Reclaimed for People:

Lessons Learned from New York City's Transformed Public Spaces

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Abstract

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Vast majorities of public space are dominated by the movement and storage of cars at the expense of pedestrian safety and comfort, especially in cities in the United States. New York City transformed street space formerly dominated by auto-centric use into pedestrian plazas under the PlaNYC policy directive in 2007-2013, offering a unique opportunity to study public space reclamation for people in the US urban context. This thesis presents a theoretical framework for analyzing public space evolution and the urban forces that act upon public spaces, using five knowledge bands within this framework to categorize these urban forces. Academic literature on global examples was used to confirm the strength of the knowledge bands. Three case studies of public plazas emerging from former auto-oriented street space in New York City were explored using the framework. Lessons learned from the transformation process for these three spaces and outcomes in the present are translated into insights for future planners and decision makers who wish to understand how urban forces may contribute to street space reclaimed for pedestrian use.

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III. Introduction

We may interpret much about a society's attitudes toward who the city is for from how the city manages its public spaces. Many urban philosophers behold the street as a place holding community-building opportunities. Pedestrian streets represent a physical manifestation of a city's sensitivity to the human-scale condition and celebrates walking as an essential part of urban life and of a meaningful collective existence (Parajuli & Pojani, 2018). The most vibrant spaces tend to be those with a diversity of users and activities (Jacobs, 1961). The best-used public spaces have large numbers of people in groups and more people meeting each other impulsively (Whyte, 1980). Despite the widespread acknowledgement of the value of vibrant, people-focused streets and public spaces, such environments are rare among cities in the US.

The proportion of public space set aside for private automobiles increased sharply in the US and Europe during the early-to-mid-20th century because of the rapidly spreading cultural mindset that streets are for cars and people belong on the periphery. Infrastructure to accommodate personal vehicles quickly became the priority of most US state and municipal transportation departments by the mid-1900s, and prevailing attitudes de-prioritized the safety and comfort of people walking, rolling, cycling, standing, and sitting. Even in cases where cities made efforts to start reversing this trend, attempts to build pedestrian spaces such as the largely-failed movement for pedestrian malls in the 1960s in the US have tempered enthusiasm for new pedestrian spaces and have made urban planners wary of closing streets to private vehicles (Amos, 2020). Many urban observers look to the success of European cities in continuing to maintain compact and walkable urban centers as ideal examples of healthy, vibrant urbanism, in addition to Europe's

reversal of the trend toward car-domination in center cities. The difference between European and US cities related to treatment of post-war pedestrian spaces may be simple yet surprising; cars were also beginning to dominate European city streets in the early 20th century, but the post-war necessity to solve mobility problems associated with fitting cars into medieval city streets worked to foster healthy public life much more than in the US, where US cities were trying to save downtown retail in the face of suburbanization (Amos, 2020). Additionally, a more robust cultural backdrop in far longer-established European cities led to greater acceptance among their residents of government measures to curtail continued urban development centering automobiles.

In recent decades, there has been a revival in US public opinion that the use of the American street should be more equitably accommodated for users of all mobility types. Planners and academics are shifting toward an understanding that the presence of safe, comfortable, and attractive walking environments is essential for vibrancy in the downtowns and centers of global cities (Balsas, 2019). Streets around the world are being reclaimed and redesigned to recover their full use by communities as social spaces where people can safely walk, roll, cycle, socialize, and shop instead of only experiencing the streets as conduits for automobile traffic (Kamel et al. 2017). This process of transformation only occurs when the street produces a sense of place that invites people to interact with a wide range of activities (Kamel et al. 2017). Whyte (1980) discusses how well-built new spaces have the power to create new constituencies by stimulating people into new habits such as new paths to walk to and from work and new places to pause and enjoy the day.

There is a set of identified obstacles that inhibit efforts in US cities to design and operate streets that function for many transportation modes rather than solely for private vehicles. These are

expectation, liability, and education (Antupit et al. 1996). There is an expectation among US car drivers that one should be able to drive from origin to destination without any impediments, a belief perpetuated by engineers in the US over the last century whose mission is to minimize delay by improving traffic flow. Attempts to slow motorists or impede their travel are often viewed as a liability, and design standards are modified to create barrier-free travel in order to avoid liability (Antupit et al. 1996). Non-motorized modes of transportation are largely overlooked because universities have largely not educated engineers on designing transportation systems and networks that promote all modes of transportation.

Against this backdrop of car-oriented culture and accomodation by most planning and engineering departments nationwide for car-centric infrastructure, something anomalous began taking place in New York City (hereafter referred to as "New York") in the mid-2000s. The Michael Bloomberg Administration released PlaNYC in 2007 (Jones, 2016); this was a strategic plan designed for a range of issues: preparing the city for growing populations, strengthening the economy, combating climate change, and enhancing quality of life for all New Yorkers. Janette Sadik-Khan, in her role of Transportation Commissioner for the Department of Transportation from 2007-2013, oversaw transformations of dozens of New York's public spaces across all five boroughs (Sadik-Khan & Solomonow, 2017). These included new pedestrian plazas, an extended network of bicycle infrastructure designed to foster a safer and more practical cycling experience for residents, and reprogrammed streets that worked to ensure greater safety and transportation options for all residents by making more efficient use of street space. In the span of just a few years (2007-2013), New York did what few other US cities may speak to in terms of redesigning and reclaiming public street space for pedestrians and cyclists. Over a decade after these interventions came to fruition, the spaces remain allocated for people walking and rolling as

cherished public places that have become integral to their respective neighborhoods. Many academics, as well as Sadik-Khan herself, describe this series of street reprogramming projects as the outcome of an unlikely confluence of political and social conditions that many pedestrian-focused planners can only imagine. However, planners in other cities need not rely on chance conditions to work toward improving the quality of their streets through enhancements of the pedestrian experience; if the combination of conditions that resulted in New York's successful street reclamation could be understood, then perhaps other cities may take note and make progress toward replicating these successes.

This thesis aims to explore the urban conditions in place that may have led to New York's transformation of public spaces toward pedestrian use, and synthesize these into a framework of forces that help shape public spaces. I begin by reviewing literature of public space transformations on a global scale to understand the broad forces that catalyze the public space evolution from use for the car toward human-scale use and present these as categories of urban forces termed "knowledge bands" organized into a framework of analysis (this term is described further in the next chapter). Next, I document the role that each of these knowledge bands played in New York's transformation of three public space case studies in 2007-2009; these are presented and discussed in Chapter VII. I then discuss how these transformed public spaces have continued to evolve past their initial closure to cars into the present day, adding my own observations of how the knowledge bands may have helped shape these plazas. Finally, I synthesize New York's use and leveraging of these forces into lessons learned that may be taken into account by other cities interested in transforming their own urban public spaces from car streets to pedestrian plazas. My methods used for each step of this project are described in their respective chapters.

Figure 1. Flatiron Public Plaza. One of the many public plazas created through reclamation of the street near Madison Square Park, before (left) and after (right) the initial intervention in 2008. Though not included as a case study location for this project, this was one of a series of similar spaces transformed by Traffic Commissioner Janette Sadik-Khan, working under the Bloomberg administration from 2007-2013 (NYC DOT, n.d.).

Understanding which forces correlate with urban public space transformation is important for cities nationwide who have identified a need for more pedestrian-friendly urban landscapes, and the framework of knowledge bands that I present begins to help address this need for understanding. It is my hope that urban planners and public officials may use the framework as a new way to make sense of the complex and interconnected landscape that is pedestrian-oriented public space planning and management.

IV. Knowledge Bands: A Framework For Forces That Shape Public Spaces

It is widely accepted by the field of urban planning that cities and their public spaces are shaped by a wide range of conditions, factors, and forces. To create some sense of order in evaluating

how these forces act upon public spaces to transform them toward human-scale use, I establish what I believe to be the most important categories of these societal forces as a series of "knowledge bands", which together form a framework through which we may begin to understand what causes public spaces to evolve. Similar to other disciplines within urban planning, the ways in which these bands interact, intersect, and overlap with one another to shape urban public spaces are dynamic and complex. In this chapter, I describe the five bands that I have identified as the most important categories of urban forces that shape public spaces. I then present my review of planning literature to highlight examples of these bands making themselves evident in public space transformations all over the world. The first four bands were hypothesized as important primary forces prior to the literature review, and the fifth emerged as an additional major band during the course of reviewing literature; this fifth band is included in the framework.

Knowledge Band 1: Political Leadership & Policy Directive

- The policy impetus that calls for transformation of public spaces, either directly through space-specific redesign or indirectly through citywide form mandates or goals related to density and walkability.
- Within this band are sub-forces such as political power dynamics, stakeholder presence, and histories of institutional attitudes and approaches to public space management

Knowledge Band 2: Design of Space & Intervention Approach

- How is the transformed public space designed and who is it designed for? What outcomes are desired from this space? Are uses dynamic or static?

- The problem being addressed in the space and the populations the project anticipates serving and/or impacting
- The spatial context of the public space within the surrounding urban fabric
- The process for identifying and implementing the public space, the methods used, and the procurement of budget and material resources

Knowledge Band 3: Cultural Climate & Public Opinion

- Overall public opinion of the project/ intervention prior to, during, and following implementation
- Populations identified as supporting the project and groups opposing the project
- How public engagement was conducted, outcomes of the engagement, and response to feedback from the engagement
- Coverage of intervention in news media and the perspective adopted by the media

Knowledge Band 4: Management & Governance

- The parties tasked with the responsibility to maintain the transformed space
- Funding streams for providing ongoing maintenance of the space
- Whether public-private partnerships are employed and the nature of the organizations with which city governments partner

Other potential categories of knowledge were considered during review of the literature; upon completion of the literature review, a fifth band was established: economic forces and business interests. Even though this knowledge band overlaps and interacts with the other four bands,

business and economic interests themselves emerged as a distinct, powerful force in helping to transform public spaces.

Knowledge Band 5: Economic Forces & Business Interests

- The influence and/or interests of area businesses
- The level of support for or opposition to public space transformations from local businesses
- Whether the goal of economic development factored into transformation, and whether this was a primary influence in some aspect off the implementation of the space

The review of literature related to public space evolution explored how these bands have affected public spaces to evolve toward human-scale use, away from historic auto-centered use. This literature review was global in scope and searched for examples of urban public spaces that underwent this specific transformation. While the urban contexts and the resulting forms and functions of the reviewed public spaces varied somewhat, the uniting feature in common among them all was their former use for private automobile movement or storage and their subsequent transformation to pedestrian-oriented use. What the literature reveals about the nuances of each current are synthesized into a framework that I used to examine the evolution of selected case study sites in New York (discussed in Chapters VII and VIII).

I acknowledge some limitations with this research project. The knowledge bands that emerged from the literature certainly do not fully capture all forces present in any given urban area that might influence whether and how public spaces evolve. There could be countless factors from all facets of society that may have contributed to the evolution of public spaces discussed in this thesis. Additionally, I do not claim that any of the knowledge bands constitute causation of the

outcomes we see today in the public spaces discussed. I present the knowledge bands as a theoretical framework to begin bringing some "sense of order to the chaos" by focusing on the evident strongest forces and their relationship to changes in our shared streets and public spaces. Along these lines, all cities are different and what is successful in one may not be replicated perfectly in another. My goal with this project is to coalesce a different foundation for distilling the complexity of urban forces down to a manageable structure that may be used to pedestrianize streets for the enjoyment of future urban dwellers.

V. Literature Review: Forces Shaping Commons in Global Planning

Available literature was reviewed with the goal of understanding the forces that catalyze transformations of public spaces. This project identifies five categories of societal forces demonstrated to have a relationship to the evolution of public spaces, and these have been organized in a framework of knowledge bands. The bands explored in this chapter include: 1) Political Leadership & Policy Directive; 2) Design of Space & Intervention Approach; 3) Cultural Atmosphere & Public Opinion; 4) Management & Governance; and 5) Economic Forces & Business Interests. A summary of takeaways from each band is presented in Table 1 in Section F of this chapter.

The UW Libraries database served as the main source of academic literature. The primary keywords and phrases used to conduct the global literature review were "street pedestrianization", "public space evolution", "pedestrianization of public spaces", "public space pedestrianization", and "public space pedestrianization conditions". Spelling of the word

"pedestrianization" was changed to "pedestrianisation" for each of these to capture results from international literature that use such spelling.

A. Political Leadership & Policy Directive

Politics and policy directives are a powerful force in shaping any urban environment. Political motivations are often crucial for realizing redesigns of public spaces because elected officials are pressured to solve problems and may often influence the funding streams for such improvements (Balsas, 2019). I reviewed literature within this knowledge band with the goal of understanding the impacts of government directives and policies resulting from political power dynamics (or the other way around) on public space transformations toward human-scale use.

This knowledge band intersects with the others in a few ways. A nation's/ city's politics are likely to have a significant influence on which design approaches are chosen and implemented for changes to public space, and management of the space is often prescribed by the city government. However, politics is generally a reflection of the cultural climate and a society's overall attitudes and perceptions toward who has the right to use public spaces in certain ways. Furthermore, business interests and economic forces may factor into the decisions of political leadership related to implementation or maintenance of pedestrianized streetscapes. This section focuses on exploring the instigators and outcomes of political and policy actions as a distinct band of knowledge.

