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ENTS310
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March 12, 2021

Affordable, Sustainable Housing in Northfield: A 20 Year Plan

INTRODUCTION

One of the most critical and most challenging goals for any city is having affordable, sustainable housing. This is an extremely difficult task, as it requires incorporating architectural, economic, environmental, and political experts, and asking them to coexist and compromise with one another (Barry, 2006; Downs, 2003; Hempel, 1999). This paper will identify a 20-year plan for Northfield to improve its sustainable, affordable housing.

To provide a framework on how to achieve affordable, sustainable housing, Michael Adabre and Albert Chan have devised a particularly useful methodology utilizing three key elements: critical barriers, critical success factors, and critical success criteria (Adabre & Chan, 2019; Chan & Adabre, 2020; Adabre, et al., 2020). Some areas of particular emphasis to them are utilizing available land efficiently, collaborating with developers to build high-quality properties on time, ensuring the needs of the residents are being centered, providing routine maintenance checks to ensure the buildings remain high-quality, and working with the broader community to raise support (see appendix for full list).

With regard to the goals for Northfield, it is unlikely that housing unaffordability (defined as housing costing more than 30% of one's annual income) can be entirely eliminated in the next twenty years; however, enough affordable housing can be produced that the focus can move away from providing emergency or transitional housing toward providing affordable, permanent housing. Furthermore, Northfield should focus on five specific goals for the next 20 years:

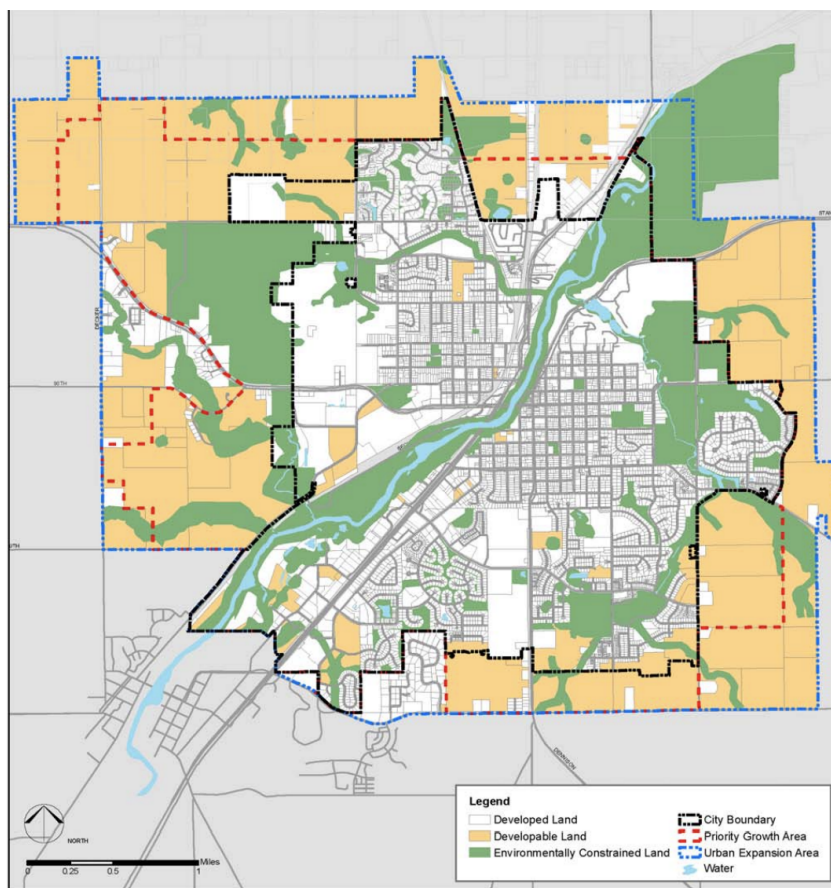
- 1) Prioritize mixed-use, higher-density housing developments
- 2) Incentivize energy-conscious building practices
- 3) Formalize private-public partnerships
- 4) Center the needs of low-income residents
- 5) Raise public awareness about affordable, sustainable housing

NORTHFIELD CONTEXT

To understand the aforementioned goals, and to demonstrate why they are both valuable and feasible, it is critical to understand the Northfield context. Northfield, which is a small town of approximately 20,000 people in southern Minnesota and part of the urban center of Rice County, struggles like so many other communities with creating affordable, sustainable housing. The average median income in Northfield is a relatively high \$57,866, although 22.1% of the population makes less than \$24,999 and another 23.0% makes less than \$49,999 (FY 2018-2020 Strategic Plan). Moreover, a significant percentage of Northfield residents struggle with unaffordable housing, particularly low-income residents; 20.8% of residents making less than \$34,999 annually pay more than 30% of their household income on housing, while 8.4% of those making between \$35,000 and \$74,999 and 1.4% of those making more than \$75,000 have a similar problem (FY 2018-2020 Strategic Plan).

