape and urban plan were not feasible due to some issues (i.e., budget, policy, conflict with community authority, etc.)?
7. Can you share an example of a successful strategy or design element that has positively affected users' perceptions and satisfaction with urban green open spaces?
8. Have you ever experienced a situation where user awareness differs significantly from your initial design intentions? How did you resolve this disconnect?
9. Have you done any projects aimed at changing or improving user perceptions of specific urban areas or green open spaces? What strategy did you use, and what was the result?
10. Can you provide insights into the lighting, signage, and wayfinding elements or methods that enhance the visibility and recognition of iconic green open spaces?
11. How do you ensure that the design of iconic urban green open spaces aligns with the city's broader urban fabric and architectural style?
12. Can you discuss any challenges or obstacles you've encountered in the process of designing and establishing urban green open space planning and design for a city?
13. What factors do you consider when conducting a site analysis as part of the design process?
14. What steps do you take to determine user engagement and/or potential programming when designing for urban green open spaces?
15. How do access to green open space and ease of navigation shape user awareness and inclusion in urban environments?

Urban Revitalization

1. If you have any experience, can you describe your participation in the urban revitalization project by introducing the key design and planning strategies that led to a successful urban revitalization project?
2. In your experience, what are the objectives and purpose of an urban revitalization project, and what is the difference between the usual urban development plan?
3. If you have this experience, what specific difficulties or obstacles have you experienced while carrying out the urban revitalization project?
4. In your experience, what are the decisive factors for maintaining an active urban area's long-term sustainability and vitality?
5. How do you address the unique challenges and opportunities of revitalizing downtown or city center areas compared to other neighborhoods?

Repurposing Vacant Lots

1. Can you share lessons learned or best practices (if any) from your experience in repurposing vacant lots for urban green open spaces?
2. Can you share examples of innovative approaches or design elements that are effective in revitalizing underutilized or dilapidated urban vacant spaces? What were the key sustainable features of these projects?
3. Can you provide insight into the importance of adaptive reuse of existing facilities and urban vacant land redevelopment in urban revitalization projects?
4. What are the typical challenges and obstacles to repurposing a vacant land as a green open space, and how do you address them during the planning and design phase?
5. Are there any design principles or sustainability criteria that are considered as a priority when repurposing vacant land as a green open space?
6. How do you ensure that repurposed open spaces are accessible and inclusive to suit a wide variety of users?

Community Involvement

1. Are there any examples of public-private partnerships that have played a major role in successful urban revitalization efforts?
2. What strategies do you use to ensure that an urban plan meets the needs of its community?
3. What role does community engagement play in the early stages of urban revitalization planning, and how do you engage local residents and stakeholders in the process?
4. How do you collect feedback and feedback from residents and users of urban green open spaces to identify their perceptions and needs?
5. What strategies do you use to promote social inclusivity and reduce social disparities within urban communities?
6. How do you engage with local communities and stakeholders to gather input and ensure that urban planning and design align with their quality-of-life needs and expectations?
7. Can you share an example of a project where user awareness and community engagement played an important role in the decision-making process or any modifications to the initial plan?

Cultural and Identity Factors

1. Are there specific cultural or demographic factors that you consider when considering your perceptions and preferences in urban planning and design?
2. How is the need to modernize and revitalize the preservation of historical or cultural elements balanced in urban planning?
3. How do you incorporate cultural, historical, and aesthetic elements into urban design to create a sense of place and improve residents' cultural and emotional well-being?
4. How do you approach the design and planning of green open spaces to ensure they reflect and enhance a city's unique identity and cultural heritage?
5. How do you balance the desire for innovative and contemporary design with the need to respect and preserve historical or traditional aspects of a city's identity?
6. Can you discuss the importance of storytelling and narrative in creating a sense of identity and connection between green open spaces and the city's history or culture?
7. What advice would you offer to urban planners, landscape architects, and city leaders seeking to create iconic urban green open spaces that define and enhance their city's identity?
8. How do you anticipate human use of these landscapes changing in the future?