There are examples globally of top-down approaches from national and provincial governments to repurpose public space for pedestrians that was previously dominated by private vehicles, even when such efforts seemed to run contrary to public or business sentiments. Some governments have taken initiatives to transform public spaces to achieve greater urban vibrancy

through reduced car-dependency. The City Government in Oslo (Norway) in 2015 introduced plans for streetscape reallocation in the city center with key motivations of achieving a more vibrant and pleasant city center, facilitating non-auto transport mode use, and reducing greenhouse gas emissions produced from transport (Hagen & Tennøy, 2021). This was implemented despite business-related backlash. Brussels (Belgium) has recently pedestrianized its central boulevard from a traffic artery into a "street for people" despite public and business-related controversy (te Boveldt et al. 2023). The Brussels regional government officially supports the development of car-free or low-traffic zones throughout the city, and momentum for pedestrianization materialized in the Regional Mobility Plan of 2021 despite backlash and controversy surrounding the pedestrianization scheme (te Boveldt et al. 2023). This codification of trends toward pedestrianization appears to be largely driven by a vision of how the government wishes to see the central urban space of Brussels evolve, suggesting that top-down (and potentially less publicly popular) efforts are powerful in public space reclamation.

There are other examples where key political figures played pivotal roles in pedestrianization of their cities' public spaces. Antwerp in Belgium had seen a range of pedestrianization proposals for over a decade by the 1970s, aligning with a broader European post-war trend toward pedestrian-level use in public spaces and plazas. Antwerp's proposals did not result in lasting change until municipal councilmember Bob Cools became the political figurehead for the city's pedestrianization efforts in 1971 (Gregg & Kickert, 2025). Cools achieved this through political and ideological alliances, the precedents of successful implementation, a small-scale approach, and employing public opinion to drown out opposition (Gregg & Kickert, 2025). Cools held an ideology of a social city where people of different backgrounds could meet, live, and work, and a city that values historic urban fabric; he collaborated with other council members allied to

construction of affordable housing and removal of cars from public spaces. Gregg & Kickert (2025) describe Cools's strategy as a "commando approach" that leveraged alliances to focus political and financial capital on intervening on specific streets and squares from which pedestrianization was expected to expand easily; Cools's ideology straddled the line between socialism and capitalism and balanced top-down and bottom-up initiatives. Other literature points to the importance of support from political figures to implement programs such as open streets (discussed further in Section B; Eyler et al. 2015).

Other pedestrianization examples seem to have arisen from governments responding to recognized needs or criticisms of public spaces, often in partnership with entities outside of government. Melbourne's center city was criticized in the 1970s for having been usurped by private cars. The municipal government responded by commissioning a study with architect Jan Gehl that led to recommendations of lunchtime street closures to improve the public realm; Melbourne's Central Business District was bustling with a 30-100% increase in pedestrians a decade later (depending on the time of day) (Parajuli & Pojani, 2018). Nearby in Queensland, Cavill Avenue on the Gold Coast was opened to pedestrian priority on a trial basis in 1973. The literature cites the support of the Chamber of Commerce and the development of state-level guidelines and allocation of budgets for pedestrian malls to be instrumental in this space's success (Parajuli & Pojani, 2018). These same researchers described how the Government of Nepal responded to the incompatibility of Kathmandu's historic cultural attractions and narrow streets with motorized vehicles by restricting the entry of such vehicles into historic precincts. The national government recognized the value of tourism to these attractions as a major economic driver for the country, and they were assisted in these restrictive efforts by international funding agencies, local NGOs, and The Kathmandu Sustainable Transport Project

(funded by a private development bank based in the Philippines) (Parajuli & Pojani, 2018). These examples illustrate how governments may be successful in addressing community needs by being sensitive to feedback and taking the initiative to respond to public concerns, despite presumptions that there may be opposition from certain groups such as business interests.

It is likely that regional trends in culture and societal attitudes have some influence over whether governments choose to engage in public space transformation toward human-scale use. Post-war Europe saw widespread rebirth of pedestrian-oriented attitudes as war-torn cities were being rebuilt. These regional attitudes were solidified in the Council of Europe's Urban Renaissance Campaign (1980-1982) inclusion of pedestrianization themes, and the Organization for Economic Cooperation and Development (OECD) set forth policies for creation of pedestrian malls starting in 1972 (OECD, 1972; Parajuli & Pojani, 2018). Directives from international advisory organizations such as these may play a role in inspiring more recent initiatives in European countries compared to other global regions such as the US that have not subscribed to comparably strong international directives.

US cities and states have engaged in growth management policy in the last several decades, and there is a stated desire to facilitate pedestrian-oriented built environments as a part of growth management. However, it's unclear whether these stated goals have resulted in a significant increase in street space reclaimed from cars for people. The Growth Management Act in Washington State, passed in 1990, requires cities in the State to engage in comprehensive planning as a tool for accommodating the State's growing population. Early iterations of Seattle's comprehensive plan implement an "urban villages" strategy with a stated goal of encouraging pedestrian activity and promoting walking as a legitimate transportation mode. Literature released soon after urban village strategies were adopted within growth management questioned

the effectiveness of such provisions in significantly improving pedestrian infrastructure networks (Antupit et al. 1996); however, additional literature suggests that the urban village strategy may be effective in terms of densifying urban areas and encouraging pedestrian infrastructure improvement (Wei et al. 2021).

It is clear that politics and policy directives play a role in public space transformation. Literature claims that political, institutional, and social barriers to pedestrianization are greater than technical and financial barriers (Parajuli & Pojani, 2018); this suggests that improved coordination between government, NGOs, and the public (including private business) are of high importance to overcoming such barriers. Governments who forge ahead with public space transformation without complete public support and governments who have responded to public and business-related feedback/criticism through public space transformation have realized thriving pedestrianized public spaces; ultimately, having a national or local government that is willing to take some risks and act through either approach is may be successful in reclaiming public space for people.

B. Design of Space & Intervention Approaches

As mentioned previously, choices of how to approach intervention and design while transforming public spaces are influenced by the political and social atmospheres of cities and regions. However, even the most supportive and pedestrianization-friendly political and social climates alone do not result in successful reclaimed public spaces without thoughtfully-selected design approaches. I consider concepts within this knowledge band to include the form and function of the space within the broader neighborhood context, as well as how the updated space is designed, and the timelines and techniques used by city authorities to transform it.". This

section explores the design of space and intervention approaches as a knowledge band having emerged as a major factor behind public space transformation toward pedestrianization.

Literature points to iterative changes as being a successful approach to pedestrianization projects. One such approach is temporary use changes. The exercise of incremental transformation of public spaces through temporary street use alterations or experiments seems to be a crucial feature of success for many public spaces (Eyler et al. 2015). Open streets, or “ciclovias”, are viewed as an approach for testing out new uses in streets, and support from policy makers or elected officials is of particular importance; furthermore, open streets initiatives are more likely to become successful when they are incorporated into broader citywide agendas and budgets (Eyler et al. 2015). This finding is echoed elsewhere in the literature in the context of using incremental pilot projects to garner public support (Parajuli & Pojani, 2018). It became clear during the COVID-19 pandemic that versatility and adaptability of street uses is possible where there is a will to try out new things in our streets, and this lesson is important to internalize for future endeavors in urban experimentation. We also see that here is where design and approach as a knowledge band interacts with the knowledge band of public opinion.

When the Oslo City Government implemented car-restricting interventions during 2017-2019, the implementation process included stepwise removal of about half of the on-street parking spaces in the center city and introducing a new driving pattern to reduce car use and inhibit through-traffic in the city center. This included charged parking for residents and visitors. These interventions were done while still allowing cars to be driven on most streets and retaining about 90 percent of the parking capacity in the center city through unchanged parking garages (Hagen & Tennøy, 2021). The freed-up space allowed for new temporary and permanent street-use changes. However, Oslo already had strong and accessible public transport systems that could be

leveraged to support interventions designed to restrict cars, and car use in the city center's streets had gradually declined over the last few decades before the interventions were implemented (Hagen & Tennøy, 2021).

While temporary "open streets" often seem very popular among city residents, they don't always end up resulting in permanent change to how public street spaces are used (especially in the US). Bertolini (2020) examines the connection between single-event street experiments such as open streets programs and long-term street transformation; they note that impacts depend on the street experiment's scope, with experiments that are short in duration, low in frequency, and that target only part of the street having limited long-term policy impact. Where street experiments have been seemingly most successful are where they are simultaneously radical and feasible as well having high communicating and mobilizing power ("radical" in this context simply refers to multiple uses of the streets beyond, and perhaps even excluding, car movement and storage) (Bertolini, 2020). Therefore, if long-term pedestrianization is the goal, it seems advantageous to use an approach of temporary use changes in a larger context of street experimentation with long-term goals clearly communicated simultaneously.

Location and surrounding features appear to be powerful predictors of outcomes of pedestrianized spaces. Ashour and Al-Shamali (2020) researched pedestrianization schemes in Amman, Jordan and assert that there are many factors involved in the success of pedestrian malls related to location and urban design. The researchers cite location at the heart of dense residential communities with high levels of foot traffic by visitors to shops and restaurants as being vitally important, as well as proximity to a "major anchor" such as a tourist location. Additionally, they find that spaces with a variety of shops and activities, inviting open spaces that encourage relaxation and interaction, and the provision of economical and convenient parking and transit

systems are the design-oriented factors crucial for successful pedestrian malls (Ashour & Al-Shamali, 2020).

"Pedestrian malls" are largely somewhat different from the case study spaces examined in this research, but many of the dynamics related to these spaces in the US are highly relevant (namely the act of closing streets to car traffic in favor of pedestrian-focused use). Matuke et al. 2021 describes the rise of mid-20th century pedestrian malls in the US and how most of these spaces have failed. The researchers also mention that many funding opportunities and amendments to tax law and zoning ordinances were on the table for pedestrian malls, and that federal urban renewal funding and national organization funding was made available. Pedestrian amenities were paid for in part through bonus zoning which granted additional rights to developers in exchange for pedestrian improvements (Parajuli & Pojani, 2018). Pedestrian malls in the US largely suffered from declining central city populations and were outcompeted by suburban shopping malls (Matuke et al. 2021). Businesses suffering from lack of pedestrian flow led to increasingly desolate malls with fewer people and greater public perceptions of crime. Additionally, many malls were designed without appropriate senses of scale, resulting in long, wide-open spaces without barriers to break up the space; this reportedly made pedestrians feel uncomfortable (Matuke et al. 2021). A similar outcome was observed in Cairo when *al-Shawarbi* Street was pedestrianized based on economic development goals at the expense of comfortable user design (Kamel et al. 2017); this case shall be discussed more within the section that discusses Cultural Climate as a knowledge band. It appears that even though there were incentives for creating welcoming public spaces, the fact that they focused on maximizing developers rights and bolstering economic outcomes rather than thoughtfully curating a pleasant pedestrian experience was a major factor in the largely negative outcome. According to Matuke

et al. (2021), pedestrian malls are successful based on a range of locational and site-specific design factors: locational factors include proximity to a university or college, association with a younger population (due to increased mobility), smaller yet more dense urban population size, proximity to an attraction with a dedicated tourist base, and adequate furniture to provide for seating and shading. Design and site-specific characteristics that may make a mall more successful provide a sense of containment, ground floor transparency, protection from the elements, seating and vegetation, perception of safety, and unique and level paving.

Evidence from this literature points to the importance of selecting a design appropriate for each public space and the value in using an iterative approach for implementing changes toward human-scale use in street space. Incremental approaches are met with less initial public and business backlash and may showcase how small and/or temporary changes in use provide value to the community in the longer term. Versatility of uses within public spaces seems to be a direction within urban design of such spaces that many cities are embracing in response to community feedback, and designs that attract visitors through varied retail and food options, comfortable physical layout, and a range of programming appear to result in the most successful pedestrianized spaces.

C. Cultural Climate & Public Opinion

The underlying cultural nuances of any city significantly influence how the public perceives public space and what role they see themselves as having in shaping pedestrianized street space. As mentioned previously, public opinion may influence government political forces as well as the actions of individual political leaders, which in turn may factor into choices made about design and how the space is managed. This section investigates examples where public

momentum and attitudes contributed to pedestrianization of public spaces previously dominated by cars.

Von Schönfeld and Bertolini (2017) discuss a range of research on public spaces as arenas for experimentation, one example of which is a "creative laboratory" initiative that emerged from Ghent, Netherlands to make the city more sustainable and livable. Designs for temporary alternative uses of street space (often involving reduced car use) are conceived by residents working with the program or city, with the aim of making city inhabitants less dependent on cars by providing exposure to positive experiences with other travel modes such as cycling (von Schönfeld & Bertolini, 2017). A latent demand for uses beyond primarily auto-oriented mobility are revealed when such a community-linked street experiment provides opportunities for residents to demonstrate how they want to use their streets. This concept seems to be supported by the outcomes expressed by nearby residents during follow-up monitoring of the transformed New York case study sites led by Sadik-Khan around 2010. More broadly, von Schönfeld and Bertolini (2017) highlight the involvement of a variety of actors rather than decision-making by politics or government alone as an important feature in enabling lasting and long-term transitions in public spaces; the researchers refer to this mode of planning as "governance" that encourages the involvements of "agents of change". This example blurs the lines of a few of the knowledge bands in that it involves initiatives started by government actors, leveraging feedback from residents in a way that produces community-minded designs and management plans.