Some of the problem of housing unaffordability in Northfield has to do with the tendency of residents to favor single-family, residential-only housing developments. 67.2% of Northfield housing units are owned, while 32.8% of residents rent. Northfield has also been a growing community, with increasing cost of housing; while 60.5% of residents' owner-occupied housing values are between \$150,000 and \$299,999, new units built between 2012 and 2016 have an average sale price of \$305,298. Additionally, for the 32.8% of residents who rent properties,

18.5% of the units cost less than \$500 per month, 71.2% cost between \$500 and \$1,499 per month, and 10.5% cost between \$1,500 and \$2,999 monthly (FY 2018-2020 Strategic Plan). Additionally, while the population is growing, housing is not being built at the same rate. This is due in part due to a lack of developable land and practical restraints like the Cannon River and Carleton College and St. Olaf College land holdings, as well as in part due to symbolic restraints as Northfield wants to retain its status as a quaint, historical, rural community. The map below from the 2008 City of Northfield Comprehensive Plan highlights the relatively limited amount of space Northfield still has to develop. Moreover, note much of the space for developable land exists outside of the Northfield borders in other townships.



DEVELOPABLE LAND

NORTHFIELD, MN
NORTHFIELD COMPREHENSIVE PLAN
Revised November 12, 2008
ACP-VISIONING & PLANNING, LTD.

Several other location specific details are also important to consider. The first of these is demographics. In particular, the two groups in Northfield who face the largest obstacles with regards to housing unaffordability are the Latinx community and the senior community. While Northfield is 87.4% white, with a lower percentage of people of color (17%) than the Minnesota average (24%) or the United States average (36%), race is still very relevant in Northfield. The second largest ethno-racial group in Northfield is the 7.2% of the population that identifies as Hispanic/Latino, and while there has been growing mobilization and calls for equity and attention to their needs, they are still disproportionately low-income and marginalized (Dernbach, 2020). Additionally, while Northfield has a population with a median age of 26.6, there is a significant population of seniors, as 13.6% of the population is over the age of 65. That percentage is also continuing to grow, and the FY 2018-2020 Strategic Plan estimated that as of 2020, there would be more seniors than school-aged children in Northfield. Thus, the needs of these two demographics must be considered when creating affordable, sustainable housing in Northfield.

Additionally, two other location-specific Northfield concerns are transportation and the climate. Northfield lacks reliable transportation and received only 4.5 points out of a possible 30 on the ACEEE/GPI Clean Energy Scorecard due to its relative lack of sustainable transportation strategies, location efficiency, public transit, efficient vehicles, and equitable transportation access. Fewer than 40% of low-income Northfield residents have access to high-quality transit. Another concern in Northfield is the climate, and in particular, flooding concerns due to Northfield's proximity to the Cannon River. Thus, both transportation access and consideration to potential flood damage must be considered when implementing affordable, sustainable housing in Northfield.

However, there is reason to be hopeful that Northfield is ready for affordable, sustainable housing. In the FY 2018-2020 Strategic Plan for Northfield, one of the six strategic priorities is affordable housing. Moreover, additional strategic priorities of “diversity, equity, and inclusion” and “climate change impacts” suggest that the city of Northfield is ready for a comprehensive, equity-conscious plan for affordable, sustainable housing. Additionally, the Northfield Climate Action Plan has set the goals of Northfield being 100% carbon neutral by 2030 and 100% carbon-free by 2040 which provides a valuable framework for sustainability efforts in Northfield. Thus, it is possible to have hope that Northfield can achieve significant progress with regards to affordable, sustainable housing.

Moreover, there are also many groups in Northfield already working on affordable, sustainable housing. One of the key players is the Housing & Redevelopment Authority. Their stated mission is to provide a wide variety of affordable, adequate, safe, and sanitary housing units to Northfield residents. They also demonstrate how the community balances their goals of affordable, high-quality housing and community/economic development, emphasizing their goals of both providing “housing opportunities to the entire housing spectrum” and maintaining Northfield’s “well-maintained blend of the historic and contemporary”. The Housing & Redevelopment Authority is given several resources to ensure adequate residential spaces, including funding through the Community Development Block Grant and the Minnesota Housing Finance Agency. Additionally, Chapter 34 of the Northfield Code entitled *Land Development Code* highlights the significant authority granted to the Housing & Redevelopment Authority, including with regards to zoning policy. The Housing & Development Authority also highlights several partners in housing, including federal partners such as the U.S. Department of Housing & Urban Development and USDA Rural Development, state partners such as the

Greater Minnesota Housing Fund and Minnesota Home Ownership Center, regional partners such as Three Rivers Community Action, Rice County HRA, Rice County Habitat for Humanity, Lloyd Management, and Dakota County CDA, and local partners such as the Northfield Area Chamber of Commerce and Community Action Center of Northfield. In particular, another critical player in Northfield housing policy is the Community Action Center of Northfield. The Community Action Center of Northfield is involved in assisting with emergency and transitional shelter as well as permanent housing. Their most notable recent development is their work building Hillcrest Village, which is a sustainable, affordable housing development that provides an incredibly valuable model for future projects, including this proposal. Thus, while Northfield continues to need work with regards to affordable, sustainable housing policy, many of the most important pieces necessary are already present in the community.

