

The Future of Affordable, Sustainable Housing in Northfield, MN

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Introduction

In this paper, I will lay out a plan for what the city of Northfield, Minnesota can do over the next twenty years to implement a robust level of sustainable, affordable housing. This paper will begin by providing some background information and making the case for why Northfield needs more housing options that are both sustainable and affordable. It will then describe the twenty-year plan that I envision for Northfield, a plan involving sustainability-oriented renovation of existing affordable housing, the development of new sustainable, affordable housing, and a network where parties involved in the aforementioned processes can collaborate more efficiently, share resources, and learn from one another. Next, the paper will provide an overview of some important criteria to follow in order to successfully realize the steps outlined in my plan. The paper will conclude by situating the elements of my project on a twenty-year timeline.

Executive Summary

In keeping with the spirit and letter of the 2008 Comprehensive Plan, the 2019 Climate Action Plan, and the Land Development Code, Northfield should undertake a multi-pronged strategy over the next 20 years in order to implement housing that is both sustainable and affordable. Efforts should be made to green existing affordable housing, importantly including but not limited to mobile home parks like Viking Terrace. Simultaneously, new affordable housing should be developed in accordance with sustainable practices. Northfield can learn from the recent example of the Community Action Center's Zero-Energy Ready Homes project, applying similar strategies in terms of both partnerships and technical processes. Development closer to the center of the city, in currently predominantly single-family home areas, should be prioritized, but development in other spaces should not be ruled out and will become an

increasingly attractive option over time. The area considered by some to be a “second downtown,” in the southwest corner of the city, may be an especially promising example. Along the way, Northfield should seek to actively engage developers with sustainability advocates and eventually develop a positive feedback loop wherein the successful implementation of affordable, sustainable housing begets more of the same.

Background

Today, Northfield faces a shortage of affordable housing. According to the 2008 Comprehensive Plan, approximately “35% of the city’s housing is priced within the \$200,000 to \$300,000 range, with up to 10% also priced lower in the \$100,000 to \$200,000 range.”¹ While these affordable housing options work for many Northfield residents, they remain out of reach for many others. The Comprehensive Plan recognizes that “there are a number of residents who are completely priced out of home ownership in Northfield.”¹ The problem especially impacts working-class families with only one wage earner (employed in Northfield) in the household. For these households, “the average wage can only support housing priced up to \$119,100, which is significantly lower than the median price of housing in Northfield, and almost out of range for the purchase of any housing currently on the market.”¹ As a result of the current situation, “there has been ‘leakage’ in the housing market to more affordable towns. Such communities have attracted homebuyers who work in Northfield’s service and industrial sectors, as well as those on moderate income who want more house for their money.”¹ This “leakage” is likely to have a detrimental effect on Northfield’s local economy, and it clearly poses a problem for environmental sustainability, as it requires that more people commute longer distances to get to work.

¹ “Comprehensive Plan for Northfield” 11.D

In the United States, housing is commonly considered to be affordable when a household is spending no more than 30 percent of their income on housing. Using data from the US Census, the 2012 Rice County Housing Study found that in Northfield, “In 2000, only 16.3% of all owners reported paying 35% or more of their income for housing. By 2010, this percentage had increased to 26.3%, which could be a reflection of how the recession has impacted homeowners.”² Between 2000 and 2010, the percentage of households in need of more affordable solutions increased by ten percent, a concerning trend. While I was not able to find figures from the years after 2010, I also found little to no reason to believe that these numbers have decreased. In fact, it stands to reason that the ongoing COVID-19 pandemic has exacerbated the issue severely, threatening even more Northfield households.

The current shortage harms Northfield generally, but of course the direct impact is borne by real, live individuals, those who struggle to find affordable housing in Northfield themselves. As a group, Northfield’s Latinx community suffers disproportionately. Northfield is currently approximately 88 percent white and nine percent Latinx/Hispanic. According to the United States Census data from 2018, while the poverty rate in Northfield in 2018 was 10.21 percent overall, the rate was over three times higher for Northfield’s Hispanic population, at 35.17 percent.³ In terms of housing, the Latinx community “largely clusters into two trailer parks and several run-down apartment buildings, separated from the colleges and historic downtown by highways and a river.”⁴ While by no means whatsoever a monolith or a stand-in for all economically disadvantaged individuals and communities, the situation of the Latinx population of Northfield is deserving of special consideration for the purposes of this paper because it helps

² “City of Northfield.” *Rice County Housing Study*.

³ “Northfield, Minnesota Population 2021”

⁴ Dernbach

to illustrate two of the intersecting issues that make achieving affordable, sustainable housing in Northfield so critical.

First of all, the majority of the affordable housing that exists today is very unsustainable. The 2012 Rice County Housing Study found that “[o]f the 211 mobile homes in Northfield, approximately 24% were rated as being in sound condition, and 23% require minor repair. Approximately 26% of the mobile homes need major repairs and 57 mobile homes are dilapidated and beyond repair. The highest percent of mobile homes (27%) in the City of Northfield are dilapidated.”⁵ Unsound facilities can negatively impact a home’s sustainability, both in environmental and economic terms. For example, according to Northfield Human Rights Commission Vice-Chair Mar Valdecantos, at Viking Terrace, the foremost mobile home park that houses a significant portion of the Latinx community, the water has to run continuously in the winter in order to prevent the pipes from freezing. As a result, the residents of Viking Terrace use far more water per capita than the rest of the city. The resulting waste is a highly unsustainable practice, both economically and environmentally. Secondly, the Latinx population in Northfield is rapidly expanding. In the last twenty years, the community has “nearly doubled to more than 1,700, nearly 9 percent of the population.”⁶ It would be reasonable to infer that the population will continue to grow over the next twenty years, which would in turn suggest that the demand for affordable housing will continue to increase, although, to be clear, this projected development does not in and of itself necessitate such an effect.

