Parking for Progress

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March 13th, 2021

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Abstract

When urban planners make parking free, they divert the costs of parking from motorists to taxpayers. Developers pay for required parking, customers pay through higher prices at shops and businesses, and the cycle continues as other sectors of the economy incorporate the cost of parking into other prices. The Northfield Climate Action Plan offers recommendations to introduce market based pricing for parking in Northfield's downtown as well as elimination of minimum parking requirements throughout the City of Northfield. This paper will evaluate the various benefits of paid parking by exploring the relevant academic literature, analyzing the implementation of paid parking and elimination of minimum parking requirements in Northfield, while highlighting the various benefits sound parking policy will bestow upon citizens. Ultimately, this paper offers a timeline to achieving three main parking reforms:

1) *By 2026, the City will implement paid curbside parking in Northfield's downtown, and invest 70 percent of consequent revenue towards subsidizing Hiawathaland Transit in the form of discounted bus passes as well as expanded routes, 20 percent towards improving bikeability/walkability, and the remaining 10 percent will account for the additional personnel and infrastructure to sustain a paid parking scheme*.
2) *By 2031, the City will eliminate minimum parking requirements for all land uses.*
3) *By 2041, the Northfield Parking Authority will conduct a study on parking demand and supply to determine the feasibility of redeveloping the three downtown public parking lots.*

Introduction

In the City of Northfield, curbside parking spaces and off-street parking lots offer ample space for motorists to park their cars when patronizing the various businesses throughout the town. Northfield's downtown, centered around Division St., exemplifies the parking strategy adopted by the local government. For the vast majority of curbside parking spaces, at peak hours (from 8am to 5pm Monday through Friday), motorists can park their vehicles for no more than two hours. No parking is permitted on Fridays from 2am-6am or during snow removal, and select spaces limit parking to 20 minutes. Minimum parking requirements ensure that off-street parking will accommodate overflow parking demand that exceeds the supply of curbside parking. Any office, residential, or commercial business or entity occupying Northfield real estate must comply with these parking requirements. If available parking at a given business fails to meet the minimum required parking outlined in Northfield's Municipal Code, that business must supply additional spaces in an off-street parking lot.

According to a 2017 U.S. Census Bureau survey, 52 percent of Northfield residents drove alone to work, 11 percent carpooled, 8 percent walked or biked, and 32.6 percent worked from home.[1] Northfield's parking policy reflects citizens' transportation choices, and residents heavily favor personal vehicle travel. However, lacking City investment in alternative transportation infrastructure is also responsible for the heavy reliance on drive-alone commuting, and Northfield has relatively low biking and walking scores, 29/100 and 51/100 respectively.[2] In the absence of viable alternative transportation methods, citizens increasingly rely on personal car travel, and the City responds by ensuring the necessary parking to accommodate this transportation behavior. In this way, citizens' reliance on cars elevates the need for parking

[1] Climate Action Planning Advisory, "Northfield Climate Action Plan," 18.
[2] "Cities in Minnesota."

infrastructure, in turn, diverting funds away from alternative transportation investment. This cycle has historically governed City transportation policy.

In 2008, the City released its latest Comprehensive Plan outlining a blueprint for managing the Northfield's long-term growth. The plan recognizes parking as an impediment to the development of the City and recommends three strategies to improve Northfield's parking policies. It recommends that the City "cooperate with the local colleges to minimize negative impacts of parking and traffic on Northfield neighborhoods," "adopt a shared parking ordinance to facilitate new development of the downtown," "facilitate redevelopment of uses that do not fit the development pattern of downtown (i.e. single story uses surrounded by parking), but which with better design could increase density and provide more commercial, office, or housing opportunities," "expansion of [community] facilities should be closely monitored so that facilities do not negatively impact (with excessive parking, traffic, and noise) the character of a neighborhood," and "a development pattern [that] emphasizes pedestrian scale, minimizes building setbacks, ensures the public's health and safety by protecting the floodplain, and discourages large parking areas in front of buildings."[3] The Comprehensive Plan recognizes parking as an obstacle in managing long-term growth, and it introduced a debate within the City on the role of parking in Northfield's future.

In response to the impending climate crisis, the City has reformed the motivations behind its transportation management policy. Towards the end of 2019, the City of Northfield adopted the Northfield Climate Action Plan. In it, the city "committed to 100% carbon-free electricity by 2030 and being a 100% carbon-free community by 2040."[4] The plan offered six core values guiding the plan: Materials and Waste, Energy, Land, Food, Water and Wastewater, and

[3] "Comprehensive Plan for Northfield," 25, 49, 98, 104.
[4] Climate Action Planning Advisory, "Northfield Climate Action Plan," 7.

