MASTER OF SUSTAINABLE
REAL ESTATE DEVELOPMENT

777 W Chicago Avenue:

A Study on District-Scale Redevelopment

Prepared for:

Tribune Real Estate Holdings, LLC

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Author
Deirdre Clein
SRED: 6020 Directed Research
Master of Sustainable Real Estate Development
Tulane School of Architecture

Executive Summary

Developing a district requires additional consideration and planning with respect to a range of factors – market influences, access to transit, financing, and timing, to name a few – than an independent project would necessitate. As such, developers seeking to redevelop an entire neighborhood would be wise to turn to success stories for established district-scaled developments. By researching six development projects in six cities across the country, I sought to inform my research partner, Tribune Real Estate Holdings, LLC, on some of these key considerations for their new River District – a 30-acre site in downtown Chicago. The conclusion I drew from these case studies, was that the different strategies the projects utilized to ensure success created a lasting effect on how users experienced and interacted with the district. Using these six approaches to development (main draw versus a mixed-attraction approach, emphasis on the private sphere versus the public realm, and privately funded versus publicly driven), I analyzed how each strategy might address the challenge of parking requirements for a district-scaled project. My recommendation to Tribune as they pursue the development of the mixed-use River District by connecting residential, office, and retail to a public riverfront, would be to draw on the strategies of a shared parking plan with demand-sensitive parking management and provisions for alternative transit.

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Introduction

Total redevelopment at a district or neighborhood level in dense, urban cities is largely uncommon since it requires the agglomeration of a significant amount of land in addition to substantial time and funding commitments. However, reflecting back to fall of 2017, we can recall how cities escalated into a bidding war, proposing plans to redevelop huge swaths of their downtown and even whole districts, in an attempt to lure Amazon's second headquarters, HQ2.[1] While a bid of this nature is one way to initiate change and transform an area, this method can be short-sighted and will likely fall apart if the development proposal is solely based on winning such a bid.

By examining the master planning and redevelopment of a 30-acre site situated along the North Branch Chicago River from its historically industrial past into a new mixed-use downtown district within Chicago, I sought to better gauge the infrastructure, amenities, and municipal negotiations that are integral to the redevelopment of this site into a cohesive district. Through this particular example, and several cases studies from across the country of district-scaled redevelopment efforts, I hoped to address the critical components for industrial corridor revitalization and riverfront investment for a development to serve as a spoke and catalyst of downtown expansion.

Through the course of this semester I worked with Tribune Real Estate Holdings, LLC ("Tribune"), the current property owner of the site, who, in conjunction with architecture firms Solomon Cordwell Buenz (SCB) and Sasaki Associates, has prepared a master plan and landscape plan for the site and is in the process of obtaining predevelopment land-use approvals in order to make the site particularly appealing to developers and investors. Objectives for my research were to investigate what contributes to a site's level of development-readiness and how to maximize development potential and limit the standards and requirements imposed through local government.

[1] CityLab Roundtable, "What to Do about HQ2," *CityLab,* January 30, 2018, accessed May 9, 2018, https://www.citylab.com/equity/2018/01/what-to-do-about-hq2/551486/.

The Site

777 W Chicago Avenue is a 30-acre site within the River West neighborhood of Chicago, Illinois, approximately one-mile northwest of the Central Business District. The site is generally bounded by W Chicago Avenue to the north, N Halstead and N Desplaines Streets to the west, the Ohio Feeder Ramp and W Grand Avenue to the south, and the North Branch Chicago River to the east, see *Image 1* below. The property is not contiguous, the elevated, east-west Ohio Feeder Ramp bisects the property, spitting the southern 5 acres from the rest of the site, and the historic Union Pacific Railroad slices across the site diagonally – a testament to the site's more industrial past.

The northern portion of the site is currently home to the Chicago Tribune's Freedom Center printing facility; however, the rest of the site is primarily used for truck and employee parking. The Tribune's parent company, Tronc, has a long-term lease with Tribune Media for the Freedom Center, which expires in 2023.[2] The existing zoning designation is a Planned Manufacturing District, which permits limited commercial uses and a range of industrial uses. Tribune has initiated a zoning change for the entire site to a Planned Development in order to achieve a higher mix of permitted uses and more accommodating standards.

A defining feature of the site is its relationship to the riverfront, occupying approximately one quarter mile of frontage on the North Branch Chicago River. This waterfront presence also represents an additional layer of reviews and permitting from the from the US Army Corps of Engineers.