A sense of involvement experienced by community members could prove valuable for the long-term collective stewardship of public spaces. Sanfeliu Arboix & Martin (2017) point to citizens' sense of belonging in a public space as important for defining the characteristics of that space, and how establishing this feeling of neighborhood belonging is a challenge in southern

European countries while it is more settled in Nordic countries. Achieving such a sense of pride and belonging in any part of a community involves many factors interacting over long timeframes, and this challenge is not easily met. However, by involving the public in how their communities are shaped and designing spaces that encourage community engagement, planners and decision makers could make huge strides in fostering a sense of community pride for shared public space.

The active involvement of pedestrian advocacy in advising municipalities is crucial for ensuring the development of adequate pedestrian infrastructure (Antupit et al.1996). The Seattle Pedestrian Advisory Board was created in 1994 (as a temporary body), consisting at that time of citizens appointed by the mayor and city council to advise those officials and all city departments on pedestrian-related matters. However, this board held no legal authority and was dependent upon support from the city and mayor (Antupit et al. 1996). The advocacy group was unable to save pedestrianized Pine Street (closed to car traffic in 1990) from being reopened to car traffic in 1995. This suggests that a more politically empowered pedestrian advocacy body is needed for creating lasting change for more pedestrian-oriented streets. Involving the public should lead to participatory planning outcomes rather than simply satisfying performative purposes.

As mentioned in Section B of this chapter, incremental interventions into public spaces seem to be an effective way to slowly garner support for larger pedestrianization initiatives. Hagen & Tennøy (2021) found in their research that Oslo city center residents were more enthusiastic about additional access to pedestrian-oriented spaces such as squares, parks, pedestrian streets, and car-free areas in the years following implementation versus when the changes were first being put into place. This suggests that being able to experience the outcomes of street space re-allocations in person helps to influence attitudes of residents toward similar future

developments. This concept was echoed after the pedestrianization of Boulevard Anspach in Brussels, where the researchers found that support for pedestrianization of that boulevard was highly correlated with support for further pedestrianization (te Boveldt et al. 2023). It may sometimes be difficult for urban residents not familiar with planning processes to visualize long-term benefits of street interventions and how they might greatly outweigh initial disruptions and inconveniences; achieving public support through pilot projects and smaller experimentation is evidently a key to winning over the public for future projects.

Opposition from at least a portion of the public is expected, especially when highly-contested street space is at stake. People are naturally wary of change when it comes to their neighborhoods and initiatives to redesign streetscapes that have persisted for as long as communities can remember, no matter how dysfunctional or inefficient they might be. There is evidence that the incrementalism mentioned previously also works to win over business interests to the cause of creating people-oriented streets. Pedestrianization of Antwerp's shopping streets met a consistent pattern of opposition from small retailers worried that limiting car access would reduce sales; area residents worried about displaced traffic. To counter this, Cools worked at leveraging support from residents and visitors and used strategic temporary streets closures and surveys to build evidence that pedestrianization did not negatively impact business (Gregg & Kickert, 2025). A majority of merchants were convinced after they observed increased sales due to a temporary closure in 1972.

Kamel et al. (2017) discuss the case of *Al-Shawarbi* Street in Cairo which was pedestrianized in the early 1990s. This was a vibrant and unique street where elite residents and celebrities shopped for imported goods in the late 1970s and was locally famous for its illustrious black market. Cairo followed the example of pedestrianization cases in European countries and began

intervening with the intent to pedestrianize *Al-Shawarbi* (in addition to other streets), actions that were not much appreciated at the time by residents and shop owners (Kamel et al. 2017). The researchers conducted surveys to assess public perception of the success of the street as a public space; a majority of shop respondents (93%) argued that that pedestrianization project had negative impacts on sales, while a majority of visitors surveyed (98%) were unhappy with the street design. The researchers link the negative perceptions to lack of connectivity to a larger pedestrian network, poor condition of paving and street furniture, and a single type of activity (retail) with no other attractions to draw users into the space (Kamel et al. 2017). These findings support the theory of diversity of use and attractions put forth by Jacobs (1961), which claims that cities have a most crucial need for intricate and close-grained diversity of uses that give each other constant mutual economic and social support to remain successful places. The case of *Al-Shawarbi* illustrates that the act of pedestrianizing a street alone does not necessarily result in a beloved pedestrian space; design and function of the space suffers when it is not designed to be a welcoming and vibrant space. Instead, public opinion outcomes are much better when pedestrianized streets and public spaces are designed with the user experience and comfort for people in mind.

It is clear from reviewing literature that community opinion and perception of public spaces is important to consider for efforts toward pedestrianization of formerly car-dominated urban areas. Various cities have found success in winning over support of the public through incremental implementation and experimentation and through active community engagement that involves residents in brainstorming potential alternative uses in their neighborhood's public spaces. Communities that believe that their opinions and desires are heard and valued could be

instrumental in achieving lasting changes to how they view street space, and intervening without considering the quality and warmth of the space as goals may result in a resentful constituency.

D. Management & Governance

The decisions made by cities or authorities on how to manage and govern public spaces have pervasive impacts on whether public space redesigns ultimately result in successful outcomes. This knowledge band is related closely to the band of Cultural Climate & Public Opinion because management (or mismanagement) of a space will send clear messages about how political leadership values the quality of the resulting streets; the public will not feel valued if authorities do not appear to value the places built for the people. I reviewed literature with an eye for how spaces are managed following completion of pedestrianization projects to explore whether any management patterns emerge and how these influence the success of public spaces.

Placemaking is a core function of urban public space management, and urban place management organisations (UPMOs) often play a key role in placemaking (Lin et al. 2023). UPMOs may facilitate redevelopment projects through gathering public testimony and holding community meetings. Various UPMOs stepped up during the COVID-19 pandemic to create new levels of programmatic support and resources to bolster downtown markets (Lin et al. 2023). Responsive collaborations between UPMOs, businesses, and local governments sometimes result in temporary changes in uses for streets, such as the temporary cafe seating witnessed during the pandemic (Lin et al. 2023). New York's Meatpacking District created its own neighborhood-level directive, the 2020 Pedestrian-Oriented District Plan, to guide investments in pedestrian management; programs include full-time staff to manage street closures and serve as public ambassadors (Lin et al. 2023). A neighborhood taking the initiative to manage its own public

spaces in addition to any city-wide directives is notable for its proactivity, and such initiative could lead to incredibly beneficial outcomes for community members.

At a time when most US cities decided to eliminate their decaying downtown pedestrian malls, Santa Monica chose to overhaul its own in 1980 and the city's Third Street Promenade is now a nationally recognized success (Pojani, 2008). Santa Monica created a public-private management agency in 1984 with the sole purpose of overseeing the mall. The initiative taken by a group of Santa Monica residents to prepare a platform for municipal action related to the mall as well as an engaged mayor who played a key role in galvanizing forces in support of revitalization appear to be crucial ingredients for the mall's success (Zane, 2005). The city used its zoning power to shift the location of five proposed multiplex cinema developments into the mall, which proved to be a major business and nighttime attraction; the city also used land use controls to influence the design of the pedestrian space with focus on outdoor eateries and design features to disrupt the prior auto-centric right-of-way (Pojani, 2008). This points to the importance of having a combination of comfortable design features along with a variety of activities to achieve success as a pedestrian-oriented space.

Amos (2020) further investigates pedestrianized streets in the US and why some flourished while many failed. Remaining pedestrian malls tend to be actively managed by city governments or business improvement districts, and such spaces tend to have periodic renovations and extensive programming (Amos, 2020). Business Improvement Districts (BIDs) or city government management often keep public spaces cleaner and more inviting for potential visitors, and are usually associated with more extensive programming that keeps the space vibrant and attractive for pedestrians (Amos, 2020). Periodic renovations allow the space to respond to changing community needs. That same study cites the pedestrian mall in Eugene, OR as an example of a

public space that may have suffered from a lack of maintenance and programming; the mall was removed and opened back up to vehicles in 2001 even though the space checked all the boxes for favorable characteristics of pedestrianized spaces (Amos, 2020).

A few different approaches to management of pedestrianized spaces have emerged from the literature as contributing to the success of such spaces. Creation of UPMOs tasked with coordinating management of public spaces could focus municipal resources into space-specific efforts. Such organizations have appeared in the form of public-private agencies with the sole responsibility to ensure effective management. Coordination between BIDs and municipal governments also seems to be effective for managing pedestrianized spaces. It seems that having a strong management plan at the time of initial intervention for a transformed public space is important for the ongoing success of such spaces.

E. Economic Forces & Business Interests

Interwoven among the four knowledge bands previously explored in this chapter is a fifth knowledge band: the influence of economic forces and business interests. The economic feature of public spaces depends heavily on design approaches and public opinion for success, and holds some influence over the actions of political leaders. After all, Whyte (1980) claims that a key feature of streets as public spaces is the inclusion of ground floor frontage dedicated to retail and food uses; I describe in this section how economic forces go beyond simply supplying food and shopping experiences in shaping public spaces.

When a one-block section of Pine Street in Seattle was closed to vehicle traffic between 4th Ave and 5th Ave to create a continuous, pedestrian-oriented Westlake Park, the response was mixed. Retailers adjacent to the park put pressure on the city to reopen Pine Street over concerns that the

lack of vehicular traffic in that street segment hurts business, while pedestrian advocates protested a potential re-opening (Antupit et al. 1996). Antupit et al. (1996) note that the mayor and the city council were in favor of reopening the street to traffic in order to secure retail tenants that would support the partial financing of redeveloping a major building site adjacent to the plaza. Ultimately, Seattle citizens voted to reopen Pine Street to motorized traffic in March 1995 (Antupit et al. 1996).

Public spaces undergo changes and face challenges indicative of urban conflicts including deterioration of historical contexts, rapid population growth, restricted resource access, and environmental degradation (Nasab, 2024). Sehili (2024) speaks to the overall driving force behind urban evolution as an evolution of values that reflect socio-economic change, as demonstrated in their evaluation of pedestrianization on rue Gouarir in Algeria from 1980-2000. Commercial activities that evolve in response to changing economic requirements and demands exert a transformational influence on urban spaces, including streets transforming from mere thoroughfare and access roads toward specialized commercialization and socio-spatial practices. This precise scenario occurred on rue Gouarir, illustrating the transformative potential of economic forces in shaping the built environment.

Returning again to Amos (2020), they report that the support of adjacent business interests is important for the success of pedestrian malls (according to malls surveyed in their study). This seems important when evaluating public space reclamation for plazas because a variety of adjacent businesses may attract visitors to the vicinity of the plaza in the first place, thereby providing the opportunity for more people to experience the plaza as a third space. This enhanced experience of businesses located near public plazas may have a symbiotic effect for both places. Amos (2020) notes that business interests were the main initial reason for installing

many pedestrian malls across the US, while business opposition was instrumental for the subsequent removal of many such spaces (Amos, 2020). Parajuli & Pojani (2018) note that trade either remained stable or declined slightly during and immediately after introduction of the pedestrian mall in many European cities, but the business benefits in the medium and long term were substantial and greatly outweighed initial losses. Those same researchers also found that the types of retail available may have factored into the success of Australian public pedestrianized spaces; interviewees claim that a retail base comprised of utilitarian stores and service centers such as banks and doctor's offices would not have seen the same success as the Queen Street Mall in Brisbane does today with its cultural attractions and varied retail (Parajuli & Pojani, 2018).

The literature review of what catalyzes public space evolution has revealed that, in addition to the four initial knowledge bands, a fifth emerges as a powerful factor in the success of pedestrianization: economic contexts and business interests. It seems that business interests on their own don't lead public space transformation toward pedestrianized space, but support of businesses directly impacted by street closures and a retail/ dining composition that pleases visitors both seem to play a role in public acceptance.

F. Summary of Knowledge Bands & Framework

Table 1 shows an overview of the main takeaways during the literature review; these discoveries are the most powerful forces acting within each knowledge band of the framework. The literature revealed conditions within the topic of each knowledge band that appeared to catalyze or have a relationship to public space evolution.

Table 1. Framework of Knowledge Bands. Forces discovered to have transformative influence on public spaces.

Knowledge Band	Conditions Within Bands Apparently Related to Public Space Transformation Toward Human-Scale Use
Political Leadership & Policy Directive	● Support from elected officials often crucial ● Top-down efforts balanced with bottom-up initiatives overcome resistance ● Collaboration and inter-sectoral responsiveness are powerful
Design of Space & Intervention Approach	● Iterative approaches / temporary changes to test ideas and build support ● Human-scale design, containment, diverse uses, comfort features, and proximity to attractions ● Focus on user experience over developer incentives
Cultural Climate & Public Opinion	● Regional contexts and attitudes shape outcomes ● Public involvement in experiments reveal desires, foster sense of belonging and stewardship ● Walking advocacy groups with political power ● Future projects gain support when residents experience pedestrianized spaces
Management & Governance	● Active management by city governments or organizations is crucial; absence sends signals ● UPMOs, BIDs, other local-level organizations may be valuable ● Designated management resources and plans for governance produce positive long-term outcomes
Economic Forces & Business Interests	● Economic interests strongly influence outcomes ● Revenue-generating uses win political support, sometimes at expense of design ● Reactions to initial downturns are strong in reversing pedestrianization efforts

VI. Review of NYC Public Space Transformation Policy (2007-2013)

Even though all of the global examples of public spaces discussed in Chapter VI are distinct in their location and cultural contexts, they all are potentially related to varying degrees by the five knowledge bands established in this thesis. Understanding the high-level conditions that drive public space transformation toward human-scale use over car-centric use has been valuable so far; however, evaluating recent street reclamation efforts in the US that resulted in permanent pedestrianization through the lenses of the knowledge bands could provide insight into which knowledge bands are most important in the modern US urban context.