Transportation. Commercial and industrial building energy use accounts for around 85 percent of the City's emissions, and travel accounts for the remaining 12 percent of emissions. Mitigating fuel emissions requires advanced strategies that can decrease citizens' reliance on car travel. These mitigation strategies include more widespread use of electric vehicles as well as expansion and maintenance of pedestrian and cyclist paths. However, Northfield citizens have demonstrated their reliance on car travel to fulfill their transportation needs, and people will only make use of alternative transportation options if the City adopts measures to disincentivize car travel. The Northfield Climate Action Plan advocates the implementation of paid parking and investment of associated revenue to promote more sustainable transportation practices, while the elimination of minimum parking requirements allows for more productive use of Northfield's downtown.

The High Cost of the Status Quo

Given Northfield residents' preferences to travel by car, the City has safeguarded parking to accommodate vehicle travel, and businesses have become accustomed to meeting City parking mandates, viewing them as a necessary measure to attract customers. However, the motivations behind Northfield parking policy have evolved as the negative effect of fuel emissions on global warming have become clear. The City's transportation policies recognize that the current transportation system is incompatible with the emissions targets outlined in the Climate Action Plan. Before delving into the City's stated parking reforms, this paper will examine how the status quo in parking policy will perpetuate negative environmental, economic, and social effects in Northfield.

Paid Parking:

No one wants to pay for parking. People want ample parking, and business owners understand pricing as an impediment to potential customers. Cities and towns across the globe have safeguarded free parking to remove all the barriers that customers encounter on the way to the store. However, if drivers do not pay for parking, someone else must pick up the tab. Donald Shoup, Chair of the Department of Urban Planning at UCLA, maintains that "we don't pay for parking in our role as motorists, but in all our other roles–as consumers, investors, workers, residents, and taxpayers."[5] All localities have public spaces that belong to everyone free of charge. Cities maintain streets, sidewalks, and parks for public use, but the mismanagement of these resources can impose undue consequences on citizens as a whole. The tragedy of the commons occurs when, for example, a village offers land freely available to all citizens to graze their animals. In an ideal world, the use of the commons would remain below the carrying capacity of the land, and all users would benefit. However, as community members increasingly exploit the publicly available grazing land, the pasture becomes overgrazed. Free parking presents a similar "commons" problem. Just as cattle compete for grass, drivers compete for scarce parking spaces. When parking is free, "drivers waste time and fuel, congest traffic, and pollute the air while cruising for curb parking, and after finding a space they have no incentive to economize on how long they park."[6]

Minimum Parking Requirements:

Urban planners across the country have not ignored the "commons" problem in the market for parking; rather, they have misdiagnosed it. Instead of charging fair market prices to

[5] Shoup, *The High Cost of Free Parking*, 1.
[6] Shoup, *The High Cost of Free Parking*, 8.

decrease demand for parking, local governments have instituted off-street parking requirements for all new developments. These minimum parking requirements mandate that new buildings supply ample on-site parking under the assumption that development will increase demand for parking. For example, the City requires neighborhood-serving commercial businesses to provide at least "1 space per 500 square feet of floor area" and restaurants are required "15 spaces per 1,000 square feet or 1 space for each 4 seats, whichever is greater."[7] However, Northfield developers have not always had to deal with off-street parking requirements, and many businesses along Division St. currently violate the City's minimum parking requirements because only new developments are subject to these regulations. The City could not possibly obligate businesses to meet minimum parking requirements because it would require destroying existing developments to make space for off-street parking lots. One could imagine how different Northfield's downtown might look subjected to off-street requirements. Businesses would be bifurcated by off-street parking lots, and strip malls would sully the allure of Northfield's dense downtown. This overallocation of parking damages the City in three main ways:

1) Northfield becomes less attractive to consumers as a result of the numerous parking lots scattered throughout the City.
2) Real estate values increase due to the limited supply of developable land due to off-street parking requirements.
3) Businesses are constrained in their ability to pursue development strategies.

The negative effects of paid parking and minimum parking requirements extend beyond Division St. Subjected to off-street parking requirements, strip malls and sprawling parking lots stand in contrast to Northfield's historic downtown. These parking lots seek to accommodate

[7] Northfield City Council, "Northfield Minnesota City Code."

citizens' reliance on vehicle travel; however, simultaneously, abundant free parking reinforces individuals' decision to drive. As parking lots prevent dense urban development, alternative transportation methods like biking or walking become more difficult, again perpetuating drive-alone commuting behaviors. This cycle reflects a broader consideration between mobility and proximity. Historically, Northfield's parking policy has prioritized mobility at the expense of proximity, as "abundant parking makes it easier and cheaper to drive, but pandemic parking lots spread activities farther apart, making cars more necessary."[8] The tension between mobility and proximity is evident in Northfield, as the historic downtown which originally developed unburdened by minimum parking requirements promotes proximity, while Northfield's more recently developed "second downtown" along Highway 3 has sacrificed proximity, or dense urban development, in favor of mobility, or sprawl.