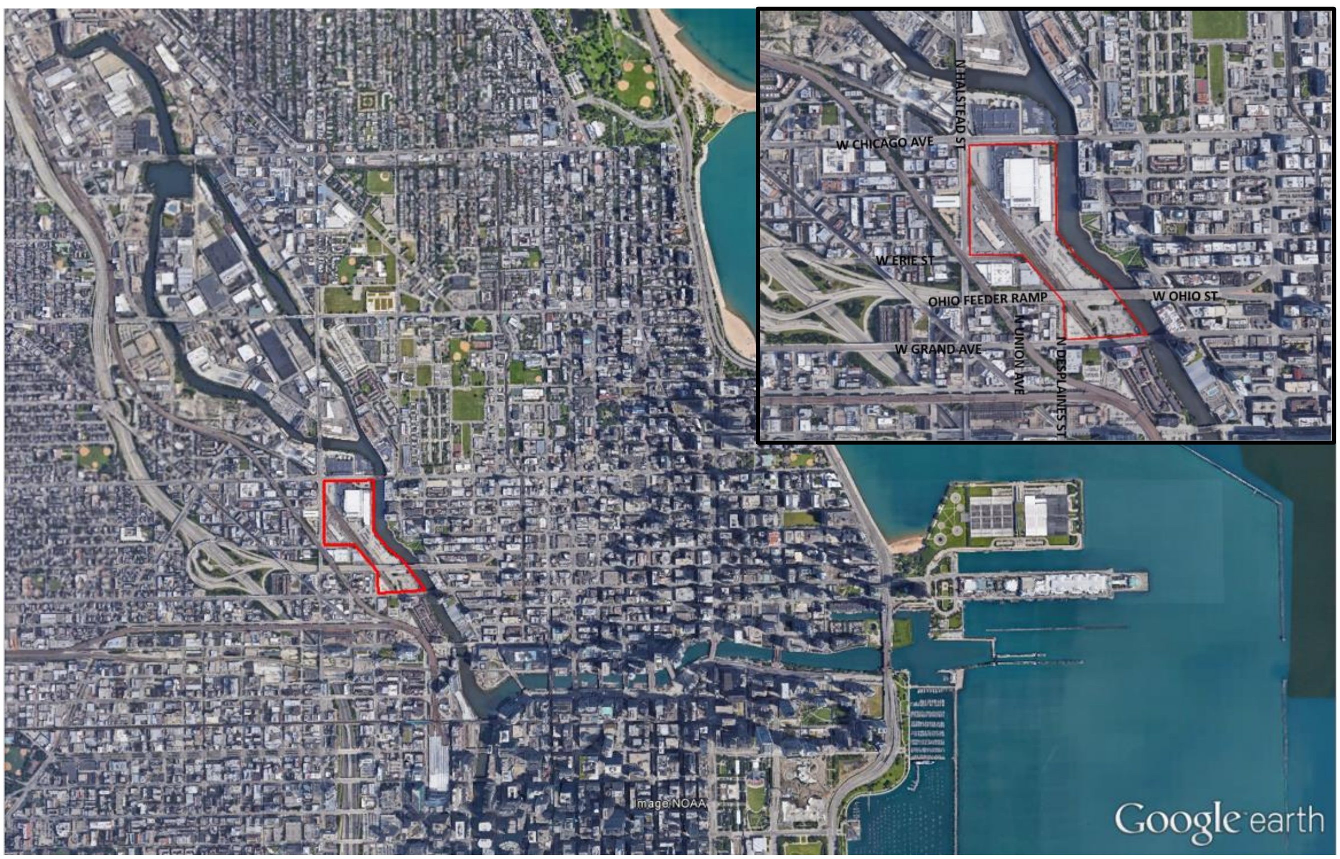

Image 1: 777 W Chicago Avenue site boundary.

[2] Ryan Ori, "Massive development along Chicago River's North Branch is new option for Amazon HQ2," *Chicago Tribune*, October 4, 2017, accessed May 9, 2018, http://www.chicagotribune.com/business/ori/ct-biz-freedom-center-ryan-ori-20170929-story.html.

History & Context

River West

The River West neighborhood sits along the west bank of the North Branch Chicago River, just south of Goose Island and north of the Chicago River split. The neighborhood has historically been known as an industrial corridor, and the 777 W Chicago site was home to the historic Erie Street/Grand Avenue Railway Yards, see *Image 2* below. In recent decades, the remnant of River West that was not developed as part of the Kennedy Expressway (Interstate 90), has mostly transitioned to meet the needs of a new generation of city-dwellers, featuring luxury condominiums and mid-rise offices, with a remaining swath of 30 acres along the riverfront.