Environments, Ecological Considerations, and Sustainability

1. Can we discuss the role of sustainability and environmentally friendly practices in urban revitalization design and planning?
2. How do you incorporate sustainable landscape practices, such as native plantings, green infrastructure, and stormwater management, into the design of new green open spaces?
3. How do urban green open spaces balance the conservation of natural elements and biodiversity in urban areas with meeting user expectations and needs?
4. How can vacant lots repurposed as green open spaces contribute to the overall urban ecosystem and improve environmental sustainability?
5. How do you address issues related to air quality, noise pollution, and other environmental factors that can impact the well-being of urban populations?
6. How do you ensure that landscape and urban plan takes into account the long-term effects of climate change?
7. Are there specific design principles or sustainability standards that you prioritize when creating iconic urban green open spaces that represent a city's identity?

Quality of Life

1. How do you prioritize public health and safety in urban planning and design, and what strategies have you employed to create safer and healthier urban environments?
2. How do safety and security issues affect user perceptions of urban greenery, and how do projects address them?

Circulation

1. Can you provide insights into designing walkable and pedestrian-friendly urban environments that encourage physical activity and community interaction?
2. Are there specific transportation and mobility solutions, such as public transit, bicycle infrastructure, or pedestrian pathways, that you prioritize to improve urban residents' mobility and convenience? Can you suggest any specific solutions for this project?

Policy and Regulatory

1. Can you discuss any regulatory or zoning considerations that may affect urban green open spaces' sustainable design and planning on previously unused land? How do they affect the repurposed green open spaces, and how do you navigate (if any) challenges?
2. How does the overlap in jurisdictional boundaries influence policy related to the design and planning of urban green open spaces in Arlington? What are the pros and cons of this governmental entity overlap?
3. What is the carrying capacity/user threshold of the urban green open spaces? How is this determined? How is it regulated?

Economic and Community Development

1. What strategies do you use to ensure that landscape and urban plans are equitable and inclusive?
2. How can urban revitalization plans benefit people from all walks of life, including fair, inclusive, and marginalized communities?
3. Can you share a case where repurposed vacant lands have positively affected the region's value, safety, and community cohesion?
4. How do you balance the need for public access and recreation with other functions, such as retail, dining, or cultural spaces, in downtown urban green open space planning?
5. Can you share examples of how iconic urban green open spaces have contributed to economic development or placemaking within a city?

Evaluation

1. What methods or tools do you use to measure the impact and success of iconic urban green open spaces in terms of contribution to the city's identity and brand?
2. Are there specific metrics or indicators you use to measure the sustainability and environmental performance of newly created green open spaces to measure the effect on public health, welfare, safety, and quality of life?
3. How do you measure the success of a design implementation for urban green open spaces?
4. Are there any specific tools or technologies you use to collect real-time user feedback and tailor city planning and design accordingly?
5. What methods do you use to measure the long-term impact and success of urban revitalization efforts on communities, economies, and quality of life?
6. How do you assess the impact of design choices on user awareness and experience in urban planning projects?

Site Specific Questions

Urban Green open spaces

1. What kind of green open spaces does Arlington have? Do you think it is enough to have this amount of green open space?
2. Please explain how your field is related to the cultural and/or environmental aspects of Arlington's urban green open spaces.
3. Please describe a previous project you have worked on related to downtown Arlington green open spaces.
4. What types of projects do you seek out as design precedents when working to design Arlington's urban green open spaces?
5. Do you think Arlington has enough urban green open spaces to serve its residents? If so, or if not, why do you think so?
6. Do you think public open green open space, which stands for identity in the city, is in Arlington? If so, what factors do you think reflect identity?
7. Do you think Arlington's green open spaces have had enough positive cultural, economic, and environmental impact?
8. Do you think Arlington's green open spaces improve people's health, safety, and welfare? If so, what components affect most?
9. What kind of critical factors should be considered in downtown Arlington's urban green open spaces in your mind?
10. What maintenance routines are currently in place for urban green open spaces?
11. Are there specific sustainability practices or goals, such as native plants, green infrastructure, or energy-efficient lighting, that you prioritize when developing urban green open spaces in downtown areas?
12. What are some common impacts on the green open spaces and user experience during daytime, nighttime, and weekdays and weekends in Downtown Arlington?
13. What recreational opportunities are available for users of the local green open spaces?
14. What guidelines are in place for visitors to urban green open spaces?