Northfield's supermarkets and large retail stores exemplify the tragedy of off-street parking requirements. For example, according to the Municipal Code, Target must supply a minimum of 520 spaces because it occupies about 130,000 square feet. Any Northfield resident will admit that they have never seen Target's parking lot at full capacity (*Appendix A*). Arbitrary requirements embedded in Northfield's zoning code have designated otherwise useful property for the sole purpose of parking. Together, free parking and minimum parking requirements have prioritized mobility over proximity at the expense of the City's physical appeal and productive land-use. Parking lots not only undermine the attractiveness of a city, but also the allocation of land towards parking drives up real estate values as developable land dwindles. Moreover, when cities require businesses and homeowners to furnish a certain amount of parking spaces,

[8] Shoup, *The High Cost of Free Parking*, 93.

landowners and tenants are constrained in their ability to pursue development strategies because any expansion must be accompanied by an expansion of parking capacity.

The Evidence Base for Sound Parking Policy in Northfield

Luckily, the City has ample scholarship in the academic literature as well as case studies to draw upon when reforming its parking policy. Myriad scholars have examined how to best mount parking reform, and various cities and towns have initiated the transition towards a parking policy that promotes more sustainable transportation practices while fostering a more vibrant city. This next section will examine relevant scholarship on parking policy to inform the best way forward for parking reform in Northfield.

This paper relies heavily on the scholarship of Donald Shoup, yet not without reason. Shoup has gained worldwide recognition in urban planning circles for his considerable research on parking management, and he reflects the academic consensus on how best to adopt a sustainable *and* economically beneficial, parking strategy. Shoup's parking recommendations are simple: "charge fair-market prices for curb parking, return the resulting revenue to the neighborhoods that generate it, and remove the zoning requirements for off-street parking."[9] This paper recognizes Shoup as the preeminent voice in transportation demand management and will use Shoup's findings as a framework to inform the optimal parking policy for Northfield.

However, this paper will not merely relay Shoup's recommendations in a Northfield context. It remains necessary and advantageous to explore additional scholarship that scrutinizes the feasibility of Shoup's recommendations in practice before committing to his parking policy framework. In a holistic review of the academic literature on parking policy, Greg Marsden, a professor at the Institute for Transport Studies at the University of Leeds, reviewed the academic

[9] Shoup, *The High Cost of Free Parking*, 15.

literature on parking policy, including but not limited to Shoup's work. Marsden identifies five main objectives that should govern a city's transportation policy: "a strong and vibrant economy supported by an efficient transport system; better accessibility; a clean and high quality urban environment; a safe and secure environment; a more equitable society."[10] These motivations remain consistent with those offered by Shoup, and because these objectives align with the motivations behind parking policy outlined in the Comprehensive Plan as well as the Climate Action Plan, this paper will utilize Marsden's aforementioned framework as the impetus for Northfield's parking reforms.

Marsden identifies three specific objectives, perceived in conflict, that hinder parking reform: "the desire to use parking measures as a means of *regenerating* a specific part of the urban area such as the town centre (i.e., providing more parking to attract business); the desire to use parking controls as a means of *restraining* vehicle traffic and improving environmental quality, or to encourage the use of non-car modes; and the need to secure sufficient *revenue* from the parking operation to cover costs or make a surplus to fund other activities."[11] Because the Northfield Climate Action Plan advocates a transportation policy that will increase "the availability of and access to low- or no-carbon transportation options," this paper will understand parking policy primarily as a lever to disincentivize vehicle traffic and incentivize more sustainable transportation practices.[12] In addition, this paper will pay secondary focus to parking policy as a means to bolster downtown businesses as well as amount significant revenue for the City. This paper will use Marsden's three objectives (*regenerating*, *restraining*, and *revenue*),

[10] Marsden, "The Evidence Base for Parking Policies–a Review."
[11] Marsden.
[12] Climate Action Planning Advisory, "Northfield Climate Action Plan," 19.

with primary focus on parking policy as a means to disincentivize vehicle travel, to inform its recommendations for parking reform in Northfield.

Before offering specific recommendations in a Northfield context, this paper will explore various case studies on the implementation of parking reform in localities in the U.S. and across the globe. In September of 1997, the city of Portland adopted the Lloyd District Partnership Plan aimed at decreasing single-occupancy commuting. To achieve this goal, the city implemented market-based pricing of curbside parking in tandem with discounted public transit passes. Martha Bianco, a former assistant professor of urban studies at Portland State University, analyzed the effectiveness of these measures on reducing drive-alone commuting practices in the Lloyd District. Her study found that "the drive-alone mode for the trip to work by employees in the Lloyd District had decreased by 7 percent."[13] When asked which policy spurred the change in transportation behavior, 22 percent of respondents cited paid parking and 19 percent cited discounted public transit.[14] However, Bianco identified three groups of employees unaffected by paid curb parking and discounted public transit: "Those who need their car for either trip chaining purposes related to household maintenance; such as childcare, or for purposes related to their job; those who report not having convenient access to transit and/or; those who can afford to pay for off-street parking or who receive free employer-provided parking."[15] To most effectively reach these groups, Bianco recommends that cities increase parking pricing and invest the revenue in public transit to most significantly mitigate drive-alone commuting. Ultimately, Bianco concludes that paid pricing and subsidization of public transit successfully

[13] Bianco, "Effective Transportation Demand Management," 7.
[14] Bianco, 7.
[15] Bianco, 7.

decrease single-occupancy commuting behaviors, with paid parking as the disincentive and discounted public transit as the incentive.