GOALS

Additionally, there is significant evidence supporting the importance of the aforementioned five focus areas.

The first goal presented in this proposal is prioritizing mixed-use, high-density housing, which many scholars strongly support (Patel, Saluja & Kapadia, 2018; Aurand, 2010; Voith & Crawford, 2004). Mixed-use land development refers to the existence of commercial, residential, and industrial buildings all in the same neighborhood, while high-density housing refers to including multi-family homes and townhouses in addition to single-family homes. The first reason to prioritize mixed-use, high-density housing developments is that they increase the number of housing units in a particular space. Given that “inadequate access to land” is a key barrier identified by Chan and Adabre and is a highly relevant concern in Northfield due to the lack of developable land, high-density housing is a valuable way to more efficiently use the

available land. Moreover, Andrew Aurand emphasizes that high-density developments are significantly correlated with an increased number of affordable housing units (2010). A second reason why mixed-use, high-density housing is valuable is with regards to transportation. Chan and Adabre identify “adequate accessibility to social amenities” as a critical success factor and “commuting cost from the housing development to public facilities” as a critical success criterion. Given the lack of reliable public transportation in Northfield and the economic and environmental costs of long commutes, by placing residential units and commercial spaces within the same development, mixed-use developments play a crucial role in minimizing spatial mismatch between low-income individuals and jobs and services, as well as in benefiting overall efficiency and sustainability of the community. Thus, because they limit sprawl, increase the number of affordable housing units, and improve access to jobs and services for low-income residents, mixed-use, high-density developments should be prioritized.

The second goal of this proposal is to incentivize energy-conscious building practices. Chan and Adabre identify “energy efficiency”, “reduced lifecycle cost of the housing facility”, and “environmental performance of the housing facility” as critical success criteria; however, affordable housing has often been built unsustainably due to a misconception that sustainability means less affordable. Kevin Foy does a particularly good job combatting this misconception and providing support for incentivizing energy-conscious building practices by demonstrating how investing in sustainable, energy-conscious building practices upfront can save money in the long run (2012). Foy highlights poor HVAC systems as a major concern, arguing poor indoor air quality can cause asthma and chronic headaches and, moreover, emphasizes many HVAC systems in low-income housing developments have formaldehyde in them, which is a carcinogen (p.43). Beyond the moral implications of this, there are also

economic concerns; treating these health conditions is very expensive and, because low-income residents may not be able to afford treatment, this leads to a significant drain on the overall public health system for all residents. Additionally, Foy further combats the narrative that sustainability and affordability are incompatible by highlighting relatively inexpensive practices with significant impact and emphasizing the long-term. He states that effective insulation, intelligently placed windows, solar panels, and/or properly sized and installed plumbing and appliances can save people up to three-quarters of their typical energy costs and will last longer than less sustainable constructions (p.46). Additionally, the money saved in energy, healthcare, and maintenance costs can be spent on other services, not only benefiting the low-income residents themselves, but the whole community by lowering crime and improving public image.

Other scholars also emphasize the importance of incentivizing sustainable, high-quality building practices and note the link between environmental sustainability and social and economic sustainability (Breyse, 2011; Susilwati & Miller, 2013). Chan and Adabre identify “marketability”, “aesthetically pleasing view of completed house” and quality performance of the project” as critical success factors; similarly, Isabelle Angulovski notes that by improving appearance, efficiency and quality of the home, sustainability can increase pride and connection to one’s community, which is associated with more community involvement, lower crime rates, and improved quality of life for all community residents (2014). Finally, Richard Voith and David Crawford acknowledge that while some housing units may become more expensive, some will also become less expensive and argue that, overall, sustainability is cost-effective; moreover, Voith and Crawford emphasize the importance of looking broadly at affordability and focusing not just on the cost of the housing unit or rent itself, but on maintenance, utilities, and transportation which is where they argue the most significant financial savings will be seen

(2004). Thus, in the long run, investing in sustainability upfront can actually decrease cost, as well as improve resident satisfaction, increase community connection, and benefit the environment.