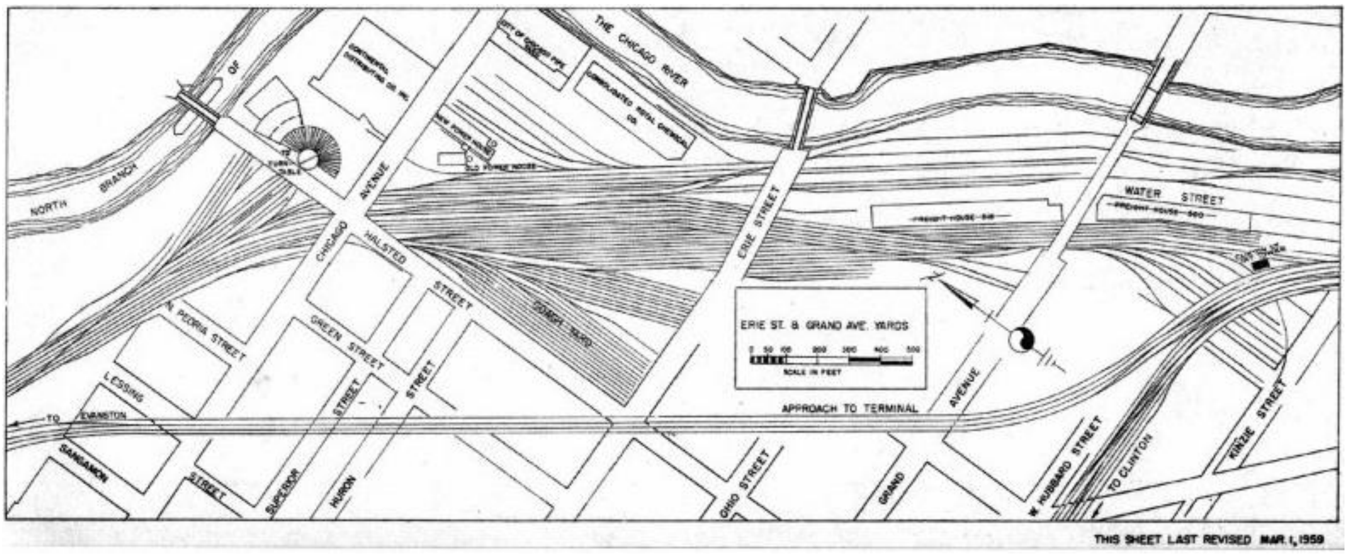

Image 2: Erie St. at Grand Ave. Yards, 1959.[3]

Riverwalk

Until the last decade, Chicago's riverfront was largely underutilized. However, the Chicago Riverwalk Project along the Main Branch of the Chicago River was completed in 2015 and has set a precedent to reclaim the river for the ecological, recreational, and economic benefits of the City.[4] One of the leading architecture firms for the Riverwalk project, Sasaki Associates, has also partnered with Tribune for the redevelopment of the 777 W Chicago site.

The formerly inactive Chicago Riverfront was at one point seen as more of an inconvenience in its severance of the CBD from Chicago's other downtown neighborhoods and generally only drew attention in the annual St. Patrick's Day tradition of dying the river green. However, Sasaki's vision of riverfront 'pockets' or 'rooms,' as created by the bridge system, with each block taking on the form and program of a different river-based typology, has dramatically improved the perception of the Main Branch River.[5] Though nothing so dynamic is envisioned for the 777 W Chicago riverfront, intentional incorporation of the North Branch into the design and development of the site is essential.

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[3] Tom Mann, "Engineering Diagrams for CNWs Near North Side Lines," *Chicago Switching,* posted July 5, 2004, accessed May 9, 2018, http://www.chicagoswitching.com/chicago/overview-maps-and-infomation/Engineering-Diagrams-for-CNWs-Near-North-Side-Lines/.

[4] Sasaki Associates, "Chicago Riverwalk," accessed May 9, 2018, http://www.sasaki.com/project/134/chicago-riverwalk/.

[5] Ibid.