Bianco addresses the role of paid curbside parking and discounted public transit on drive-alone commuting, however, carbon-free alternative transportation methods, namely pedestrian and biking commuting behaviors, fall outside the purview of her study. Nonetheless, these alternatives play an important role in abating citizens' reliance on cars, and Danish transportation policy researchers Jesper de Groote, Jos van Ommeren, and Hans Koster examine the effect of paid parking and bicycle subsidies on hospital employees' parking demand. The hospital, which previously provided free off-street parking, implemented two parking policy changes: "a commuting-distance-dependent tariff increase during peak hours [and] a monthly subscription fee and a bicycle subsidy."[16] Their study found that the tariff (i.e. paid parking) reduced parking demand by 5 percent, and the parking subscription fee lessened parking demand by 2 percent.[17] The researchers acknowledged that the bicycle subsidy did have an impact on parking demand, though minimal; however, they attribute this to the already widespread adoption of bicycle commuting practices in the Netherlands, and they point to a study conducted by Wardman et al. in Great Britain, a country comparable to the U.S. in terms of bicycle commuting behavior, where researchers observed a more significant effect by bicycle subsidies on the decision to drive-alone.[18]

Analyzing the findings of Bianco and de Groote et al. in tandem will help identify the most effective strategy to reduce drive-alone commuting in the Northfield context. Both Bianco and de Groote agree that the adoption of market-based pricing in locations where parking used to

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[16] de Groote et al., "The Effect of Paid Parking and Bicycle Subsidies on Employees' Parking Demand."
[17] de groote et al.
[18] Wardman, Tight, and Page, "Factors Influencing the Propensity to Cycle to Work."

be free significantly reduces single occupancy commuting behaviors. Whereas Bianco focused on the effect of paid parking alongside greater city investment in public transportation, de Groote et al. quantify the effect of paid parking coupled with a bicycle subsidy on parking demand. Both public transit and biking/walking represent viable alternatives to drive-alone commuting, and city investment in these vehicle substitutes will not be mutually exclusive. However, paid parking will provide the City with additional revenue, and local policymakers must identify how to most productively invest funds to achieve two goals: primarily, to promote more sustainable commuting behaviors and, secondarily, to maintain the economic vitality of Northfield's downtown.

Bianco found that discounted public transit generated a more significant effect when compared to the bicycle subsidies studied by de Groote et al. De Groote et al. suggest that the effectiveness of bicycle subsidies would be magnified in communities where bike commuting remains low. This lends credence to expectations that bicycle subsidies will produce a greater effect in Northfield, given the low bike scores recorded in the City. However, the five month winter in Minnesota erodes commuters' inclination to bike or walk. In addition, biking and walking subsidies fail to attract those groups Bianco identifies as unaffected by Portland's transportation demand management strategy. In contrast, public transit is not weather dependent, and expansion of the public transportation system will affect more change in commuting behavior throughout the whole community in comparison to expansion of Northfield's biking/walking infrastructure. After exploring the case studies performed by Bianco and de Groote et al., this paper identifies public transit as the primary destination for City investment, followed by investment in Northfield's walking/biking infrastructure.

Cities must target its investment to maximize public transit ridership. In a similar study to Bianco, Nagwa Khordagui, an economist at the U.S. Department of Transportation, explored the impact of parking prices on employees' decision to drive to work in California. Like Bianco, Khordagui concludes "that a 10% increase in parking prices could potentially reduce the probability of driving alone to work by 1-2 percentage points."[19] Khordagui identifies specific factors influencing the decision to drive that will help reveal the best strategy to change commuting behaviors among the groups Bianco identifies as difficult to reach. Intuitively, Khordagui maintains that the distance between home and work as well as the ratio of transit time to driving time are influential factors in the decision to drive. Thus, city investment should attempt to match employees' travel time via public transit to drive-alone commutes. In addition, she maintains that "proximity to transit at the work location is more important than proximity at home."[20] Accordingly, city officials should identify the most common work locations among Northfield residents, and design bus routes that minimize employees' travel time between the workplace and the bus stop. Khordagui admits the difficulty in affecting change among commuters involved in chain trips, but she recommends devising bus routes to and from work that include stops at common stops for commuters, such as supermarkets, convenience stores, and schools. For sprawling cities like Northfield, Khordagui recognizes the greater degree of difficulty in getting people out of their cars; therefore, cities should adopt reforms that mitigate sprawl, such as elimination of minimum parking requirements, that will promote denser future development, in turn, increasing the viability of public transit. Khordagui's analysis of the factors that influence commuters towards or away from drive-alone commuting can inform how

[19] Khordagui, "Parking Prices and the Decision to Drive to Work: Evidence from California."
[20] Khordagui.

to optimally invest paid parking revenue to most effectively reach the three groups identified by Bianco.