The third goal of this proposal is to formalize public-private partnerships. “Inadequate public funding” is a key barrier identified by Chan and Adabre. Other scholars have noted that local governments are often more effective than state or federal governments at implementing effective housing policies due to their knowledge of the location-specific context, but they are often somewhat constrained by lack of funding (Beer et al., 2019). Scholars identify private-public partnerships as one of the most valuable ways to overcome these funding barriers (Yerena, 2019; Voith & Crawford, 2004). In particular, in the relatively small community of Northfield where the government often lacks funding, staff, and resources to successfully implement its policy initiatives and where there is a very active citizenry and a wide range of organizations, nonprofits, and colleges interested in getting involved, strengthening and adding to public-private partnerships should be a priority.

The fourth goal of this proposal is to center the needs of low-income residents. Chan and Adabre identify “functionality of the housing facility” and “end user’s satisfaction with the housing facility” as critical success criteria; moreover, several studies have shown that resident input is critical for success but too often ignored (Bullard, 2007; Powell, 2007; Reid, 2019; Szudi & Kovacova, 2016). Therefore, the needs of low-income residents must actively be sought out, listened to, and accounted for in any affordable, sustainable housing plan in Northfield.

The fifth goal of this proposal is to raise public awareness about affordable, sustainable housing. One limitation to affordable, sustainable housing has always been that many people fear that it conflicts with economic development objectives, making it politically unpopular and

stopping many city governments (Peterson, 1981; Molotch, 1981). The aforementioned data helps suggest that these fears and disinterest are often rooted in misconceptions about what affordable housing looks like; in reality, properly invested in affordable, sustainable housing benefits the community far more than it hurts it. Moreover, as the public becomes increasingly knowledgeable about and supportive of affordable housing policies, it will be easier to gain the resources necessary for success.

With this framework, it is now possible to specifically analyze what implementation of this goals will look like in Northfield.

MIXED-USE, HIGH-DENSITY LAND DEVELOPMENT

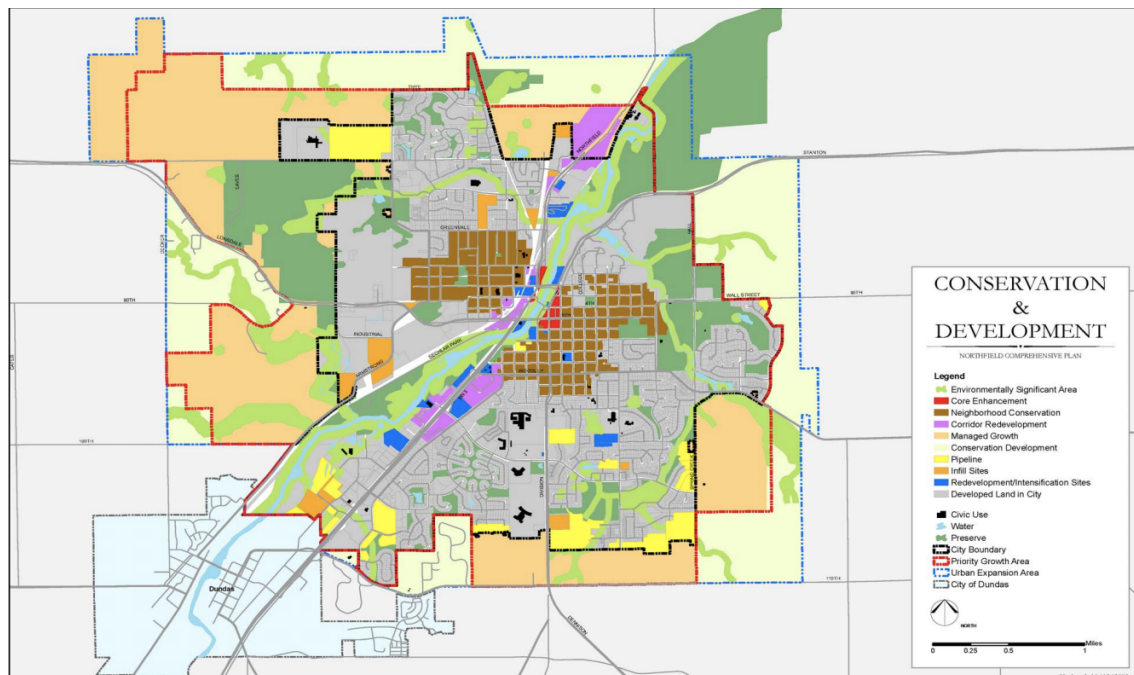
As previously mentioned, mixed-use, high-density housing is valuable because it increases the supply of affordable housing, decreases the amount of spatial mismatch, and is consistent with sustainable development goals. While some mixed-use, high-density developments include people of all income brackets, it makes the most sense for Northfield to prioritize placing low-income residents in these new developments. There are several reasons to make this new development a primarily low-income housing development. The first reason is because Chan and Adabre list “community opposition to affordable housing” as a critical barrier; even though properly invested-in low-income housing has been found not to decrease property values and most Northfield residents support affordable housing in theory, many wealthier residents still prefer to live in residential-only, single-family home neighborhoods (Aurand, 2010; FY 2018-2020 Strategic Plan). Thus, some potential community conflict can be avoided by focusing on this development as a space for low-income residents only, rather than placing it in a mixed-income community.