Case Studies

Following World War II, there were many forces that drove households away from city centers: rising incomes, growing ownership of cars, the postwar baby boom, high crime, and increasing underlying racial tension. However, around the 1990s, the appeal of the suburban dream began to diminish. Income growth slowed, reducing the demand for housing space. Automobile ownership plateaued. The makeup of households diverged from the American nuclear family as single-person and childless households accounted for an increasing share of the American population. These factors, coupled with changing preferences and greater access to amenities and attractions, contributed to the urban resurgence still being felt today. [6]

This near abandonment of urban cores followed by the massive surge in demand has been a primary reason we are seeing district-wide redevelopment. Whole neighborhoods did not see investment for almost half a century; shifts in industry from predominantly blue-collar jobs to white-collar professionals lead to vacant factories and warehouses along primary shipping and railway corridors. Heavy demand associated with the migration back to cities and an ongoing under supply of housing alternatives meant higher costs and rents per square foot, prime circumstances for redevelopment.

Even in the face of globalization, Cities take pride and strive to maintain that which makes them unique and authentic. There is a founded apprehension that turning to the success stories of other cities will lead to generic, gentrified places, as can be seen with the 'hipsterfication' of many urban areas. I examined six projects, focusing on cities located along a major waterway, however, I offer these case studies not as a formula for replication, but rather to break down how to approach large-scale redevelopment essentially from the ground up. What I observed about these case studies was that, despite many similarities across all projects, they utilized different methods to ensure success. While it can be argued that different markets will result in different circumstances, these development approaches ultimately created a lasting effect on how users experienced and interacted with each district.

Comparative Matrix

In *Table 1*, below, are broad metrics for the six projects studied.

Table 1: District-Scale Development Case Studies.

Development	Land Area	Approximate Development Cost	Construction Timeframe
Brickell City Centre, Miami	6 acres	$1.05 billion	4 years
The Wharf, Washington D.C.	24 acres	$2.5 billion	3 years
Harbor East, Baltimore	70 acres	$500 million	~5 years
Battery Park City, New York City	92 acres	$1 billion +	~30 years
The District, Detroit	~100 acres	$1 billion +	3 years
Seaport, Boston	~200 acres	$1.5 billion	~15 years

Main Draw vs. Mixed-Attraction Approach

When looking to determine what fuels the regeneration and redevelopment of a neighborhood, there is often a key driver – something that is guaranteeing the success of the project. For the recently revealed District Detroit, that draw was the Little Caesar's Arena: the new home to both Detroit's NHL and NBA teams. The 50-block development included more than the stadium, which serves as an entertainment and concert venue when not

[6] Mario Polèse, "Why (Some) Downtowns are Back; Lessons from the urban resurgence," *City Journal*, Winter 2014, accessed May 9, 2018, https://www.city-journal.org/html/why-some-downtowns-are-back-13622.html.

hosting sporting events, but also provided supplemental commercial developments and residential uses. However, Little Caesar's Arena is "the nucleus for that area, and it's the catalyst for that project to take shape."[7] Prior to its official designation as Detroit's entertainment and events district, the area was largely vacant, an indirect result of the Fisher Freeway (Interstate 75) that severed Downtown from Midtown in the late 1960s. While the development happening in Detroit's Downtown and surrounding neighborhoods could have eventually spread to fill this hole in the urban fabric more organically, project developer, Olympia Development of Michigan, and the City of Detroit, recognized the need to create this place as a destination in and of itself. While the District supports a mixed-use neighborhood, the development would not have been the success it is without the arena.

Once a booming shipping area, Boston's Seaport was reduced to "a decrepit no-man's land of parking lots and abandoned warehouses in the mid-1900s."[8] However, rather than wiping the slate clean, efforts over the past two decades ranging from the relocation of the federal courthouse and the Boston Institute of Contemporary Art to the Big Dig's burial of the Central Artery and new interchange to the construction of three franchised hotels and rehabilitated warehouse-turned-studios within Seaport have made this area a success.[9] Boston's Seaport is still striving to become a true neighborhood; and while "cranes seem to rise every other week, erecting office buildings, condominiums, retail stores, and restaurants," residents are also showing a demand for more basic uses, including "a regular grocery store, a pharmacy, a dry cleaner, and banks."[10] The once derelict Seaport is now a multi-purpose neighborhood, dependent on no singular use, but rather strengthened through its ability to attract such diverse residents, employers, and consumers.