The academic literature on optimal parking policy serves as a useful resource for policymakers to rely on, however, there exists a significant divergence between the recommendations of experts and the compromise inherent in American politics. Transportation researchers Tom Rye, Kim Hunton, and Stephen Ison, and Nazan Kocak bridge this divide between the theoretical and practical, as they seek to prevent political compromise from undermining the original goals of parking reform in the first place. Rye et al. do not concern themselves with optimal parking policy, recognizing that the academic consensus has established that "there is a demonstrable link between parking availability, price and mode choice, and parking policy has been shown to be a powerful demand management tool;" rather, they focus on how policy makers in Edinburgh, Scotland interacted with the public to most effectively garner public support for proposed parking reforms. Initially, citizens opposed Edinburgh's reforms, including paid parking and restrictions on off-street parking lots, because of the perception, reinforced by local media coverage, that the local government was "'hell-bent' on making it as difficult to park as possible and on making money from parking,"[21] objections sharpened among business owners serving parking spots subject to pricing. In response, the City of Edinburgh conducted opinion surveys among citizens and businesses affected by the proposals as well as market research to illustrate the need for parking reform. Rye et al. conclude that "wider consultation informs the parking policy debate not the least in terms of highlighting areas where parking policy is operating inefficiently, where the general public have wrongly perceived the quality of provision and where the flow of information needs to be enhanced."[22] When

[21] Rye et al., "The Role of Market Research and Consultation in Developing Parking Policy."
[22] Rye et al.

implementing measures such as paid parking and minimum parking requirements, policymakers should gauge public attitudes to combat common misconceptions, ensure transparency in regards to the motivations behind proposals, and compromise when necessary to elevate public acceptance.

Lessons from Stillwater, MN

In 2015, the Stillwater City Council approved a measure to convert several free lots to paid lots (*Appendix C*). Stillwater, a town nearly identical to Northfield in size and population, is a popular weekend tourist destination for Minnesota residents. Previously, the city had provided free curb and off-street parking; however, in an effort to tap into tourist revenue, the town passed a measure to target off-street parking lots frequented by tourists. Stillwater's community development director, Bill Turnblad defended the measure saying "if you are from Minneapolis here for a day trip, and you're going to be spending the day shopping and eating dinner downtown, $5 is reasonable. That's not going to prevent you from parking here. Just like there's no free lunch, there's no free parking."[23] Stillwater has yet to adopt paid curbside parking, opting instead to enforce time limits on curb parking; nonetheless, the adoption of paid off-street parking reflects a broader trend in Minnesota and in local governments across the country viewing paid parking as a means to raise valuable revenue. Upon implementing parking reform, this paper recommends that the City of Northfield consult the City of Stillwater to gain insight into the various benefits as well as potential challenges associated with adoption of paid parking.

Recommendations

[23] Divine, "Stillwater Adding Fees for Downtown Parking."

Cities and towns differ in land size, population, demographics, etc., and no "one size fits all" method of parking reform exists; however, the plethora of academic literature provides Northfield with a series of best practices to take into account when carrying out parking reform. Drawing upon the parking policy goals stated in the Comprehensive Plan and the Climate Action Plan as well as the discussion of the relevant academic literature on parking policy, this paper will now offer a series of recommendations to improve Northfield's parking policy grounded in the City's goals to promote more sustainable transportation practices while preserving the City's economic vitality. These recommendations will be situated within a 20 year timeline that balances political feasibility with swift action in the face of an existential climate crisis.

~5 Years: Paid Parking

By 2026, the City will implement paid curbside parking in Northfield's downtown, and invest 70 percent of consequent revenue towards subsidizing Hiawathaland Transit in the form of discounted bus passes as well as expanded routes, 20 percent towards improving bikeability/walkability, and the remaining 10 percent will account for the additional personnel and infrastructure to sustain a paid parking scheme. In Northfield's Climate Action Plan, the City designates market-based pricing of parking under "Recommended Actions," defined as strategies that "are supported by City rules and procedures. Many policies and programs that are already in place can be built upon to implement climate-specific actions insofar as they align with the goals of this plan. Relevant policies and planning functions include but are not limited to: Complete Streets, Safe Routes to Schools, Land Development Code, and the Comprehensive Plan. In some instances, it will be necessary to create new policies to address some of the

challenges where existing policies are insufficient to meet climate targets."[24] As a "Recommended Action," the City has acknowledged that the most significant obstacles to paid parking are not institutional but political.