PlaNYC: Getting Sustainability Done, first released in 2007, is an initiative blueprint focused on urban sustainability that has made New York a national leader on climate action (NYC Mayor's Office of Climate and Environmental Justice, 2023; Sadik-Khan & Solomonow, 2017). The initiative is praised in academic literature as one of the most significant climate change initiatives by a city government, in part because it included measurement protocols and a performance management framework (Jones, 2016). Acting in accordance with PlaNYC's climate goals, New York's DOT undertook a series of street-level projects focused on improving outcomes for all street users during 2007-2013, with several projects focused on expanding space and facilities for pedestrian use while simultaneously making traffic and transit operations on many of these streets more efficient (Sadik-Khan & Solomonow, 2017).

From this series of projects, three case study sites were selected for focused analysis based on several criteria. Their typologies vary in terms of scale and their use prior to interventions and transformation, as their context in their respective neighborhoods differs greatly. Furthermore

they are all examples of spaces that transformed from use for car mobility and storage to use for pedestrian movement and activity. These spaces were largely perceived by the public (and some within the Bloomberg administration) as unlikely candidates for successful pedestrian transformation; however, all three were transformed into thriving plazas that persist today, defying skeptics and expanding places of refuge for pedestrians from New York's notoriously car-choked streets (Sadik-Khan & Solomonow, 2017). How each case study space performed in the context of each knowledge band at the time of intervention is investigated, and the current conditions of each site are explored in Chapter VIII. I conducted this project looking for patterns in each of these spaces to see whether common elements related to the five knowledge bands contributed to the outcomes of each space. Primary sources used to document the process of transformation of these spaces were NYCDOT policy documents and reports, as well as Janette Sadik-Khan's account of the series of street redesigns in Street Fight: Handbook for an Urban Revolution (2017).

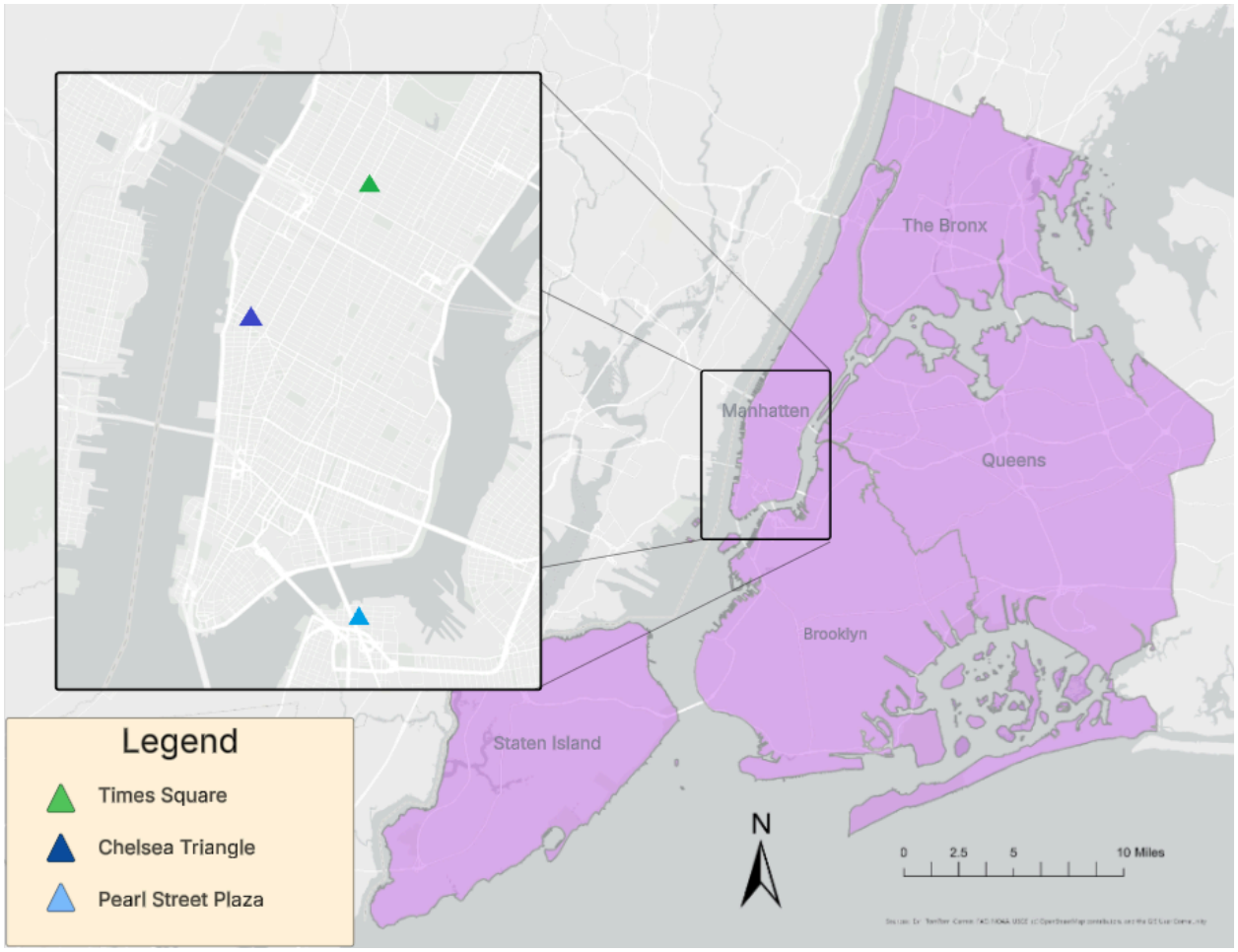

Figure 2. Map of the Three Case Study Sites. The locations of the case study sites in relation to each other within New York proper.

The three sites selected for in-depth investigation of the conditions leading up to their evolution of use and the current outcomes from NYC's policies and practices were Pearl Street Plaza, Chelsea Triangle, and Times Square. Their spatial distribution within New York is shown in Figure 2. These spaces are similar in that they are all triangles of street space created by their adjacent streets not conforming to the grid, along with being underused spaces. They are different in scale, relationship to the neighborhood, and their previous uses.

Pearl Street Plaza (PSP) in the DUMBO (Down Under the Manhattan Bridge Overpass) neighborhood of Brooklyn was the first attempt of Sadik-Khan's team to refashion street space (Sadik-Khan & Solomonow, 2017). Planning for this transformation began in summer 2007 and the interventions were completed later that year. The project transformed a triangular space used as surface parking for roughly a dozen cars, into a plaza used by nearby office workers for sunning, eating lunch using picnic tables provided by NYCDOT. Figure 3 shows a plan view of the area converted into Pearl Street Plaza. Figure 4 displays before-and-after views of the initial implementation.

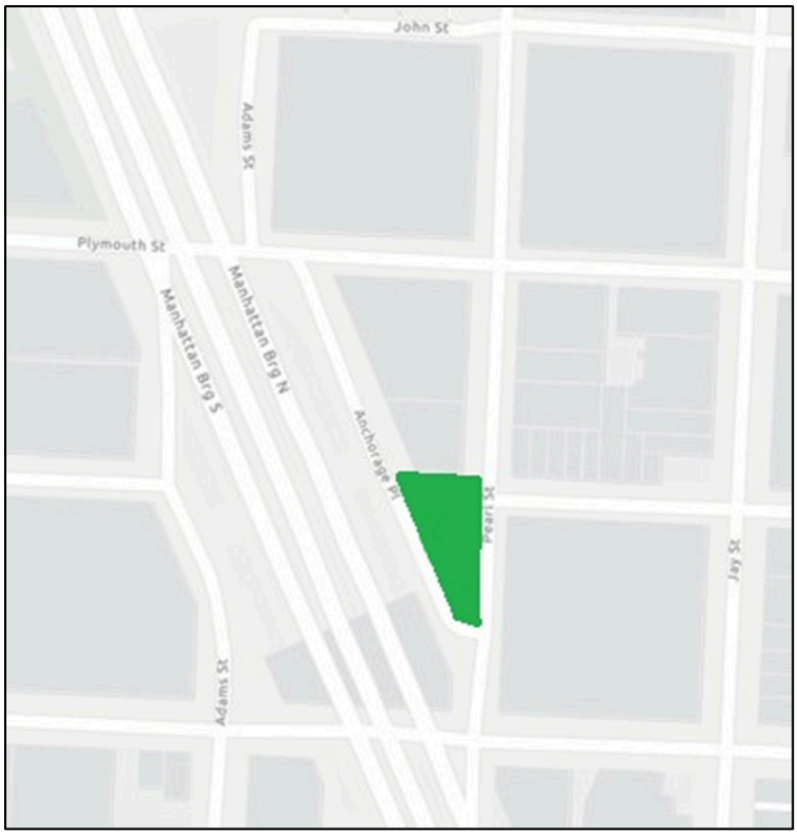

Figure 3. Plan View of Pearl Street Plaza. The shaded area indicates the former street and sidewalk space converted into the plaza in 2007.

Figure 4. Pearl Street Plaza Transformation. How this plaza in Brooklyn looked before and after closure to cars in 2007 (Sadik-Khan & Solomonow, 2017).

Peart Street Plaza is distinct from the other two case spaces for this study because of its location in a quieter district of NYC with less tourist appeal; additionally, this was the first attempt made by Sadik-Khan's DOT at refashioning a street (Sadik-Khan & Solomonov, 2017). Residents and office workers using the surrounding blocks are probably the most likely to experience any impact or use within this space. It may be easier to monitor the condition of a public space like this because it is so much smaller in size than Times Square and likely integrates into the surrounding urban fabric differently. Small public spaces existing within the broader city context of public space and how those spaces evolve are important to explore because of their major impact on the quality of urban life through their power to bring people into the street and make them stay longer (Whyte, 1980).

Shortly after the implementation of Pearl Street Plaza, a similar project was initiated at 9th Ave & 14th St on the border between Chelsea and the Meatpacking District in Manhattan. Figure 5

shows a plan view of the street area converted to Chelsea Triangle in late 2007, while Figure 6 shows before-and-after views of Chelsea Triangle's transformation.

Figure 5. Plan View of Chelsea Triangle. The initial street space shown was converted to be Chelsea Triangle in late 2007.

Figure 6. Chelsea Triangle Transformation. Views of the space before and after intervention to close the center of the intersection to cars in 2007 (NYC DOT, n.d.)

A convergence of three streets caused a traffic-choked intersection at this location that endangered the varied activities of offices, retail, residences, and nightlife. For the intervention, lanes formerly occupied by moving traffic on 9th Ave were closed and traffic was diverted to create a new triangle plaza, a "reprogramming" of the street that avoided adding to traffic congestion and was immediately accepted by the public as in-demand pedestrian space (Sadik-Khan & Solomonow, 2017). This public plaza is roughly the same size as Pearl Street Plaza, but Chelsea Triangle's location at the nexus of trendy neighborhoods in lower Manhattan make this space feel more charismatic and energized than the DUMBO space in the less-busy borough of Brooklyn. Additionally, many more tourists stumble upon this plaza on their paths to and from attractions and hotels along with the locals walking and cycling to offices, providing a composition of plaza users that resembles a mixture of the tourist crowds in Times Square and the relaxed locals in Pearl Street Plaza.

Times Square is often referred to as the "Crossroads of the World", the reputation of which is quite well-known. Though famous as a landmark, the space was historically dominated by car traffic since the early 20th century until the massive redesign project in 2009 changed this power

dynamic. Prior to the redesign, 89% of the surface space between buildings from 43rd to 47th streets belonged to cars, even though 82% of the people passing through Times Square did so on foot (Sadik-Khan & Solomonow, 2017). The small amount of sidewalk space often could not accommodate the 365,000 residents and tourists walking through each day and people on foot often spilled into the streets with busy car traffic. The mismatched allocation of space proved dangerous for vehicle drivers and pedestrians alike

Figure 7 shows a plan view of the street space converted to plaza in mid-2009. Figure 8 shows before-and-after views of the Times Square intervention at Father Duffy Square between W 46th and W 47th Streets.