Private Sphere vs. Public Realm Emphasis

Fueling economic development and growth through investment in the private sector, often with a focus on market-rate residential, Class-A office or commercial has long been a strategy for districts looking to generate redevelopment. Take Baltimore's Harbor East, a once vacant and dilapidated former shipping area, now a thriving, mixed-use district encompassing nearly 70 acres along the waterfront, featuring over 10 million square feet of office, retail, restaurant, and residential space.[11] Harbor East features boutique shopping and destination dining, luxury waterfront condos, and offers the convenience of Whole Foods, CVS, and banks all within a few blocks. The development's success can be attributed to its focus on high-end, privatized real estate offerings, including nearly 3 million square feet of Class-A office space, 9 hotels, including the Four Seasons, over 1 million square feet of retail and restaurant space, and over 9,000 structured parking spaces.[12] By focusing on providing the necessary businesses, services, and amenities within its 12-block radius, Harbor East has become the ultimate mixed-use, live/work/play destination and has no real need to accommodate additional public space, since those experiences can be supplemented within the private realm.

While some cities seek to revitalize an area with a declining 'sense of place' through a rebranding effort, others recognize that development in the private sphere must be balanced with investment in public spaces and amenities. One such example is the Wharf in Washington D.C., which deliberately incorporated public spaces,

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[7] Frank Witsil, JC Reindl, and John Gallagher, "Little Caesars Arena to breathe life into dead zone of Detroit," *Detroit Free Press,* August 31, 2017, accessed May 9, 2018, https://www.freep.com/story/news/local/michigan/detroit/2017/08/31/detroit-district-arena/617001001/.
[8] Matthew Reed Baker, Chris Vogel, and Patrick Doyle, "The Rise of Seaport," *Boston Magazine*¸ July 12, 2012, accessed May 9, 2018, https://www.bostonmagazine.com/2012/07/05/rise-seaport-district-boston/.
[9] Ibid.
[10] Ibid.
[11] "Harbor East, Baltimore, MD," *Vibrant Development Group LLC*, accessed May 9, 2018, http://vibedev.com/harbor-east/#&panel1-6.
[12] "Harbor East, Baltimore, MD, " *Vibrant Development Group LLC.*

reconnecting people to the waterfront and making the region more accessible.[13] The "3.2 million square foot waterfront neighborhood features new residential, office, hotel, shops and restaurants, cultural, marina, and public uses, including 10 acres of public waterfront parks, promenades, piers, and docks."[14] Public activities hosted along the Wharf have included free concerts on outdoor stages, strolling entertainment, art exhibits, and more. The Wharf has not only expanded the usage of the waterfront, but also transitioned that use "from a previously private, fenced off boat parking lot to an active harbor with public access across the entire site."[15]

Privately Funded vs. Publicly Driven

Regardless of whether a development focuses on one attraction or many, or puts emphasis on catering to private enterprises or the public, a district-scale development needs key figures, agencies, and firms providing the project with momentum, and more importantly, funding. A developer who owns the project site may have fewer regulatory restrictions or concessions, but often that increased flexibility is offset by financial limitations. Swire Group purchased 5.65 acres within downtown Miami and has been able to develop Brickell City Centre – a project which embodies a long-term investment of more than $1 billion – without bank loans and with limited public subsidies.[16] The mixed-use complex includes luxury condo towers, Class-A office buildings, a franchised hotel, and an expansive open-air shopping center. Swire is a nationally traded company with a portfolio of global developments, which was a contributing factor in its ability to develop Brickell City Centre unleveraged. Another critical element was the timing of the development; "by building during the down cycle and starting early, they had pricing power that allowed them to achieve this scale."[17] A predominantly privately-funded project is far riskier, but as Swire Group illustrated, the deal can be that much more fortuitous.

Another project that was groundbreaking for its day is Battery Park City, located on the southern tip of Manhattan. The development is "'a planned community' owned and managed by the Battery Park City Authority (BPCA), a public benefit corporation created by New York State."[18] Formerly part of the Port of New York, the site fell into disrepair following the rise of air travel, however, in the late 1960s, the governor and state legislature worked to create the BPCA, which beginning in the 1980s, carried out the redevelopment of the area into the mixed-use district it is today.[19] While the BPCA wasn't the sole developer, the agency instituted guidelines for would-be developers, ranging from minimum unit square footage to adopting green performance metrics to the provision of moderate income housing.[20] The development of Battery Park City driven by the BPCA took decades to complete, longer than a private developer might have taken for a similar project. Yet it could be argued that what the project lost in efficiency, it made up for with its high development standards and attempt at inclusivity, attributes that resulted from its creation by and supervision from a public entity.