Upon adopting paid parking, the City must decide where to adopt paid parking. This paper proposes that curbside paid parking be implemented on the portions of Division St., Water St., and Washington St. that lie between 2nd St. and 7th St (*Appendix B*). Similarly, the three downtown off-street parking lots will be subject to market-based pricing. This area encompasses the City's central business district, and paid parking will generate significant revenue not only from Northfield residents who patronize downtown business, but also from individuals associated with St. Olaf College and Carleton College as well as the tourists attracted by Northfield's rich history. Paid parking only applies to publicly provided curbside and off-street parking, and private off-street lots in compliance with minimum parking requirements for individual businesses will remain free for their customers. This allows the City to maximize revenue from tourists and students/families associated with the colleges, while preserving free parking for essential businesses such as Family Fare that serve Northfield residents.

Revenue will be generated in two ways: motorists' parking payments as well as the financial penalties associated with parking violations. The specific prices for paid parking lies beyond the scope of this paper, but *Appendix D* displays an example of prices charged by the Albany Parking Authority, and this paper envisions a similar pricing scheme where the hourly cost increases by $0.25 for each hour beyond the two hour mark. This paper recommends the installation of digital parking meters, as opposed to traditional meters. These meters are advantageous because they allow for more pricing flexibility in pricing and accept cash,

[24] Climate Action Planning Advisory, "Northfield Climate Action Plan," 35.

app-based electronic payment, and credit/debit card payments. In regards to pricing as well as meter type, this paper advises the City to consult transportation demand experts to calculate parking rates and purchase meters.

The City has expressed a commitment to promote pedestrian/bike commuting behaviors, and paid parking would complement the City's existing investments by disincentivizing car travel. The City has already adopted Complete Streets (*Appendix E*), an initiative aimed at ensuring streets assure safe travel for pedestrians, bikers, motorists, transit, emergency responders, and freight carriers, as well as Safe Routes to School, an initiative that facilitates safe pedestrian/bike routes to school for students. As shown by de Groote et al., the adoption of paid parking throughout Northfield will increase usership of these publicly provided amenities, boosting the return-on-investment for the City. The 20 percent of parking revenue dedicated towards expanding pedestrian/bike infrastructure will allow the City to improve walkability by expanding bump-outs and improving sidewalk/bike lane maintenance and snow removal. City-led projects to expand and upgrade Northfield's biking/pedestrian infrastructure are already underway, and the 20 percent of revenue will sufficiently supplement these projects.

The City's current investment in public transportation system lags behind its contributions towards biking/pedestrian infrastructure; therefore, in keeping with the evidence offered by Bianco and Khordegi, 70 percent of revenue generated will be invested towards improving Hiawathaland Transit in two ways: discounted bus passes as well as expansion of routes. By lowering the cost to ride public transit, the City will lessen the cost burden for commuters, in turn, increasing ridership on Hiawathaland Transit. Expansion of routes will make riding the bus feasible for commuters who currently live/work too far from the nearest bus stop. As illustrated by Khordagui, the proximity of a bus stop to a commuter's place of work exhibits a

greater effect on propensity to ride public transit when compared to proximity of a bus stop to a commuter's home. Hence, the City should identify the places of work most frequented by Northfield employees when expanding routes. These improvements promote sustainable transportation practices because, in Minnesota, public transit reflects the next best alternative to drive-alone commuting. In addition, revamping Hiawathaland Transit will provide economic benefits because the Northfield business community benefits from superior mobility of its citizens, while addressing equity concerns because public transit disproportionately serves lower income groups.

Finally, the remaining 10 percent of parking revenue will cover the additional costs borne by the City to establish the requisite infrastructure to implement a paid parking scheme as well as adding the necessary personnel in the Northfield Parking Authority to enforce parking violations. Due to the relatively narrow area subject to paid parking, this paper advocates the recruitment of one additional full-time employee to issue tickets for parking violations.

~10 Years: Elimination of Minimum Parking Requirements

By 2031, the City will eliminate minimum parking requirements for all land uses.

Northfield's Climate Action Plan lists elimination of minimum parking requirements under the "Innovation and Demonstration" section, defined as "innovative projects that can also serve as demonstrations for Northfield residents and businesses as well as other communities locally, state-wide, and nationally wherever applicable. These projects will require a new approach that will test unfamiliar concepts and prepare to scale up those that demonstrate viability."[25] As a "Innovation and Demonstration" policy, the Climate Action Plan characterizes the elimination of

[25] Climate Action Planning Advisory, "Northfield Climate Action Plan," 39.

minimum parking requirements from the Municipal Code with a greater degree of political difficulty relative to "Recommended Actions." However, the implementation of paid parking by 2026 will have already decreased the demand for parking, and by 2031, the overallocation of parking in Northfield will be even more apparent. To garner public support as outlined by Rye et al., the City will conduct polling, information sessions, and workshops, to dispel common parking myths and convey the various sustainable and economic benefits of a more productive zoning code, bolstering elimination of minimum parking requirements as politically feasible.