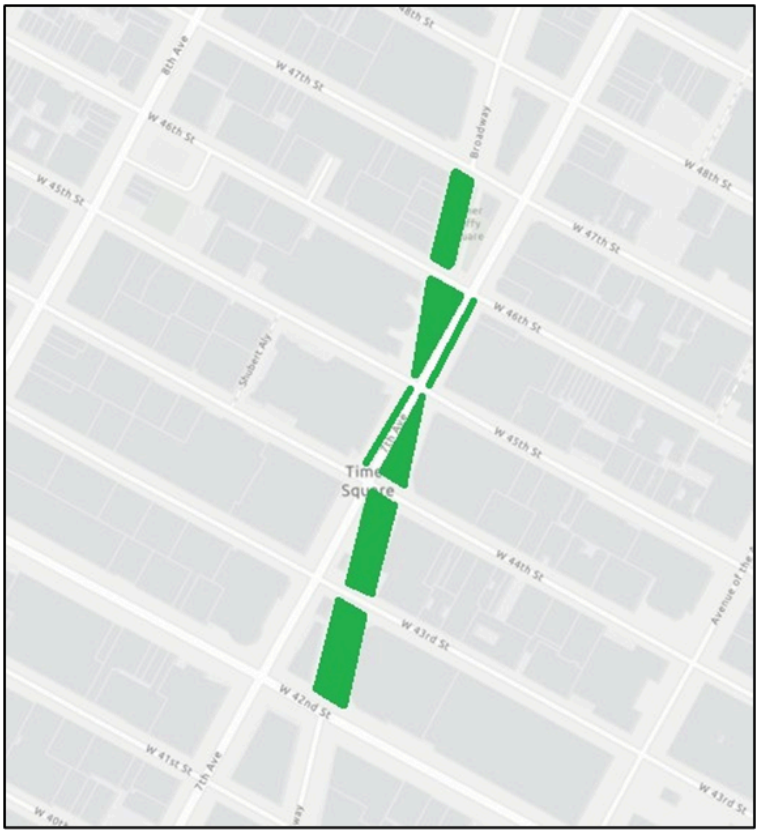

Figure 7. Plan View of Times Square. Four new plazas along an expanded Father Duffy Plaza emerged by closing off Broadway to vehicles in Times Square during the initial intervention of 2009.

Figure 8. Times Square Transformation. Views of Father Duffy Square between W 46th and W 47th before initial intervention (top) and after permanent pedestrianization (bottom) (NYC DOT, n.d.).

The redesign project began with the closure of five blocks of Broadway to cars within Times Square, restoring the street grid disrupted by Broadway's diagonal countergrid path. The reclaimed space was immediately filled in with pedestrian activities, and the closed sections of street space in Times Square have since been resurfaced as pedestrian plazas with curbs separating the grades designated for people and vehicles. Outcomes recorded during follow-up monitoring documented that between 2009 and 2017, injuries caused by car collisions with pedestrians or other vehicles dropped 63%, traffic times through Midtown improved by 7%, and pedestrian counts increased to averages of 480,000 visitors per day (Sadik-Khan & Solomonow, 2017).

The following analytical portion of this chapter examines the three spaces through the lens of all five knowledge bands within the framework.

Political Leadership & Policy Directive:

All three of the case study sites advanced as products of the strong-willed political leadership that was in place in New York in the late 2000s. Mayor Bloomberg, already known for innovation and data-driven approaches to governance, was eager to begin working toward the sustainability goals being codified at that time in PlaNYC; Janette Sadik-Khan was brought on because of her vision for more efficient and safe walking, cycling, and bus transportation for New York's streets (Sadik-Khan & Solomonow, 2017). Bold leadership from an elected official enabled Sadik-Khan to lead the Transportation Department to connect visions to plans, and then execute those projects.

For Pearl Street Plaza, the DUMBO Improvement District (DID) approached NYCDOT to request assistance with transforming this space into a pedestrian plaza (NYC DOT, 2007). Even though it was a local economic group that proposed the transformation, the request was received by a transportation department who was keen to explore such projects as directed by the mayoral administration at the time. NYCDOT was empowered by PlaNYC to engage in a project such as this and was therefore able to respond to the stated needs of the DID. Here is where we see the business interest knowledge band leveraging support from the political leadership knowledge band. Additionally, this is an example of top-down and bottom-up efforts aligning in their vision of transformed public space,

For Chelsea Triangle, Sadik-Khan & Solomonow (2017) note that preparations for the High Line nearby were under way at the time that Chelsea Triangle was transformed; this was being led by

New York's planning department and signaled that the area would likely experience a transformation from a cruising strip to a more upscale district. Resources were already being focused in this area, so it seems logical that NYCDOT was poised to look for additional ways to enhance the pedestrian experience here where Meatpacking District and Chelsea meet. Additionally, they note this project as being one of the first in the series of transformations that tackled street space occupied by moving vehicles, a type of space where the department wasn't sure the success seen in Pearl Street Plaza would translate in the same way. Chelsea Triangle was a major trial run arena for the traffic flow redesign techniques that would ultimately be used in Times Square. In this sense, all three spaces are connected sequentially within this knowledge band, suggesting that political leadership addressing the same problem in multiple spaces at once acts effectively upon public spaces and results in successful reclamation.

For Times Square, Sadik-Khan pitched the idea of closing Broadway in Times Square to Mayor Bloomberg, whose openness to the pedestrianization proposal and interest in outcomes helped begin the process toward implementation (Sadik-Khan & Solomonow, 2017). Another feature of the proposal that won Mayor Bloomberg over was the project's nature as a pilot and subsequent monitoring approach; large-scale experimentation was a method this particular administration encouraged and championed. Bloomberg was advised to delay this potentially divisive project until after the next mayoral election, something he apparently declined; he stated a desire for his commissioners to implement projects with positive outcomes for residents as quickly as possible and not merely to "do the right thing according to the political calendar" (Sadik-Khan & Solomonow, 2017). An article in Forbes Asia on the Times Square pedestrianization project reports that Sadik-Khan was given a lot of free reign from Mayor Bloomberg, as all commissioners in this administration were given "lots of authority" (Adams, 2009, pg. 36).

There is a sense that the 2009 pedestrianization actions in Times Square were enabled in part by past trends of "cleanup" already occurring in that area. There had been efforts for most of the two decades prior to decrease crime in the area and sanitize the space away from the reputation of seediness, especially under the administration of Mayor Giuliani (Lyons, 2005). It's impossible to say whether the 2009 plaza transformation would have occurred in the same way or at the same time had this prior context not been in place, but there was likely a relationship between past sanitization efforts and the combination of political will and public support that helped catalyze Times Square's evolution.

Design of Space & Intervention Approach:

The physical form and layout of a public space is important to evaluate opportunities for changes in use. One common feature of all three case study sites is that they were all underused, triangle-shaped public spaces that resulted from irregularities in the street grid, and the wasted space was naturally given over to the car use that dominated the streets by the mid-20th century. However, out of these irregularities emerged some of the best opportunities to reprogram underused streetscape into something much more beneficial for neighborhood residents and visitors. Extra planning and intervention to achieve human-centered use for such spaces is clearly needed (as people-plazas did not emerge on their own in a more organic fashion), but New York's transformation of these spaces into plazas demonstrates that it is possible.

In Pearl Street Plaza, space-defining thermoplastic paint was used to cordon off the space and signal vehicles to stay outside, and this boundary was completed using large potted saplings and surplus blocks (left over from bridge projects) placed along the periphery (Sadik-Khan & Solomonov, 2017). One factor noted repeatedly as an element for success throughout many projects by Sadik-Khan & Solomonov (2017) is the use of low-cost intervention materials, often

supplies that were already in possession by NYC DOT such as paint, traffic barriers, and planters (which most other DOTs often possess in their supplies arsenals). Vibrant green paint was used to mimic open space and cues to pedestrians that they belong here, and the ambience was finished off with patio tables, chairs, and umbrellas.

The neighborhoods of Chelsea and the Meatpacking District, with their complex and traffic-choked streets, was filled with old-world industry in the mid-20th century. By 2007, it had changed to a vibrant mix of new office space, the Chelsea Market retail complex, and nightlife (Sadik-Khan & Solomonov, 2017). There was an opportunity to create a pedestrian plaza out of the underused space created where 9th Ave splits off into Hudson Ave.

Sadik-Khan's DOT approached this space with apprehension after the apparent initial success of Pearl Street Plaza because of how different things were at 9th Ave & 14th St: this was a "free-for-all Manhattan intersection" rather than a quiet neighborhood parking lot. The street segment was changed from a two-way street with five traffic lanes into a much smaller one-way street with only southbound traffic lanes, freeing up a large triangle of new space (Sadik-Khan & Solomonov, 2017). The triangle was cordoned off with thermoplastic paint and textured gravel.

Sadik-Khan & Solomonow (2017) cite the diagonal path of Broadway, running counter to the grid and creating a wide intersection through Time Square, and a primary reason for the transportation problems of the neighborhood, with 137% more pedestrians being struck by cars in Times Square than in adjacent avenues. Closing down Broadway to cars in Times Square restored the right angles of the traffic grid.

The project of closing Broadway at Times Square was implemented as a pilot with the intent to reassess after six months to ensure that the space was seeing the desired outcomes. Additionally,

the project cost came out to be $1.5 million - quite inexpensive by street construction standards as the implementation utilized only paint, markings, signs, and planters (Sadik-Khan & Solomonow, 2017).

Cultural Climate & Public Opinion:

In DUMBO, NYCDOT worked with community representatives of the DUMBO Improvement District in the summer of 2007 to develop a plan for reprogramming what were parking spaces at the time into a pocket plaza (Sadik-Khan & Solomonov, 2017). The transformation appeared to integrate easily into the neighborhood, with office workers almost immediately observed bringing lunch and beverage items to the shaded tables from nearby cafes and food trucks.

Support of neighborhood groups at 9th Ave & 14th Street, along with an absence of traffic complications, helped establish immediate public acceptance of the changes that resulted in Chelsea Triangle as a new public plaza (Sadik-Khan & Solomonov, 2017). Sadik-Khan notes that people appeared to immediately abandon attachments to the way the street used to be when they saw the new configuration; this suggests that the transformation of the street itself was the greatest catalyst for its approval (Sadik-Khan & Solomonov, 2017).

New Yorkers were skeptical of the ambitious plan to close Broadway in Times Square, and many were enraged that the “urban birthright to the nerve of the center” was apparently being taken away; most of the passionate reactions seemed to be driven by self-interest (Sagalyn, 2023). A July 2009 Quinnipiac University independent poll revealed a simple majority of city residents thought pedestrian plazas in Times Square would be a positive development (Sagalyn, 2023). The pilot nature of the initial intervention on Broadway through Times Square was emphasized by news media such as The Culvert Chronicles and the New York Times that simultaneously

presented potential public and economic benefits (The Culvert Chronicles, 2009), which may have helped convince a skeptical public to at least give this thing a try.

It is possible that how the pedestrianization project was presented to the public by the Bloomberg administration may have helped to sway the public in favor of acceptance of the Times Square redesign. The public relations strategy used by the administration focused on how one of the main goals of the plan was to make car traffic more efficient by restoring the street grid and increasing green light time for drivers; therefore, this plan was packaged as a solution to traffic congestion in addition to creating a safe and pleasant place for people to walk and mingle (Sadik-Khan & Solomonow, 2017). This public relations strategy aimed to convince New Yorkers that the plan was worth a try, communicating this traffic solution through the plan's name of "Green Light for Midtown". There was a three-month time period between announcement of the plan in February 2009 and implementation where public meetings with community boards and theater and property owners were conducted and the department explained how traffic would still be able to move to and through Times Square; Sadik-Khan states that the project would not have been able to proceed without the support of these groups (Sadik-Khan & Solomonow, 2017).

Management & Governance:

For Pearl Street Plaza, the local business improvement district agreed to fund basic maintenance of the plaza including sweeping the space regularly and putting away the tables and chairs every evening (Sadik-Khan & Solomonov, 2017). Although the BID was instrumental in the first place in catalyzing implementation of the plaza, this confirms that willingness of local-level organizations to take on responsibility for maintenance and governance of public spaces factor into success of those spaces.

The business-sponsored Times Square Alliance contracted with a private firm to conduct pedestrian counts in Times Square between 1999 and 2008, revealing overall increasing pedestrian volumes during this period (Sagalyn, 2023). This may have influenced the Times Square Alliance to be more open to the bold redesign that was later implemented. More broadly, it signals that this local-level organization was well-positioned to take on some of the responsibility for management and governance identified as crucial in the framework.

Sagalyn (2023) claims that, during the planning for Broadway's closure to vehicles in Times Square, there was no thought given to how the pedestrian plazas would be used, how they would be managed, and who would be tasked to manage it. This conflicts with Sadik-Khan's extensive account of the leadup to the closures, where she describes the thought processes and the pursuit of city sustainability goals that went into reclaiming this space for people. Sadik-Khan also speaks to the collaboration with the leadership of Times Square Alliance, who pledged resources toward upkeep of the new space well before the initial interventions.

Economic Forces & Business Interests:

As mentioned previously, the DUMBO Improvement District (DID) approached NYCDOT to ask for help in turning the parking triangle into a pedestrian space that would later be called Pearl Street Plaza (NYC DOT, 2007). This partnership enlisted the help of the Brooklyn Botanic Garden to transform the space through green-painted asphalt and flower-filled planters.

There is an elaborate economic history in the proximity of Chelsea Triangle prior to implementation, and there were a variety of businesses (including nightlife) in the area at the time; these businesses were apparently neutral or slightly welcoming of the pedestrianization effort to create Chelsea Triangle. There is evidence that the plaza played a role in further

attracting businesses to the area; an Apple Store and a Starbucks Reserve moved into the retail spaces on 9th Ave, directly adjacent to the new plaza, soon after Chelsea Triangle opened.