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[13] The Wharf, "Hoffman-Madison Waterfront Opens the Wharf to the Public on October 12," October 12, 2017, accessed May 9, 2018, https://www.prnewswire.com/news-releases/hoffman-madison-waterfront-opens-the-wharf-to-the-public-on-october-12-300535489.html.
[14] Ibid.
[15] Ibid.
[16] Debora Lima, "City in a city: Brickell City Centre set to transform downtown Miami," *Miami Herald*, May 15, 2016, accessed May 9, 2018, http://www.miamiherald.com/real-estate/article77579307.html.
[17] Ibid.
[18] Crystal Proenza, "Battery Park City," *The Cooperator,* September 2007, accessed May 9, 2018, https://cooperator.com/article/battery-park-cit/full.
[19] Ibid.
[20] Ibid.

The Project

River District Master Plan

Tribune has commissioned architecture firms SCB and Sasaki Associates to develop a Master Plan to serve as a framework for the 777 W Chicago site. The team anticipates this phased development will create and encompass a new mixed-use River District. "The River District is envisioned as an innovation and technology hub in the heart of the City's 'Tech Triangle' emerging along the north branch of the river, reaffirming Chicago as among the most innovative cities in the world."[21] The new development seeks to extend Chicago's downtown by connecting it to neighborhoods such as River North, Fulton Market, and River West. The River District Plan builds on Chicago Mayor, Rahm Emanuel's North Branch Framework vision, which strives to foster growth through urban redevelopment, connectivity, and attracting and retaining companies and talent.[22] By leveraging best practices from major cities across the country, Tribune's goal is to establish an in-demand, dynamic district that reflects how people want to live and work today.[23]

The River District Plan and Sasaki's follow up River District Landscape Plan focus on maximizing development capacity while reestablishing the street grid and opening up views to the riverfront. In connecting to the river, the plans propose to make use of the existing material identity of the area: CorTen steel, weathered concrete, and wood with natural-looking finishes.[24] The landscape plan puts forth a vision to establish "windows to the river" – a concept that proposes key intersections that provide concentrated focal moments – continuous naturalistic paths and views, framed by the new construction and interspersed with active, civic hardscape.[25]

Image 4: River District Site and Landscape Plans.[26]

[21] Solomon Cordwell Buenz, "River District Master Plan," prepared for Tribune Real Estate Holdings, LLC, July 21, 2016, accessed May 9, 2018, http://www.scb.com/project/tribune-master-plan/.
[22] Ayda Ayoubi, "The River District," *Architect Magazine,* October 12, 2017, accessed May 9, 2018, http://www.architectmagazine.com/project-gallery/the-river-district_o.
[23] Ibid.
[24] Sasaki Associates, "Chicago River District", presentation for Tribune Real Estate Holdings, LLC, March 22, 2018.
[25] Ibid.
[26] Ibid.

Emerging Development Challenges

The nature of the River District Plan is that it is a guiding document; it provides a broad vision for how Tribune would like the site to be developed. However, it does not call into detail the more nuanced mechanics of site amenities, infrastructure, and other provisions required either to obtain land-use approvals or for the sake of attracting tenants. The River District is at an early enough phase that Tribune could potentially incorporate one or more of the development approaches previous cited. However, it is doubtful that Tribune, or any of the developers for the aforementioned projects, would set out with the intention to shape their district using these methods; it is far more realistic that these strategies surfaced as solutions to emerging challenges or issues.

One large question that still remains for the new River District is how to address parking. The once commonly held belief that cars are the ultimate form of transportation, and parking should be provided accordingly, has been called into question. We now accept the understanding that designing for cars is in direct conflict with building compact, urban, and walkable places; in fact, a recent study by CityLab found that cheap, excessive parking is directly linked to more drive-alone commutes, worse traffic congestion, higher rents, and all the other social costs of over-reliance on cars for urban mobility.[27] With this knowledge and the growing perspective that parking garages will be obsolete in coming years, it is no surprise that developers are looking for ways to reduce parking standards and design parking garages with the capacity to be repurposed.

Parking Alternatives

Using the same methodologies previously mentioned (main draw versus a mixed-attraction approach, emphasis on the private sphere versus the public realm, and a privately funded versus publicly driven focus), I examined how each strategy might address the parking issue for a district-scaled development.