Today, the City's minimum parking requirements apply to land for residential uses (e.g. family dwellings, townhouses, and apartments), commercial uses (e.g. hotels, offices, and restaurants), industrial uses (e.g. warehouses and yards), and public, institutional, or recreational uses (e.g. hospitals, parks, and schools). Elimination of off-street parking requirements would apply to all land uses, in turn, mitigating sprawl, reducing the overallocation of parking that incentivizes the decision to drive, and allowing homeowners and business owners to pursue development strategies independent of parking considerations. Even with minimum parking requirements still in place, Northfield residents have demonstrated their desire to see more productive uses of off-street parking lots. Construction is already underway to transform a portion of the excessive parking lot that serves Target and Cub Foods into a Wings Financial Credit Union, and according to Northfield Planning Commissioner Will Schroer, citizens have expressed desire to redevelop the southern portion of Family Fare's parking lot.

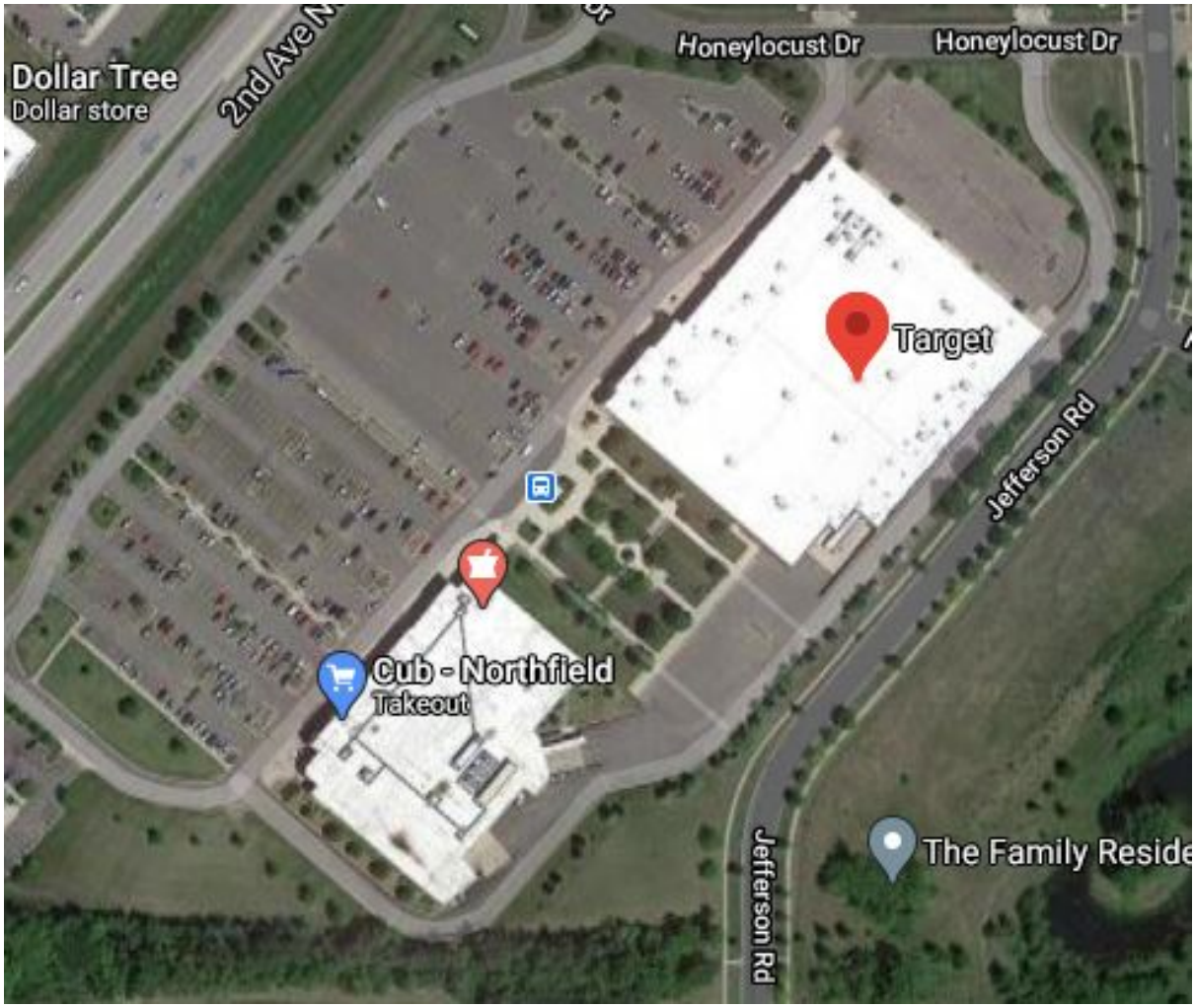
Adopting a zoning code that rejects sprawl in favor of dense urban development achieves myriad sustainable and economic benefits. Permitted to redevelop or sell unproductive off-street parking lots, more businesses/homes can fit into a given plot of land. Real estate will become more abundant, driving down land prices, while fostering a more vibrant community. Businesses

can pursue development strategies and better serve their customers, without sacrificing their plans in the name of parking, and homeowners can opt to park on the curb and redesign their driveways for superior uses. While paid parking applies to a limited slice of Northfield, minimum parking requirements will fundamentally change development patterns throughout the entire town, reaping sustainable benefits through more productive land use as well as parking demand abatement, economic benefits through decreased real estate values as well as more business owner/homeowner agency to pursue development strategies, and social benefits through a more dense, tight-knit community.