Additionally, while Chan and Adabre identify “income segregation” as a critical barrier and this plan may lead to some income segregation, they also identify “adequate infrastructure supply” as a critical success factor and “waiting time of applicants for the housing development”, “house price in relation to income”, and “rental cost in relation to income of household” as critical success criteria. If this space is focused only on low-income residents, housing supply is more likely to meet the demands of the residents and waiting times will be decreased; moreover, given that wealthier residents often lead to gentrification processes where prices increase, focusing on low-income residents helps keep prices affordable. Therefore, this housing development should be focused on low-income residents.

Secondly, Chan and Adabre emphasize “good location” as a critical success factor and consideration still needs to be had about where to build this development. Northfield has limited developable land, but there are still multiple potential locations for a development. Moreover, while Northfield has traditionally prioritized greenfield development, a growing population requires incorporating other forms of growth. Northfield residents have not come to a clear consensus, as currently 36% of Northfield residents prefer building new units following a redevelopment/intensification approach, 37% prefer infill growth, and 26% prefer greenfield growth (Northfield Land Use Plan). However, scholarly research agrees with the plurality of Northfield residents and suggests the mixed-use housing development should follow infill growth as infill growth places the development close to, but not directly in, already developed locations, benefiting transportation access while minimizing potential community opposition due to perceived changes to the status quo.

Moreover, a mixed-use, high-density development should be located in either the core enhancement or managed growth areas of Northfield, which are the red and light brown sections

of the following map, taken from the Land Use chapter of the 2008 Northfield Comprehensive Plan.



This proposal recommends building in the areas of managed growth rather than core enhancement for several reasons. Firstly, core enhancement is likely to be more politically difficult than managed growth. Secondly, given that core enhancement involves building near the Cannon River, additional precautions would need to be taken to protect from flood damage, increasing cost and risking long-term success. Thirdly, although it may seem like the core enhancement area places low-income residents closer to jobs, the reality is that many low-income residents work in neighboring communities at factories, not in downtown Northfield. Additionally, it is also important to remember that, given the 20-year timeline for this proposal, it is likely that more than one development will be built so other developments may eventually end up being built in the core enhancement zone.

Finally, unlike many other locations, Northfield does not have the Chan and Adabre-identified barrier of “zoning restrictions on land” that prevent mixed-use zoning.

Northfield already allows and values mixed-use zoning. However, Chan and Adabre identify “incentives for developers to include affordable housing/sustainable strategies in their projects” as a critical success factor and list other barriers as “delays in government approval processes”, “inadequate incentives for private investors”, and “high approval cost due to high taxes and developer fees”, all of which are relevant in Northfield as there are currently no incentives for mixed-use housing developments (ACEEE/GPI Clean Energy Scorecard, 2019). Scholars particularly point to speeding up approval processes and removing regulatory barriers as valuable ways of incentivizing mixed-use development (Voith & Crawford, 2004). Therefore, Northfield should offer incentives to developers, and in particular, focus on eliminating or reducing permit fee costs and expediting the development approval processes for developers working on mixed-use, high-density developments, although tax abatements or other bonuses could also be offered. Permit fee reductions have already been somewhat discussed in Northfield, so these should be the first priority. Additionally, Chan and Adabre identify “mandatory inclusion of affordable unit policy in developer’s projects” and “access to low interest housing loans to developers” as critical success factors; while it would be valuable to work with the Housing & Redevelopment Authority on providing low interest loans, there is concern that mandating inclusion may lead to increased tension with developers. For this reason, this step should only be implemented later in the process, and only if additional pressure is needed to incentivize affordable housing growth.

However, these steps prioritizing mixed-use, high-density developments should lead to an increase in affordable housing in Northfield.

ENERGY-CONCIOUS BUILDING PRACTICES

As previously mentioned, the goal of this proposal is not to create only affordable housing, but affordable, sustainable housing. Moreover, the aforementioned information highlights that sustainability can be actually be cost-effective, particularly when focusing on a long-term, broad definition of affordability that looks not only at the cost of rent itself, but at utilities, maintenance, health, transportation, and other meaningful categories. Furthermore, sustainability is known for its broadness, and a successful policy will incorporate sustainability in areas including, but not limited to, transportation, construction, design, and management (Pullen et al., 2010). Additionally, a successful policy will incorporate sustainability practices throughout the building process, including in design, material-collection, construction, and maintenance processes (Susilawati & Miller, 2013). Thus, while Chan and Adabre list “high cost of sustainable building materials and/or technologies” as a potential barrier, the reality is that virtually every community can find some ways to incorporate sustainability.