Main Draw | Convertible Lots

For districts that have been developed with the intention of attracting droves of people from across a broad region, such as a stadium or music venue, there is a definite need to provide parking for attendees. However, when the need for such a high level of parking is only necessary during events, it begs the question of how to put those lots to good use when not in demand. For situations where the amount of parking provided cannot be reduced, a developer can make the best use of surface parking lots during non-event times by converting them to an open-air farmers' market or to accommodate food trucks and provide umbrellas, chairs, and tables for people to sit. Not only does this approach generate added revenue for the management company, it contributes to a more active street life and provides vendors with a safe place to sell their food or wares This alternative use scenario ensures that required parking to support a main draw is available, yet the lots can still find value in non-peak times.

Mixed-Use | Shared Parking

For districts that seek to lure people with a range of interests, the problem can often be that existing parking requirements drown the development in an excess of parking, since each use requires a minimum number of spaces. Generally, visitors will not come to a neighborhood for only one use; different types of uses attract customers, workers, and visitors during different times of the day. An office that has peak parking demand during

[27] Eric Jaffe, "The Strongest Case Yet That Excessive Parking Causes More Driving," *CityLab,* January 12, 2016, accessed May 9, 2018, https://www.citylab.com/transportation/2016/01/the-strongest-case-yet-that-excessive-parking-causes-more-driving/423663/.

the daytime hours and a restaurant whose demand peaks in the evening can share the same pool of parking spaces since these uses do not overlap.[28]

Parking standards should be appropriate to the level of urbanity for which they are established, and in walkable, mixed-use areas, shared parking factors can help to lessen requirements while still meeting parking needs. A shared parking factor for two uses, as found on *Image 5*, divided into the sum of the required parking for both uses as listed in the zoning ordinance, produces the effective parking needed.[29]

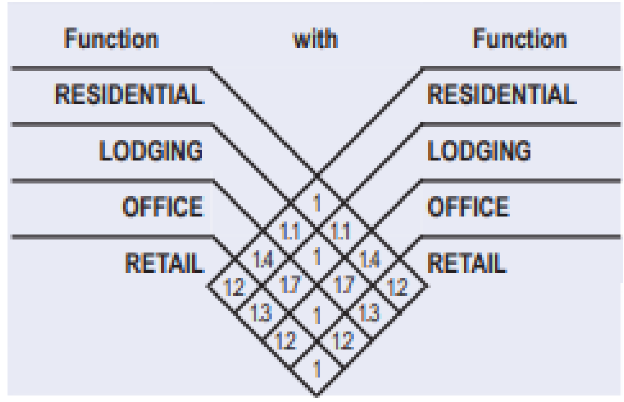

Image 5: Shared Parking Factors.[30]

Private Sphere-Oriented | Demand-Sensitive Parking Management

Tackling the parking dilemma from a private-sphere-focused approach would involve pricing parking by its demand. Demand-sensitive parking management aims to solve the surplus of parking required by charging variable prices according to the time of day. Sensors report the occupancy of each space and in response to the observed occupancy rates, the management company can adjust the price to stimulate or depress demand. "The goal… is to charge the lowest possible prices that will leave between 20 percent and 40 percent of spaces open at any time."[31] This process of adjusting prices based on occupancy is often called performance pricing and targets three objectives: ready availability, high occupancy, and revenue.[32] Drivers need to be able to find convenient parking without much trouble, while parking spaces must be efficiently used to serve customers. The equilibrium of these two goals can be met by modifying the parking rate. This limits the amount of parking needed since anyone willing to pay the variable rate will be able to find a space over those whose utility of parking as the cost is raised is not as great.

Public Realm Emphasis | Alternative Transit

Many municipalities offer reductions in the amount of required parking for a development by the provision for or presence of alternative forms of transit. Reductions may be granted for Transit-Oriented Developments that are within a specified distance of a rail line or high-frequency bus route, which incentivizes ridership.[33] Demand for parking, and thus parking requirements, can also be reduced by providing pedestrian and bicycle amenities that make it easier and more pleasant for people to walk or bicycle rather than drive.[34] This can range from streetscape improvements that make it more desirable to walk to the provision of bike racks and a bicycle service station. Providing the options and convenience for non-automobile transportation can directly reduce the need for parking while simultaneously encouraging public interaction and more inclusive infrastructure.