~20 Years: Parking Demand Study

By 2041, the Northfield Parking Authority will conduct a study on parking demand and supply to determine the feasibility of redeveloping the three downtown public parking lots. The implementation of paid parking will necessarily drive down demand for parking. Elimination of off-street parking requirements will allow private landowners to redevelop or sell unproductive parking lots, but it will not address the three public parking lots in Northfield's downtown. Subjected to pricing, these parking lots can generate revenue, but they also occupy valuable real estate in the downtown area. Public amenities, such as parks or community centers, can replace these lots or ownership can transfer hands to the private sector for business, office, and/or residential development. One of these parking lots lies in the Cannon River floodplain, making it a prime candidate for a park. The Northfield Parking Authority study will evaluate the utility of the three downtown public parking lots for residents and determine whether the City can allocate these valuable plots of real estate towards more productive uses in the private or public sector.

Appendix A[26]



[26] Google, "Target."

Appendix B[27]

[27] Google, "Northfield."

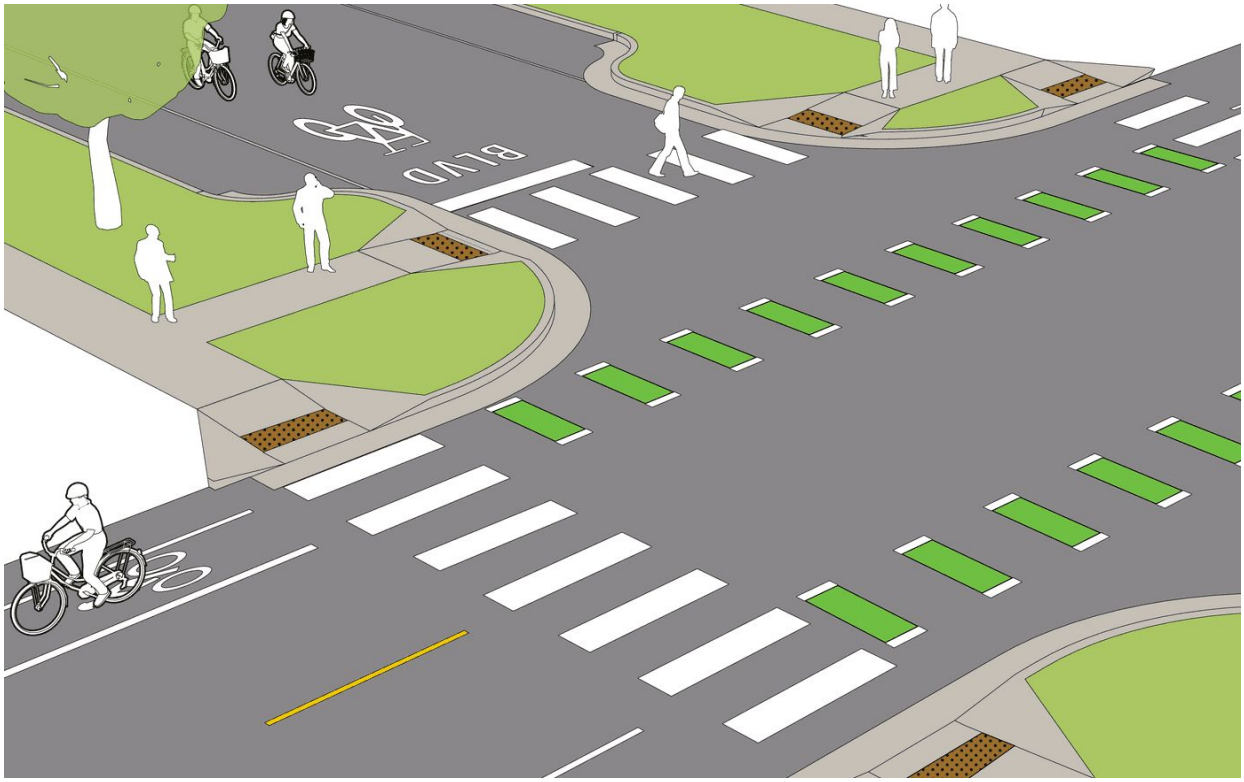
Appendix C[28]

[28] "Public Parking Lots Downtown Stillwater."

Appendix D[29]

[29] Klein, "To Market, To Market."

Appendix E[30]



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!1e3!4m8!1m2!2m1!1starget!3m4!1s0x87f6515248d6558b:0x30f5295cdb3e1f30!8m2!3d44.4336096!4d-93.1853406.

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