Arlington Dream Park.

1. What is the boundary of downtown Arlington?
2. Is there any municipal plan for Downtown Arlington development or redevelopment?
3. Are there any significant differences between downtown Arlington and other Arlington areas? (i.e., culture, socioeconomic factors, community needs, and so on.)
4. Do you think Arlington's downtown is working well as a city core?
5. What do you think about the core value of Arlington's assets?
6. Do you know why this site (Arlington Dream Park) has been empty and unused?
7. How was this Arlington Dream Park plan started for any reason?
8. The project site already has a plan for Arlington Dream Park. Are you satisfied with the current design? If yes, what aspects do you satisfy? What parts are dissatisfying if not, and how can new suggestions improve those factors?
9. What elements do you think are needed to make a user-friendly park?
10. Why was this location selected for the future park in the city's green open space master plan?
11. Are there any requirements for the buffer from the railroad track? How do you think it can be safe from potential accidents?
12. What is the parking lot usage next to the planned vacant lot for Arlington Dream Park? (This parking lot is on the west side of the planned lot.)
13. What if this parking lot is also utilized for green open space? How do you suggest a substitution for the current surface parking lot?
14. Is there any documentation for historical land use? What was the past usage of the project site?
15. There do not seem to be many programs for green open space in the currently released plan. Through this research, I would like to design a community-friendly park. Do you have any opinions on this?
16. Is there any city policy in relation to Arlington's vacant lot?

Landscape Design and Urban Planning

1. How have urban green open spaces impacted local settlement patterns? How has it impacted local zoning and development guidelines?
2. What types of redevelopment are used as part of ongoing green open space planning to encourage revitalization in Arlington?
3. What planned activities were most popular in Downtown Arlington?

Urban Revitalization

1. How do you assess the current state of downtown Arlington to determine if it could benefit from redevelopment through the creation of urban green open spaces?

Repurposing Vacant Lots

1. What do you think about the reason that is driving vacancy spikes in Arlington's urban core?
2. In downtown Arlington, are there any specific issues with vacant lots, unused land, and/or similar kinds of empty lands?
3. Can you share your opinion about Arlington's vacant land?

Community Involvement

1. What strategies does Arlington use to attract private investment and businesses to revitalize urban areas, and how do they ensure they are aligned with the vision of the community?
2. How much is the community involved in landscape and urban planning?
3. What is the most common and/or particular complaint about green open spaces from Arlington's residents?
4. Are there public involvement opportunities for redevelopment or design decisions in Arlington?
5. Are there any local public groups that work to influence the cultural, political, or environmental aspects of urban green open spaces?
6. What public education is related to best practices in urban revitalization and Arlington's park and recreation master plan process? What other types of public education do you promote related to urban green open spaces?

Cultural and Identity Factors

1. Are there specific cultural or seasonal events associated with iconic urban green open spaces that help reinforce the city's identity?
2. What are the key considerations when integrating cultural, historical, or symbolic elements into the design of iconic urban green open spaces?
3. What is the historic significance of the Arlington's greenspace to the landscape? Is this documented in any way (i.e., local publication, photographs, etc.)?
4. Are there any traditions or cultural events that take place at or are associated with the local green open spaces?
5. Are any cultural significance and/or community culture to be reflected in Arlington's new urban green open spaces design?
6. What impacts/events would result in landscape and urban planning to the public?
7. Are any of the existing features within or around the downtown Arlington landscape associated with particular cultural heritage values of the local community?

Environments, Ecological Considerations, and Sustainability

1. How does the local ecosystem and environments influence urban green open space development, design, programming, and maintenance decision, especially within downtown Arlington?
2. How do the Texas climatic shifts impact maintenance procedures for urban green open spaces?

Policy and Regulatory

1. Are there any specific policies, incentives, or regulatory changes that have been recommended or implemented to support urban revitalization projects in Arlington?
2. Can you explain downtown Arlington's zoning regulations and how they apply to current urban planning?

Economic and Community Development

1. How does tourism influence Arlington's green open space and local economy?
2. In your opinion, is there any way to engage surrounding retailers in this project?

Data

1. If possible, could I ask you for the latest updated data, not the publicly available GIS data or any city plan-related data for site inventory and analysis?

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