In the case of Northfield, there are a variety of potential areas to explore. Some key priorities should be taking care to properly install appliances and utilizing high-quality materials for the HVAC systems; additionally, utilizing Energy Star windows, utilizing solar energy, using ecofriendly and/or local building materials, selecting native plants, building water tanks for water efficiency, and installing programmable thermostats are other feasible, beneficial ideas. Additionally, while the Northfield city government does not have the authority to change building code, efforts can and should be made to incentivize sustainable building practices. This can be done through offering incentives such as tax credits or abatements, bonds, expedited permitting, or LEED-certification incentives.

Another area Northfield should prioritize is its relationship with Xcel Energy. Northfield gets their energy from Xcel Energy and has begun collaborations to be more energy-efficient in

both some of the low-income neighborhoods and downtown areas, but this should be expanded to additional areas of Northfield, including the mixed-use, high-density developments. Moreover, given that this program is focused only on energy efficiency and does not include water efficiency, conversations should begin around how to be more water efficient. Additionally, while some efforts have been made to bring in Xcel Energy's Home Energy Squad and Clean Energy Resource Teams to low-income neighborhoods to help weatherize homes, expanding this program would be valuable; moreover, with new properties that are properly invested in from the start, there can be an increased focus on maintenance rather than repairing or replacing.

Finally, incentives can also be given to citizens, both in these housing developments and those not, for choosing to invest in sustainable housing and transportation options, benefiting these citizens and placing pressure on developers to adopt more sustainable building practices.

All in all, prioritizing energy-conscious building practices in these ways will help make these developments sustainable and successful.

PRIVATE-PUBLIC PARTNERSHIPS

As previously mentioned, while local governments often have good ideas for implementing housing policy, they often lack necessary staff, resources, and funding. Private-public partnerships can help remedy this problem. Northfield already utilizes several private-public partnerships; as previously discussed, the Northfield Housing & Redevelopment Authority already has formal relationships with several organizations: U.S. Department of Housing & Urban Development, USDA Rural Development, Greater Minnesota Housing Fund and Minnesota Home Ownership Center, Three Rivers Community Action, Rice County HRA, Rice County Habitat for Humanity, Lloyd Management, Dakota County CDA, Northfield Area Chamber of Commerce, and Community Action Center of Northfield. However, these are not the

only organizations that work on housing in the area. In addition to continuing to strengthen these relationships, for example by scheduling regular meetings or through hosting co-led panels, the Housing & Redevelopment Authority should expand and formalize their relationship with Rice County Neighbors United and Growing Up Healthy as, while they do meet with both groups occasionally, neither is formally listed as a partner. While formal labelling of these two organizations as a partner does not guarantee increased collaboration, it shows a prioritization of equity-focused housing policy and is highly likely to be associated with stronger, more beneficial relationships and increased housing policy success.

It would also be valuable to increase collaboration with other cities and townships, especially given the fact that so much of the available land is located in townships bordering the city of Northfield. Scholars Richard Voith and David Crawford identify sharing resources regionally and providing incentives for location growth in new areas as crucial ways to provide affordable, sustainable housing (2004). Thus, expanding collaboration with regional partners in Rice County as well as with neighboring local governments would be a valuable process. In addition, providing more information on the Housing & Redevelopment Authority website about their relationships with neighboring cities' governments would be beneficial.

Moreover, the aforementioned sections also invite private-public partnerships. It would be valuable if the commercial properties in the mixed-use development worked with the city government and developers to assist with the residential spaces in the development, possibly incentivized through tax benefits. Moreover, to aid with local, sustainable building practices, it would be valuable to provide developers incentives such as additional tax abatements, expedited development processes, and permit fee reductions to work with local companies, including appliance stores, construction stores, or gardeners. Not only would this benefit sustainability and

lower shipping costs, but it would also put more money into the Northfield economy. It would also be valuable for the city government to identify certain developers with a strong interest in affordable, sustainable development; for example, Schmidt Homes is working with the Community Action Center on Hillcrest Village, making them not only a valuable potential partner, but a valuable tool in educating other developers about affordable, sustainable development.

Additionally, given the strong presence of both St. Olaf College and Carleton College in Northfield, it would be valuable to collaborate with both schools with regards to affordable, sustainable housing. Many students are unaware of the state of affordable housing in Northfield, and even though many students will only be here for four years, educational experiences such as having Northfield government officials or advocacy organization members come speak at freshman orientation or other events could be valuable in raising awareness among college students and encouraging more students to advocate for affordable, sustainable housing policies. Additionally, while both schools are already doing some work, Carleton College and St. Olaf College should continue expanding their involvement in terms of community engagement. One potential option is increased outreach in K-12 schools, as educating youth is important in the long-term success of a project and it may be hard for the Northfield government and/or advocacy organizations to work in the schools, due to both time/energy constraints and due to potential pushback from parents. College students could also work with advocacy organizations to investigate the state of current affordable housing, speak to low-income residents about their needs, advocate at the state/federal level, and help with some minor building projects. Thus, the colleges can provide valuable bodies to help with affordable, sustainable housing in Northfield.