The business profile of Times Square in 2008 was made up of a mix of large retailers, trinket shops, and hotels, a change from the prevalent adult entertainment and "legendary seediness" of the decades prior (Sadik-Khan & Solomonow, 2017). Sagalyn (2023) describes a timeline of events that may have planted the seeds for the 2009 transformation of Times Square. A business improvement district known as the 34th Street Partnership, representing hundreds of area businesses, reached a deal with the city Department of Parks in 1996 to transform two traffic islands in Broadway between 32nd and 34th streets into new parks. Just a few years later in 1999, the city DOT and business groups that had opposed earlier traffic plans reached an agreement for a traffic reconfigurement plan for Herald Square that would include widening sidewalks, adding crosswalks, and eliminating a traffic lane. This is seen as a testing ground for what NYCDOT would try in Times Square a decade later (Sagalyn, 2023). This suggests that past proactive efforts of business improvement districts played a major role in establishing an atmosphere that accommodated Time Square's transformation.

There is some criticism of the "new" Times Square that claims that pedestrianization of the space exacerbates tensions between tourists and New Yorkers, causing it to be more focused in the present day on tourist interests rather than being relevant in the day-to-day lives of those who live and work there (Sagalyn, 2023). However, nostalgia for the way Times Square "used to be" often harkens back to a time when the same parties lamenting change in the space in 2009 were complaining about unsavory conditions due to prostitution and seediness. Therefore, opposition related to a sense of preservation may be expected for this simultaneously infamous and beloved public space, no matter how it continues to evolve in a dynamic city like New York.

It is clear that the forces within each of the five knowledge bands may have had a relationship with the transformations of the three New York case study sites. The transformative potential of lessons learned from NYC DOT's efforts were already being recognized elsewhere soon after the initial interventions: the Toronto Star ran a story excitedly lauding Sadik-Khan and her transformation of Pearl Street Plaza and hinting about similar opportunities in Toronto (Hume, 2009). Later on, the transformed public spaces of New York began to inspire other cities not long after the permanent Times Square plazas were completed. A street safety community organization in Ottawa hosted Sadik-Khan to speak at an event in that city aiming to inspire residents through hearing about the success of the interventions in New York (Nash, 2016).

VII. Analysis of Outcomes in Case Study Locations

This chapter synthesizes observations collected at each site into documentation of the current status of each study site. Current physical form, design characteristics, economic activities, user patterns and behaviors, and evidence of management are noted. Transformations since initial implementation across all of these topics within the neighborhood context are documented.

Reconnaissance observations were collected during on-site visits to each of the case study areas in April 2025. Each of the three sites was observed for an hour during a weekday late morning and for an hour during a weekday mid-afternoon. The following observations were documented for each study site:

1. **Physical form:** the current permanent state of the public space. Physical design features such as seating, places to gather, and separation from automobility.
2. **Management:** The appearance of maintenance workers and other signs of management. Cleanliness and level of organization was observed and documented.

3. **Apparent use:** All types of use (formal and informal) were documented to include mobile, stationary uses, and interactions. Differences between professional and residential persons were conjectured. Perceived attitudes of users were documented. Whether the space appears to be used as designed was considered. I also looked for signs of formal and informal programming.
4. **Signs of economic activity:** Presence of vendors, retail and restaurants apparent within the immediate vicinity, and food/beverage items appearing to be carry-out from nearby businesses.

A. Pearl Street Plaza

The plaza is located on the north side of Brooklyn Community District 2 in the DUMBO neighborhood. Neighborhood profile data are available from NYU Furman Center with various time iterations from 2000-2023. The racial and ethnic compositions of this District have changed since 2000: the black population has decreased significantly while the white population has increased significantly; Asian and Hispanic populations have been more stable (NYU Furman Center, n.d.). These shifts in racial composition were taking place from 2000-2006, prior to implementation of the plaza, suggesting gentrification trends already underway in this area prior to transformation of the plaza.

Rent burden (paying +35% of income on housing) of the district in 2014-2018 was 29.9% (NYC Planning, n.d.). The neighborhood has been changing economically since 2000, with median household income rising steadily for renters and homeowners, poverty rates decreasing steadily, labor force participation rates rising since 2006, and overall reduction of unemployment in 2023 compared to 2000 (NYU Furman Center, n.d.). The proportion of high-earning households

within the District's population has increased when comparing 2000 to 2018-2022, while the proportion of low-and moderate-income households in the population decreased in that time. Median rent has been rising in this District since 2006 at a faster rate compared with Brooklyn and Citywide rates. The shifts in demographics and economic conditions for residents since 2000 suggest that the neighborhood may be experiencing gentrification. All of these trends were already in motion by the time of the plaza proposal and implementation in 2007 and likely contributed to its transformation.

The current land use designations around Pearl Street Plaza are primarily "Mixed Residential & Commercial", "Commercial & Office", and "Transportation & Utility", with other less common land use designations nearby including "Industrial & Manufacturing" and "1&2 Family" (NYC Planning, n.d.). The plaza itself sits on a parcel that appears to have no land use designation. The plaza is zoned as M1-4/R8A while most of the adjacent parcels are also dominated by manufacturing use and zoned as M1-2/ R8.

Businesses near the plaza showed a 172% increase in sales after installation compared to 18% growth across Brooklyn (Sadik-Khan & Solomonow, 2017). An article run in the New York Times in June 2013 showed before-and-after overhead views of Pearl Street Plaza and stated that it was a coalition of local merchants and community leaders that led the effort to create this space by reaching out to NYCDOT (Kimmelman, 2013). It is clear that ongoing public opinion views this plaza favorably.

I visited what Janette Sadik-Khan and NYCDOT referred to in 2007 as Pearl Street Plaza on Tuesday, 4/29/2025 from 5:30-6:30p and on Wednesday, 4/30/2025 from 11:30a-12:30p. Figure 9 shows a plan view of the expanded Pearl Street Plaza, while Figure 10 shows an at-grade view of the expanded plaza in April 2025.

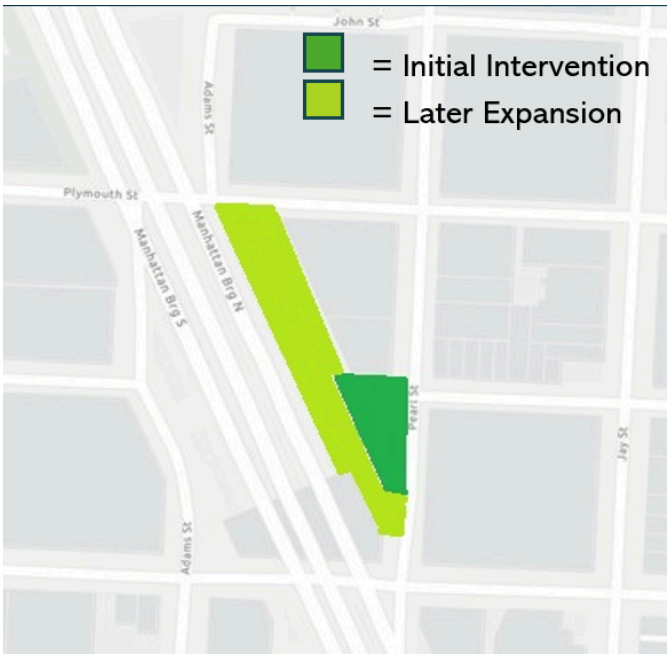

Figure 9. Plan View of Pearl Street Plaza Expansion. Pearl Street plaza's initial intervention (2007) and later expansion (2023-2024) create a large pedestrian space connected to the DUMBO Archway.

Figure 10. Expanded Pearl Street Plaza in April 2025. This plaza is now mostly referred to as DUMBO Archway Plaza, and is the most tucked-away of the three case study sites but still manages to draw diverse groups of locals and tourists.

When I arrived at the plaza in the late afternoon, I noticed that the space had been rebranded as "DUMBO Archway Plaza". This change is reflected on Google Maps as well as on event signs within the space. However, NYCDOT's website on the Plaza Program still has this space listed as being named Pearl Street Plaza (NYC DOT, n.d), so the public space is still referred to by this name for the purposes of this study. The most notable design upgrade since the initial intervention in 2007 is the expansion of the plaza west to the wall of the overhead Manhattan Bridge. The former street on the west side of the plaza going northwest, Anchorage Place, has been completely removed and covered over with the same brick patterned paving as the rest of the plaza. The street was closed to cars in 2023, with the reclaimed space added to the finished plaza that opened in 2024 (Gannon, 2024); this plaza looked more or less the same for 15 years after initial implementation. The plaza is now fully pedestrianized to connect with the pedestrian walkway through the DUMBO Archway, itself having been closed to car traffic since 2009. The plaza now feels like a protected enclave from the surprisingly auto-dominated streets that surround this location; indeed, Pearl Street and most of the other surrounding streets observed during both the morning and afternoon time slots were backed up with car traffic. There is a construction zone beginning north of the Archway portal on what used to be Anchorage Pl that is blocked from view, suggesting that the pedestrian area may be expanded north toward Plymouth St.

There is a feeling of community and placemaking here in DUMBO Archway Plaza, beyond the rebranding that signals embrace from the neighborhood. In addition to the overall redesign of the space, a variety of seating options exist to include tables and chairs (complete with umbrellas), picnic tables at the north end, Adirondack chairs at the south end, marble blocks that act as

barriers from the car traffic on Pearl Street, and two large, artful, multi-tiered wooden structures. Along with the picnic tables under the Archway, this variety of options for sitting in the space communicates an invitation for anyone passing through to stay and reflect. Many different groups and solitary folks were observed walking, sitting, and standing in the space, including a large group of teenagers observed hanging out and chattering happily during the afternoon visit hour. Dinner crowds of millenials, young families with small children, the occasional cyclist or jogger, and urban explorers/tourists apparently seeing this space for the first time as they emerge from the Archway, all make frequent appearances. While there is a wide age range among plaza users, the average age of users in this public space is noticeably younger than that of users in Chelsea Triangle. This space seems to function well as a "doorstep" public space, referring to a smaller public plaza that is comfortably accessed by residents and workers of the neighborhood. Users in this space seem to be unconcerned with the frequent roar of MTA trains passing overhead on Manhattan Bridge.

Multiple signs promote neighborhood events put on by the Dumbo Business Improvement District and a large neon sign with letters that spell "DUMBO" are situated under the Archway where urban wanderers may snap pictures. Even the trash cans are printed with "www.dumbo.nyc". A sanitation worker with "The Doe Fund" printed on their jacket was seen emptying the trash and collecting trash pieces from around the plaza. The businesses across Pearl Street are all small retail and restaurants, and the building on the plaza is fairly nondescript with little indication of what uses it contains. Upon closer inspection of the wooden sitting structures, the anti-skateboard grinding knobs on the edges turn out to be letters spelling "DUMBO".

Across Pearl Street to the east of the plaza, the first floor of the older residential building is full of small shops and restaurants, including a barbershop, a pizza shop, a burger joint, a cigar shop,

and a store for window shades. The burger restaurant has a rudimentary plywood parklet occupying some curbside space while the rest of the curb is taken up by parked cars. I observed occasional people carrying retail bags, though this was much less frequent than in Times Square or Chelsea Triangle.

There were some notable observations collected upon visiting DUMBO Archway Plaza during the late morning. The large building at the south of the plaza that appears to be utility or infrastructure related has its garage door standing open, and NYCDOT vehicles along with construction materials are arranged inside. Many office workers, shop workers, and tourists stroll in every direction throughout the plaza, mostly through the Archway, and several apparent office workers and wandering tourists take breaks to sit and enjoy lunch at the tables and on the wooden structures. Even an older person who appears to be filming talking for social media is making use of a table, despite the near-constant cacophony of overhead train noise. Someone who appears to be a security guard makes their way through the space. I notice that many of the chairs at the tables and the Adirondack chairs are arranged neatly as if someone went through earlier to straighten up the furniture; however, unlike Chelsea Triangle, the tables overall seem a bit dirty and were not cleaned since I was there during the day prior.

B. Chelsea Triangle

Chelsea Triangle is located on the southern edge of Manhattan Community District 4, bordering on Manhattan Community District 2 (NYC Planning, n.d.). Because the space sits near the border of two districts, neighborhood profiles for both from NYU Furman Center are discussed here as trends in each may be important for evaluating Chelsea Triangle; trends within these two districts appear to be similar. Both Districts have seen slightly decreased percentages of white

residents while other racial groups have increased slightly (NYU Furman Center, n.d.). The proportion of high earning households within the population have increased sharply, while low- and middle-incomes have decreased (NYU Furman Center, n.d.)

While median rents in both of these districts are higher than Manhattan and citywide median rents, rates of increase in both are similar to those of borough and citywide trends. I interpret these population and economic trends as indicating that there is a lower risk of gentrification in the neighborhoods surrounding Chelsea Triangle compared to Pearl Street Plaza's district.

The parcel is zoned as M 1-5 and surrounding blocks are primarily zoned as C6, R8, and R6. The space itself does not have an assigned land use designation. Adjacent blocks have land use designations of primarily "Commercial & Office", "Mixed Residential & Commercial", and "Multifamily Walk-up", with less frequent nearby designations including "Public Facilities & Institutions", "Multifamily Elevator" and "1&2 Family".