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[28] Christopher V. Forinash, Adam Millard-Ball, Charlotte Dougherty, and Jeffrey Tumlin, "Smart Growth Alternatives to Minimum Parking Requirements," *Semantic Scholar*, 6, accessed May 9, 2018, https://pdfs.semanticscholar.org/9aca/93497f2f31589bc1ef46f2faddbfbf601b9f.pdf.
[29] Duany Plater-Zyberk, "SmartCode: Version 9.2," (The Town Paper Publisher, 2012), 39.
[30] Ibid.
[31] Gregory Pierce, Hank Willson, Donald Shoup, "Optimizing the Use of Public Garages: Pricing Parking by Demand," *Science Direct*, Volume 44, November 2015: 89, accessed May 9, 2018, https://www-sciencedirect-com.libproxy.tulane.edu/science/article/pii/S0967070X15300366.
[32] Pierce et al, "Optimizing the Use of Public Garages: Pricing Parking by Demand," 91.
[33] Forinash et al, "Smart Growth Alternatives to Minimum Parking Requirements," 4.
[34] Forinash et al, "Smart Growth Alternatives to Minimum Parking Requirements," 9.

Privately Funded | Convertible Garages

Privately funded and focused projects may not be applicable for parking reductions, so a savvy developer who recognizes no provisions exist to reduce these standards can seek to future-proof these structures from the outset of their construction. Developers are now building new parking garages to be easily converted into other uses, such as offices.[35] Not only is parking garage conversion expensive, the process is challenging and works best when designed with the long-term adaptive reuse in mind. Developers not only have to think about reinforcing the floors to accommodate the load of cars, they must also consider the construction of columns that will one day facilitate a residential tenant or office worker.[36] Additionally, this requires the location of elevators and stairs to be in the middle of the structure and putting knock-out panels on the ceiling and floors to create future light wells.[37] Because the cost of ensuring a parking garage can be repurposed is initially high, this strategy is best suited to a developer who is invested in the long-term mitigation of parking.

Publicly Driven | Public Benefits

Cities that require the same number of parking spaces for all multi-family dwellings greatly increase the price of low-income housing since the cost of the required parking must be accounted for.[38] However, reductions in, or even eliminations of, parking requirements can be granted for the provision of a public benefit, such as affordable housing. Dedicated below-market-rate-units or housing for seniors can achieve parking reductions, recognizing that these residents may be less likely to own vehicles.[39] Housing is a more economically productive use of space and offers more value to a community than parking would — particularly in cities with increasing housing costs and shortages.

Incentivizing other public benefits, such as sustainability, can be another driver towards reduced parking standards. Communities committed to taking actions to fight climate change locally may recognize the link between free parking and greenhouse gas emissions.[40] While this approach may limit the supply of parking while not reducing demand, it ensures that only drivers must pay for parking. "People who cannot afford a car or choose not to own a car should not have to pay anything for parking. If drivers don't pay for their parking, someone else has to pay for it, and that someone is everyone."[41] By directly attributing this cost to drivers and eliminating the element of free parking as a 'Tragedy of the Commons,' parking reductions can serve as a benefit to the public.

[35] Charles LaCalle, "Real Estate Developers Begin to Future-Proof the Parking Garage," *Dreamit UrbanTech,* February 1, 2018, accessed May 9, 2018, http://www.dreamit.com/journal/2018/1/31/developers-rethink-the-parking-garage-with-rise-of-autonomous-vehicles.

[36] Ibid.

[37] Ibid.

[38] Donald Shoup, "Cutting the Cost of Parking Requirements," *Access Magazine,* Spring 2016, accessed May 9, 2018, https://www.accessmagazine.org/spring-2016/cutting-the-cost-of-parking-requirements/.

[39] Forinash et al, "Smart Growth Alternatives to Minimum Parking Requirements," 5.

[40] Josh Cohen, "Affordability and Sustainability Drive Parking Requirement Reduction," *Next City,* April 6, 2018, accessed May 9, 2018, https://nextcity.org/daily/entry/seattle-reduces-parking-requirements-in-bid-for-affordability-and-sustainab.

[41] Ibid.

Recommendation & Conclusion

As Tribune seeks to develop the mixed-use River District by connecting residential, office, and retail to a public waterfront, I would recommend the incorporation of a shared parking plan utilizing garages that are priced by demand with provisions for alternative transit. In this way, the River District project would address parking from a multi-faceted approach, incorporating strategies for a mixed-use development intended both for consumers and businesses in the private sector as well as individuals there to enjoy the riverfront and civic spaces. This method is inclusive and efficient, while still remaining economically viable.

While my research narrowed dramatically from my initial scope of understanding the critical elements necessary for cohesive redevelopment at a district scale, my methodology of using these approaches to shape how a project evolves, could be applied to any number of emerging challenges the 777 W Chicago site encounters and I would argue that it is essential for the development team of any large-scale project to consider the array of solutions available to them based on the desired lasting impact they wish to have at a district or neighborhood scale.

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