Finally, another private-public partnership that should be utilized is with citizens directly. The Community Action Center's Hillcrest Village solicits donations from individual residents, which can be done on a one-time or recurring pattern, or by donating shares stock, giving from a Donor Advised Fund, enrolling in an electronic fund transfer, and/or by gifting an estate or IRA distribution. Given that Northfield has an engaged, relatively wealthy population that generally supports affordable housing, utilizing a similar program could provide valuable funding. Additionally, expanding beyond just individuals, business and community partners could help advertise and raise funding, either by encouraging donations within their organization or by pledging to match donations up to a certain amount; in particular, the colleges, in addition to the aforementioned student outreach, can also serve a potential valuable donor.

In these ways and more, utilizing private-public partnerships can help the Northfield city government achieve successful affordable, sustainable housing.

CENTER NEEDS OF LOW-INCOME RESIDENTS

As previously mentioned, a housing development will only be successful if it meets the needs of the residents themselves. For example, aforementioned research highlights the importance of transportation access and maintenance costs in addition to the cost of the housing unit itself (Reid 2019). To ensure that the needs of low-income residents are centered, Northfield must work proactively. While in the past this has been a challenge, for example with the difficulties residents of Northfield Estates had with getting Northfield government officials to hear and address their concerns around cockroach infestations and other unsuitable conditions, progress has already been started to be made (Gerhardt, 2017). However, to minimize burdens on one disproportionately marginalized community, it would be valuable for Northfield to create a formal working group with the Latinx community on housing. This group could include either

specific individuals chosen for their interest in affordable housing or it could be a dynamic group inviting whoever from the community is available, but the Northfield government should regularly meet with Latinx residents to discuss this topic. This will ensure that the Northfield government is directly hearing from and considering this often-marginalized community.

Moreover, to ensure that residents are satisfied with the housing development, it is critical to understand that the work does not end when a housing development is built. Continuous work needs to be done to make sure that the buildings are maintained. Chan and Adabre identify “safety performance” and “quality performance of the project” as critical success criteria. In this regard, sustainability is valuable in that it will make maintenance much easier; conversations with some developers show that there is concern that Viking Terrace and Florella’s Park have too much decay to attempt to fix them, while these new developments will begin as high-quality investments, meaning only fixes as opposed to dramatic changes will be necessary. However, active efforts need to be taken to ensure that these developments remain high-quality, functional spaces. In addition to the aforementioned working group which can speak about concerns in the community, it would be valuable to partner with advocacy organizations such as Growing Up Healthy and Rice Neighbors United to do routine maintenance checks. Additionally, incentives can be given to developers who commit to providing long-term maintenance on housing units in these mixed-use developments.

Therefore, by making it a priority to hear from low-income residents directly, these housing developments can remain successful in the long-term.

PUBLIC SUPPORT

While many Northfield residents are already supportive of affordable, sustainable housing, many residents remain either apathetic or actively opposed to such policies, often due to

misconceptions about what affordable, sustainable housing looks like in reality. Carmen Siriani emphasizes that for affordable, sustainable housing to exist, there must be democratic institutionalism and professionalization with widespread engagement and capacity for resiliency (2020). For this reason, the city of Northfield must take a proactive role in ensuring there is community dialogue and work to identify misconceptions within the community about affordable, sustainable housing.

This in large part can be done through community outreach, by having government officials or advocacy organizations speak to the public about the state of affordable housing in Northfield and why affordable, sustainable housing should be a goal. Collaborations with private-public partners and with the colleges could also help with education campaigns. Another valuable project would be to publish a regular report on the state of affordable, sustainable housing in Northfield; given that this project is scheduled to take 20 years, it is likely that there will be new concerns that arise and adjustments that need to be made over time. While ideally this would be an annual or biannual report, given the many priorities of Northfield, a report every 3-5 years may be more practical. Chan and Adabre's critical barriers, success factors, and criteria (seen in the appendix) could serve as a framework, but criteria can be added or removed as necessary. This can help inform both the Northfield government and citizens about affordable, sustainable housing to ensure that policies are successful.

CONCLUSION

As with virtually every community, Northfield is struggling with the issue of how to create affordable, sustainable housing. While it is clear that there are no obvious answers, the benefits of investing in sustainable, affordable housing are clear; beyond the moral argument for providing housing, properly investing in affordable, sustainable housing does not lead to

decreased property values, and can actually improve economic success of a community by improving health conditions, minimizing maintenance and transportation costs, improving efficiency and tax money usage, and creating a stronger sense of place (Foy, 2012; Nelson, et al., 2020). In particular, this proposal argues the five following areas should be the focus for Northfield for the next 20 years: incentivizing the creation of mixed-use, higher-density housing developments, encouraging more energy-conscious building practices, formalizing more public-private partnerships, centering the needs of low-income residents, and raising overall awareness about affordable, sustainable housing.