The Meatpacking Improvement Association (MPIA) was created in 2010 "to revitalize, redesign and manage the areas, including NYC DOT public plazas, and to provide sanitation and landscaping services" (City Planning Commission, 2015). The MPIA established the Meatpacking Area BID in 2015, and contracts with NYC DOT for management of public plazas were transferred to this new organization from MPIA and The Meatpacking Improvement Company. The BID remains in contract with NYC DOT for care, maintenance, and management of plazas within BID boundaries, including Chelsea Triangle, through programs such as the Sanitation Program, Beautification Services, and Economic Development Services (City Planning Commission, 2015).

Chelsea Triangle is listed as being a part of Gansevort Plaza on NYCDOT's Plaza Program website (NYC DOT, n.d.). I visited Chelsea Triangle twice on Tuesday, 4/29/25 to observe physical designs and user activities, once in the morning from 10-11am and once in the afternoon from 4-5pm. Figure 11 shows the street space covered in the initial intervention as well as the expansion in 2017-2018. The plaza has developed to be a remarkably pleasant pedestrianized space in the present day, shown in Figure 12 (April 2025).

Figure 11. Plan View of Chelsea Triangle Expansion. The space reclaimed for the initial intervention (2007) and the later expansion (2017-2018) create a pedestrian refuge from the busy traffic of Chelsea and the Meatpacking District.

Figure 12. Expanded Chelsea Triangle in April 2025. Views looking south (left) and north (right) show an inviting space that beckons some tourists and seemingly more locals to enjoy the calm Manhattan plaza.

The most significant design update for pedestrian use for this space is that 9th Ave has been closed to vehicular traffic. The north and south ends of this former vehicle right-of-way are blocked off with large pots, temporary planters, and event barriers, giving former 9th Ave a sense of temporary pedestrian use despite the presence of chairs and tables. The curbs and grade separation remain between the former car right-of-way and both the plaza and legacy sidewalk. The main plaza of Chelsea Triangle was redesigned in 2017-2018 to resemble what the space looks like today, opening back up again for pedestrian use in 2018. Additionally, the closure of 9th Ave adjacent to the plaza appears to have taken place during the COVID-19 pandemic, starting with traffic-calming features in 2021 such as parklets and planters that still accommodated car movement, and resulting in 2022 in a setup similar to present conditions. The city appeared to be invested in the long-term vibrancy of the main plaza, but the closure of 9th Ave seems to have been catalyzed by the pandemic.

The initial pedestrian plaza is now separated from the remaining vehicle traffic lanes by large, permanent planter boxes with well-developed landscaping. Additionally, bioswale features were

added to the legacy sidewalk of 9th Ave during the 2017-2018 redesign, and trees were planted along the west side of the main plaza; both of these types of features lining 9th Ave were likely implemented to create some sense of separation from the car traffic that would continue there, but inadvertently now provide pleasant shading and public space decoration for the pedestrians that now use a Chelsea Triangle that is continuously connected to the sidewalk of 9th Ave. However, the features closing off former 9th Ave are more temporary in nature, giving the impression that this pedestrianized space is flexible for use. In addition to the chairs, tables, and umbrellas arranged in the main plaza and in the former 9th Ave right-of-way, there are "bar bench" structures that add artful variety to the range of sitting options available in this area. The paving of the entire current pedestrian plaza area is a variety of graystone brick that continues south across W14th and into the adjacent pedestrianized sidewalk point; this paving design also continues west in on W 14th St. This design choice provides a sense of continuity with the historic character of the Meatpacking District as well as a place-making signal to pedestrians and motorists alike that the community and city hold a sense of pride over this space.

Across W 14th St on the south side of Chelsea Triangle, the sidewalk point created by the block between Hudson St and 9th Ave has been expanded to shorten the crosswalk distance to the plaza and has been designed to be visually complementary. It is clear that some amount of street space reclamation for pedestrians occurred on this street segment in tandem with the original 2007 plaza implementation, and complementary design occurred simultaneously with the main plaza in 2017-2018 (NYC DOT, n.d.). These actions suggest a "spillover effect" where the original plaza seemed to encourage the neighborhood to reclaim additional street space in order to create a series of cohesive, adjacent pedestrian-focused spaces.

Upon arriving at the plaza in the morning, the chairs are arranged neatly around the tables and they all appear to be clean; the ground of the plaza seems to be similarly tidy, free of trash and debris. This suggests that some level of cleaning maintenance is occurring in this space. Additionally, a sanitation worker is present during both the morning and afternoon observation hours, collecting from the waste bins. This person is wearing the "Meatpacking" brand on their uniform that matches the one present on the event barriers closing off both ends of former 9th Ave. The NYC DOT website on the Plaza Program confirms that the plaza's current partner is the Meatpacking Improvement District (NYC DOT, n.d).

This plaza seems to be well-utilized for several uses, including for the relaxation and urban reflection that was stated as an outcome goal of the intervention. Many people who appear to be local, from a variety of age groups, were observed enjoying food and beverage items while seated at the tables and the bar structure, chatting with others, and even seeming to enjoy the pleasant morning sun. In particular, I noticed a greater presence of elderly people, some with companions but many solitary. A great number of people with backpacks and earbuds appeared to use the plaza as a commute route, with many walkers continuing their path northward from Hudson St or heading in the opposite direction (a walking path that would never have been possible when this space was overrun by car traffic). Many dogs on leashes were seen walking with their humans, a sure sign that area residents use the plaza for daily life. There were some groups of what appeared to be tourists walking through the plaza, some of whom even seemed to be surprised by the presence of the plaza; I noticed urban explorers walking on east-west paths that would stop at the south end of Chelsea Triangle, their mouths agape, and gesture to the space while turning to talk to their companions. They would proceed to wander into the space and perhaps even pose for a picture. Despite the occasional obvious tourists, a majority of the

clientele of this plaza appears to be residents from nearby. Toward the end of this observation hour, pamphlet distributors offering Spanish language bible classes set up a small booth.

Upon arriving in the late afternoon, I noticed that most of the crafts vendors setting up when I arrived in the morning are still there, as are most of the food vendors on the north and south ends of the plaza. There is a jazz music duo set up at the southeast corner of the plaza among the tables and chairs, and many onlookers have their chairs turned toward the performers. There are noticeably more dogs on leashes walking with their humans than there were during the morning. A widely-varied age range skewing older remains prominent here, and the proportion of tourists seems to have increased compared to the morning observation time. People coming to sit in the plaza seem more frequent than those simply wandering through. A sanitation worker with "Meatpacking" visible on their uniform is again observed emptying trash cans and collecting trash throughout the plaza with a broom and dustpan.

C. Times Square

Times Square is located in Manhattan Community District 5. According to NYU Furman Center, proportions of black and white residents decreased between 2000 and 2022, with proportions of Hispanic and Asian residents increasing during that time. The proportion of high-earning households have increased slightly, middle-income earners decreased more sharply while lower-income groups decreased less sharply (NYU Furman Center, n.d.). Median rents are slightly above borough and citywide levels but overall have increased at similar rates, aside from a sharp peak in 2020.

Most of the space in Times Square and the surrounding blocks is zoned as C6, with a portion of Times Square itself zoned as Park (NYC Planning, n.d.). The vast majority of blocks surrounding

Times Square have land use designations of “Commercial & Office”, with infrequent nearby parcels having designations of “Mixed Residential & Commercial” and “Public Facilities & Institutions” (NYC Planning, n.d.).

News outlets continued to cover Times Square during the years following the initial 2009 closure. In 2013, The Epoch Times took a neutral stance on the issue, detailing sentiments in support of the project as quoted by Mayor Bloomberg and Sadik-Khan as well as presenting Mayor-Elect de Blasio’s skepticism (Skorbach, 2013). More importantly, this article reported on the six month tracking of car flow using taxi GPS units, presenting data disproving the assumption that these plazas would make traffic congestion worse. One article in New York Magazine acknowledged the decision by Sadik-Khan to “take back turf for foot traffic first and worry about piazza-tizing later” as a triumph of urbanism that instantly changed the power relationship between people in and out of cars (Davidson, 2009). This article also speculated that the informality would not last and that the author saw permanent amenities as inevitable, perhaps signaling that the sanitization efforts of Times Square mentioned in the previous chapter were effective in fostering the view that a “cleaner” Times Square was more desirable. The permanent reconstruction to create the plazas in Times Square that are visible today began in late 2013, with NYCDOT first cutting the ribbon on the plaza between W 42nd and W 43rd streets in December 2013.

Even though there were critics about how the new Times Square was being used in the years following transformation (costumed characters and topless women were evidently perceived as giving the place and “cheap carnivality”, and reports claimed that excessive panhandling and harassing occurred there), ongoing public support for retaining the newfound pedestrian benefits of the space appears to be a powerful force (Sagalyn, 2023). Mayor de Blasio discussed the idea

of tearing up the plaza with Police Commissioner Bill Bratton in 2015, who told a local radio station that his preference was to put the plaza back the way it was; the backlash was immediate with civic groups, planners, and transportation advocacy groups expressing alarm and pointing to the reduction of pedestrian overcrowding and injuries as a result of the transformation (Sagalyn, 2023). Figure 13 provides a plan view of the initial intervention at Times Square in 2009 to the later additional street spaces at the north and south ends of the line of plazas in 2024. Figure 14 shows Times Square as it appears in April 2025.

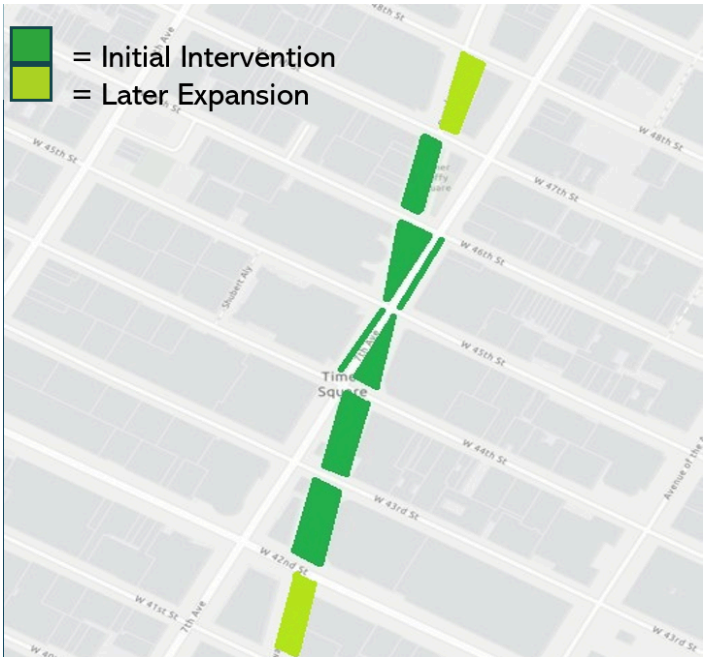

Figure 13. Plan View of Expanded Times Square. Space reclaimed in Times Square during the initial intervention in mid-2009 along with space closed to motor vehicles in the expansion of 2024.

Figure 14. Times Square in April 2025. A north-facing view captures the masses enjoying the plaza of Times Square in April 2025 between W 45th and W 46th Streets. The boundary of what used to be the sidewalk running along Broadway is marked by the white line.

I visited Times Square and observed urban form (including architecture) and activities from 4-5 pm on a Monday afternoon (4/28/25) and from 10-11 am on a Wednesday morning (4/30/25). W 46th and W 47th Streets, the entire area has been designed to be seamless with the rest of the legacy plaza that existed before the interventions. The former curbs have been eliminated, the former street has been elevated, and the same stonework paving pattern is present throughout this plaza segment as well as the rest of the segments Throughout Times Square. Permanent bollards delineate the pedestrian space for the majority of the square, and sometimes provide separation between the legacy sidewalk and the new pedestrian area. A variety of seating options are present in Times Square. In addition to the red tables and chairs that appeared soon after the closure of Broadway, there are now large permanent stone blocks placed in locations that frame each plaza segment and provide places to sit and take in the sights. Between W 46th and W 47th, the blocks are arranged to complement the red stairs, creating a sense of a “town square” at these

crossroads of the world. Signs delineate areas for pedestrian flow around the peripheries of each plaza, encouraging users not to stop in these zones.

Broadway running north of W 47th Street has experienced its own redesign that was not an evident part of the original intervention in 2009. Most of the street has been closed to car traffic with only one southbound lane of car traffic remaining. There are large gates on either of the north-south ends of the pedestrian space, with large planters and concrete barriers separating the pedestrian area from the remaining traffic right-of-way. This space seems less permanent than the plazas of Times Square, with differing curb grades being retained in Broadway north of W 47th. However, this continuation of what appears to be pedestrian prioritization signals a goal of expanding the benefits of the original intervention north along Broadway. Something similar continues on the other end of Times Square south of W 42nd street. The expanding reach of pedestrian-focused design changes along Broadway suggests that the new pedestrian realm of Times Square is not only successful, but more such space is in demand.