However, affordable, sustainable housing policy is very complex, and this proposal is in no way comprehensive (Chen, 2007; Siriani, 2020). The first limitation of this paper is that it assumes most residents in the mixed-use, high-density neighborhoods will rent their properties. Homeownership is inextricable from equity; therefore, it would also be valuable to further explore flexible financing policies, such as creating lower down-payment requirements and/or lower interest rates. However, these are mostly policies at the state and federal level, rather than the local level. Secondly, and somewhat connected to the previous limitation, this paper primarily focuses on local government. However, Northfield also works with the state and federal government on affordable, sustainable housing, such as through HUD housing projects and the HRA's work with the Minnesota Housing Finance Agency, so further information about state and federal relationships would be valuable. Thirdly, this paper primarily focuses on building new developments rather than revitalizing existing low-income housing units. Emma Dempsey and James Harren provide some policy proposals for existing Northfield buildings, but further research would also be valuable (2018). However, while this proposal is not fully

comprehensive, it still does provide a valuable framework for understanding sustainable, affordable housing that emphasizes its long-term economic and community benefits and provides several policy recommendations for Northfield for the next 20 years.

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APPENDIX

Critical Barriers:

Component 1. Green retrofit-related barriers	<ol style="list-style-type: none"> 1. Public housing facilities have been abandoned by the government 2. Tight credit conditions 3. Poor maintenance culture of existing affordable housing units 4. Income segregation
Component 2. Land market-related barriers	<ol style="list-style-type: none"> 1. Lack of or weak enforcement of housing supply-related land use planning policies 2. High cost of serviced land 3. High interest rates 4. High inflation rates
Component 3. Incentive-related barriers	<ol style="list-style-type: none"> 1. High cost of sustainable building materials and/or technologies 2. Delays in government approval processes 3. Inadequate access to land 4. Inadequate incentives for private investors
Component 4. Housing-market related barriers	<ol style="list-style-type: none"> 1. Community opposition to affordable housing 2. Income inequality 3. Inadequate affordable housing policy and/or framework
Component 5. Infrastructural-related barriers	<ol style="list-style-type: none"> 1. Zoning restrictions on land 2. High approval cost due to high taxes and developer fees 3. Inadequate infrastructural development 4. Inadequate public funding

Critical Success Factors:

Component 1. Developers' enabling critical success factors	<ol style="list-style-type: none"> 1. Mandatory inclusion of affordable unit policy in developer's projects 2. Access to low interest housing loan to developers
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	<ol style="list-style-type: none"> 3. Incentives for developers to include affordable housing/sustainable strategies in their projects 4. Improved supply of low cost developed land by governments
Component 2. Household-demand enabling critical success factors	<ol style="list-style-type: none"> 1. Monitoring process for completed houses 2. Government provision of housing subsidies to households 3. Adherence to project schedule
Component 3. Mixed land use critical success factors	<ol style="list-style-type: none"> 1. Adequate accessibility to social amenities 2. Good location for housing projects
Component 4. Land use planning critical success factors	<ol style="list-style-type: none"> 1. Adequate infrastructure supply by government 2. Formulation of sound affordable housing policies

Critical Success Criteria:

Component 1. Household satisfaction critical success criteria	<ol style="list-style-type: none"> 1. Functionality of the housing facility 2. End user's satisfaction with the housing facility 3. Maintainability of the housing facility 4. Safety performance
Component 2. Stakeholders' satisfaction critical success criteria	<ol style="list-style-type: none"> 1. Timely completion of the project 2. Project team satisfaction 3. Limited occurrences of disputes and litigation
Component 3. Housing operation cost critical success criteria	<ol style="list-style-type: none"> 1. Energy efficiency 2. Reduced lifecycle cost of housing facility 3. Environmental performance of the housing facility
Component 4. Time measurement critical success criteria	<ol style="list-style-type: none"> 1. Marketability of the housing facility 2. Waiting time of applicants for the housing development 3. Construction cost performance of the housing facility
Component 5. Location affordability cost critical success criteria	<ol style="list-style-type: none"> 1. Reduced public sector expenditure 2. House price in relation to income 3. Commuting cost from the housing development to public facilities 4. Rental cost in relation to income of household
Component 6. Quality-related critical success criteria	<ol style="list-style-type: none"> 1. Quality performance of the project

	<ol style="list-style-type: none"> 2. Aesthetically pleasing view of completed house 3. Technology transfer 4. Technical specification of housing
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