As is to be expected in Times Square, there are hordes of what appear to be tourists alongside apparent locals commuting to or from their jobs at offices and restaurants. There were especially large numbers of people between W 46th and W 47th Streets in Father Duffy Square, where the red stairs, statues, permanent planters, and stone blocks are located. Many people were standing and admiring the sites, taking pictures, and apparently absorbing the ambience. The red steps are nearly full of onlookers, while some people in the plaza are enjoying takeaway food and beverages. I noticed overall that there were not as many people enjoying food and beverages or carrying retail bags as I expected there to be. Many costumed performers and pamphlet distributors attempt to wave down passersby for photo opportunities or activity promotions, and a fair number of tourists seem to stop and engage. A greater proportion of the people walking in

the pedestrian flow zones appear to be local commuters. There is a large group of people gathered in protest of wrongfully-deported individuals.

The scene in other blocks of Times Square is similar but with minor differences. Most design elements are the same in the block between W 45th and W 46th, but here there is a semi-permanent stage structure nestled between some of the sitting blocks. Many people continue to stand and mill about, but people are talking to each other more here or staring at their phones more than they are taking in the sights. A cheering crowd gathers around some street performers showcasing various circus acrobatics, and the performers are actively involving onlookers into their acts. Here I notice that a sanitation worker with a broom and bin is picking up small pieces of trash, though this individual bears no organizational identification on their clothing or equipment. Between W 44th and W 45th Streets, most of the block barriers are shaped with slants at the top, making it possible to sit on (slightly less comfortably) but impossible to lay on. Here a southbound bike lane, elevated above street level but still grade separated to sit lower than the plaza, provides additional buffering with the car traffic of 7th Ave. There are far fewer people existing in this section of Times Square, with most walking through the space and those who are sitting or standing are looking at their phones.

Upon arriving at Times Square in the morning, there is a high level of energy to the space that differs slightly from the evening atmosphere. Pamphlet distributors and costumed performers are more numerous, and food vendors selling breakfast items along with apparel vendors are present. A security guard is present, along with a sanitation worker with “Times Square Alliance” visible on their jacket. The overall age of the tourist groups includes noticeably more children and elderly; these are mixed among solitary people apparently commuting on foot, and the crowd at large is making less use of sitting options by choosing to stand or walk slowly. A large Hands

Off protest calling for “US out of Africa” is gathered by the red stairs (themselves closed off with temporary barriers).

VIII. Discussion: Lessons for Planning

A framework of five knowledge bands has been presented, along with global examples of how these forces catalyze the evolution of public space. The next step examined how these knowledge bands influenced the transformation in the three New York case studies and continue to shape their ongoing evolution today. In this chapter, I summarize lessons learned from using the framework of knowledge bands to explore the three case studies.

Band 1 - Political Leadership & Policy Directive: New York reveals that the backing of elected officials who won’t shy away from enabling authority-driven strategies toward public space are effective in creating the lasting outcomes observed in the case study sites. The strong political will of the Bloomberg Administration was undoubtedly instrumental in driving the transformation of the three spaces forward, and it’s doubtful that NYCDOT could have achieved what it did in street space reclamation without Sadik-Khan leading the charge. This knowledge band functioning to move the needle on reimagining New York’s public spaces may be viewed as a top-down method by some, but in the case of New York it demonstrates that a deliberate expert driven vision with public buy in strategies is an effective approach in moving the project along and enhancing the pedestrian experience in the city even as previous attempts at pedestrianization had been less successful in the decades prior. City leaders during 2007-2013 not only worked to enable pilot projects to test out new uses of the spaces, but they were willing to put in the effort to monitor the immediate outcomes of the initial interventions before

committing to the transformation that are enjoyed today, as is true with Times Square. In the cases of Pearl Street Plaza and Chelsea Triangle, the more permanent transformations of the plazas were completed five years after Bloomberg and Sadik-Khan left office; this demonstrates that an openness to take risks (and get started without waiting for the planets to align) to try out new uses of car-dominated public spaces may lead to immense public benefit in the form of public plazas. It's also revealed that municipal willingness to respond to the public and neighborhood-level organizations is crucial for creating successful public plazas where there were once only cars. Overcoming the status quo of car dominance is a complicated challenge, and it seems that political leadership willing to take risks for a vision is critical in achieving what New York was able to with its public spaces.

Those interested in redesigning public spaces in their city in ways that enhance the pedestrian experience may find success through gaining allies among the public officials in those cities. Such elected officials possess the influence and access to resources needed to enable projects perhaps perceived as risky, and may be able to engage with the public and business community in ways that win support for pedestrianization projects.

Band 2 - Design of Space & Intervention Approach: This band is difficult to evaluate because it acts as a force upon public space at all points in time: past, present, and future. The historical context and arrangement in its respective urban environment is a likely determinant of whether a public space evolves at all. The manner in which planners and city leaders approach implementing changes as well as how well the immediate design matches the needs of the community may play pivotal roles in initial acceptance of public spaces. Finally, long-term design choices and strong monitoring regiments post-implementation may ultimately determine how the transformed plaza will perform.

The prevailing takeaway from analyzing how the knowledge band of project design and approach is the effectiveness of iterative, pilot approaches and human-centered design during New York's street space interventions. Another common feature across all three of the case study sites was the use of simple materials to delineate the new boundaries for people and cars. Also, sending the clear message to the public that this was a temporary pilot seemed to lessen the intensity of pushback; at the same time, arranging the new space to be inviting to residents and visitors was important if there was going to be any hope for permanent transformation. Furthermore, including an extensive monitoring program with the interventions at Times Square sent the message that the DOT wanted to understand immediate outcomes from the transformation.

There are extensive studies into the behavior and preferences of sidewalk and plaza users in New York, so it's not surprising that NYC DOT knew how to make the new plazas inviting in simple ways. The most popular plazas tend to have considerably more sitting space than less well-used ones (even concrete ledges function just as well for sitting as deliberately-placed wooden benches; maximizing the "sitability" of inherent features in a public space is a worthwhile effort) (Whyte, 1980). However, placing seating on the wrong location within a public space or designing it wrong may result in underused street furniture. Whyte (1980) observed movable seating such as free-standing chairs as garnering the most use out of people occupying public plazas in NYC; Sadik-Khan's decision to provide free-standing chairs during the rollout of the Broadway-adjacent plazas in 2009 seemed to have resulted in outcomes aligning with Whyte's observations. This decision may have contributed to the public acceptance enjoyed by the transformation of the three case study sites.

As it is important to acknowledge patterns among the three case study sites, I must again acknowledge the common feature between all three: irregularity in relation to the street grid that caused traffic confusion and congestion when unfettered car traffic was allowed to dominate all streets. Each space was underused in its own way, Times Square and Chelsea Triangle being a congested and unsafe mess because of the disorderly convergence of major traffic thoroughfares while Pearl Street Plaza was nothing more than a parking lot. It seems that, at a time when the prevailing assumption in the US continues to be that the street belongs to cars, streets running diagonal against the grid suffer even more from ineffective use. For more charismatic spaces like Times Square and Chelsea Triangle, community members familiar with the disarray may have been more open to doing something to address the chaos.

My review of the three case study sites and academic literature on public space transformation reveal valuable lessons for future management of the commons. Iterative approaches (beginning with pilot interventions for larger spaces like Times Square) make room for experimentation in the street and give the public time to understand what they want out of their city's public spaces. Departments of Transportation must be willing to allot resources to phased interventions where there may be some amount of trial and error. Designs that create an inviting atmosphere both at initial intervention and in subsequent improvements communicate a priority for people-centered spaces. Programs that continually monitor outcomes and respond to changing demands on the new spaces protect longevity and discourage attempts to undo the transformations in the future.

Band 3 - Cultural Climate & Public Opinion: It is clear from the literature review that there are several practices related to public engagement that appear to be effective in winning over support for transforming streets to pedestrianized plazas. Before discussing these, I cannot ignore the influence of underlying culture and historical attitudes toward which uses "belong" in the

streets and which belong on their periphery. Regional contexts and mobility attitudes appear to be powerful in shaping outcomes in public spaces, with cities possessing longer pre-automobile histories and more socially-minded populations seeming to be more open to reclaiming their street space for pedestrian use. It's even an acceptable point that New York's relatively more extensive history of pre-20th century development factored into producing a population used to living car-free or car-light and more accustomed to walking and taking transit than cities without pedestrian culture and transit infrastructure. . Therefore, New York was likely positioned better than most US cities to embrace pedestrianization of streets into plazas.

Given the acknowledgement that a community's culture heavily influences outcomes in public spaces, there are patterns that emerge from the literature related to engaging with and involving the public in discussions around street redesigns. One common approach that seems especially successful in the cases from New York is providing a scenario where people have a chance to experience the positive benefits of a pedestrianization project. Timing is important here, as rapid and sustained adoption of a new space by pedestrians may send a powerful message to planners and city officials that the demand for such space exists in the population. Additionally, support for maintaining and even enhancing new pedestrianized spaces may be garnered upon initial intervention (as was true for the case study sites), along with more positive attitudes toward potential future pedestrianization projects. Other cities have found success in involving the public closely in brainstorming designs and approaches for street experiments, fostering a sense of stewardship and the feeling that the space belongs to the community.

Band 4 - Management & Governance: The patterns that emerged from the literature related to management and governance of transformed public spaces were also observed to be present in the case study sites. Partnering with community-oriented organizations such as BIDs to manage

and maintain the new spaces seemed to contribute to the success of the New York case studies, similar to other cases reviewed in the literature. This band appears to interact closely with public opinion and business interests due to management often being led by business-related organizations that usually are more connected and familiar with resident populations. Therefore, it is likely that public-private partnerships created to manage public spaces tap into the power of multiple knowledge bands simultaneously, perhaps making the new space more likely to succeed in long-term pedestrianization goals.

It is clear that this knowledge band acts upon public space intensely when investigating examples of US pedestrian malls as either thriving or suffering due to the respective presence or lack of management organizations. What's even more clear is that the management oversight ultimately must be driven by city governments, or they risk sending signals of neglect to the residents they serve. Cities planning to intervene in their streets and reclaim space for pedestrians would do well to establish cooperative relationships with local-level organizations such as BIDs, and ensure that resources in city budgets allow for effective management and governance.

Band 5 - Economic Forces & Business Interests: The fifth and final knowledge band proves formidable in influencing the outcomes of public space interventions. As mentioned in the previous section, many organizations well-positioned to facilitate management of public spaces are business-oriented nonprofits such as BIDs. However, negative impacts on businesses is a well-rehearsed refrain when engaging with economic interests and the public at large to discuss changes to how people use their streets. Overcoming the opposition rallied from this argument alone is challenging even in scenarios where businesses stand to benefit from increased pedestrian traffic. Related to this is the influence of strong reactions to initial economic downturns following an intervention that result in backtracking the project and opening the street

back up to cars. Examples emerged from the literature of revenue-generating proposals winning political support (Amos, 2020), but such projects must be careful to design the space for an inviting pedestrian experience in order to realize those economic benefits.

Critical mass of people seems to be crucial for helping businesses to thrive (Amos, 2020) and for making vibrant, successful public spaces (Gehl, 2010). This is relevant for Times Square and other US public spaces with the characteristics of a pedestrian mall, and may also be valuable insight for smaller spaces such as Chelsea Triangle and Pearl Street Plaza.

The PlaNYC 2024 Progress Report notes plaza and shared streets projects completed by NYC DOT in 2023 between 25th and 32nd streets related to Complete Broadway Vision, along with plans presented in 2024 for an additional plaza and shared streets further south on Broadway toward Union Square. This same report notes that these and other projects to transform streets and public spaces occur under the leadership of the Chief Public Realm Officer (The City of New York, 2024). The report states that projects to make cycling and walking more safe and accessible are implemented as capital improvement projects in partnership with the Department of Design and Construction (DDC) and the Department of Environmental Protection (DEP) (The City of New York, 2024). These developments confirm the continuation of efforts similar to the three case studies, suggesting that these initial projects first implemented over sixteen years ago may have served as precedents for other pedestrianization projects.

IX. Reflection & Conclusion

In this thesis project, I presented a set of broad urban forces that act upon and transform public spaces as a framework of knowledge bands. I then reviewed planning literature to identify global

examples of the knowledge bands resulting in streets being reclaimed from car use for pedestrian use. New York's transformation of three public spaces was documented and analyzed for how the knowledge bands influenced these evolutions. All of these steps resulted in lessons learned for urban planners and city officials interested in reclaiming street space for pedestrians and understanding mechanisms that catalyze public space transformation.

The framework presented in this thesis attempts to organize the urban forces that act upon public spaces, but it is limited. For instance, there are varying degrees to which planners may exercise control over elements contained within the knowledge bands. Planners may not always be fortunate enough to work with elected public officials invested in pedestrian improvements and willing to take risks in rethinking street space. They also do not often control the historical and present form, arrangement, and composition of businesses within the proximity of their streets. Underlying cultural climate is also not easily or quickly modified. However, there is much that may be influenced within the bands, such as management plans, targeted intervention approaches, public-private partnerships, and winning public approval through thoughtful public outreach and involvement.

This framework may be applied to public spaces within other cities as a starting point for understanding not only how past forces have shaped such spaces, but also for viewing public spaces with a lens of looking for opportunities. Other cities are unlikely to be so similar to New York that the exact same conditions will be present; however, the framework may help to translate other cities' urban forces into a foundation for beginning to transform streets into cherished pedestrianized spaces. After all, if it can be done in New York, it can be done anywhere.

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