Economic concerns aside, environmental sustainability is a good in and of itself, as Northfield recognizes in documents like the 2008 Comprehensive Plan and the 2019 Climate Action Plan. Sustainability is a key component of a just, equitable, and stable society, as well as

⁵ “City of Northfield.” *Rice County Housing Study*.

⁶ Dernbach

an important front in the fight against climate change. We have an obligation not only to the planet, but to our communities and future generations, to conserve resources and establish systems that work for everybody in the years to come. Furthermore, when it comes to housing, sustainability and affordability are not mutually exclusive by any means. Maliene et al finds that affordable housing is “one of the primary issues necessary to address in creating sustainable communities,”⁷ and on the other half of the coin, Susilawati and Miller synthesize other studies and come to the observation that “there is strong evidence supporting the view that cost barriers are perceptual rather than real (van Hal, 2007) and that the benefits of sustainability outweigh the costs (Power, 2008).”⁸ Sustainability and affordability can be seen to complement each other.

Putting It Together: Overall Goal

Considering the unsustainable state of current affordable housing, the expected increase in demand for affordable housing in the years to come, and the ecological necessity of sustainable development, the creation of housing that is both affordable and sustainable should be considered a high priority for the city of Northfield. Northfield’s Comprehensive Plan from 2008 addresses questions of both affordability and sustainability, but separately. The third objective of the plan asserts that “the City should assist in providing affordable housing.”⁹ The fourth proclaims that “the City will encourage homes to be well-maintained, environmentally friendly and energy efficient.”⁹ No current objective encompasses both simultaneously, but Northfield should seek to do just that nevertheless: through its actions, even if not with its words. Over the next twenty years, Northfield should take concrete steps to help provide housing sustainable housing to the people who need affordable housing currently and to the growing

⁷ Maliene et al

⁸ Susilawati and Miller, citing van Hal and Power

⁹ “Comprehensive Plan for Northfield” 11.E

number of people who will need it in the future. Those steps can be accomplished in accordance with the multi-pronged approach outlined below.

Prong 1: Improve Sustainability of Existing Affordable Housing

The city of Northfield has already expressed a will to upgrade existing affordable housing in the 2019 Climate Action Plan. Objective 3.6 of the housing section of the plan states Northfield's intent to "research available funding for programs that rehab existing rental or single-family home-owner properties."¹⁰ Even more to the point, Objective 3.10 recommends that the city "encourage the availability and upgrading of manufactured home parks for affordable housing."¹⁰ Energy efficiency is a critical component of sustainability and offers a promising avenue for focusing the city's efforts. Dempsey and Harren advocate for a similar focus in their 2018 paper "Sustainable Development of Existing Buildings in the City of Northfield." They observe that "the 2015 Minnesota Energy Code mandates minimum insulation capacity of windows and proper insulation technique and capacity for the insulation of walls, attics, and basements for different climate zones in Minnesota, and that "therefore the state already mandates minimum standards for buildings that provide a baseline for the energy efficiency of Northfield buildings."¹¹ They recommend that in order to determine which buildings need upgrades, Northfield should implement some type of energy benchmarking policy. As they note, "Northfield began benchmarking some of its public buildings in 2014 using the Minnesota B3 and Energy Star benchmarking tools,"¹² but this process can be extended to private buildings as well, albeit not as easily. "Because privacy forbids Northfield to track each residential building's energy use," Dempsey and Harren explain, "Northfield should encourage

¹⁰ "Northfield Climate Action Plan"

¹¹ Dempsey and Harren 8, citing 2015 Minnesota Energy Code

¹² Dempsey and Harren 11

energy benchmarking for individual homes through an education campaign.”¹³ I would take their recommendations a step further. The city could produce and distribute educational materials with a particular focus on sustainability, allowing residents to more easily identify sustainability-related issues and notify the city when their home is in need of renovation. Northfield is currently involved with Xcel’s Partners in Energy program, which aims to help communities “develop an energy action plan.”¹⁴ This partnership could provide significant benefits at every stage of this effort, in the production and distribution of educational materials, as well as in working to address the issues that residents end up identifying. Another group that I expect to contribute significantly to this prong of my plan is the Home Matters Residential Rehab Program. This program, sponsored by the Northfield Housing and Redevelopment Authority and the Dakota County Community Development Agency, provides up to \$10,000 to income-qualified individuals for certain home repairs, including roof and gutter replacement, foundation repairs, HVAC systems (heating/AC), and electrical and plumbing systems.¹⁵ This service can help to improve the energy efficiency of affordable housing, resulting in more sustainable practices.

Prong 2: Develop New Affordable, Sustainable Housing

The second prong of my plan involves developing new sustainable, affordable housing that checks the following boxes: density, variety, and central location. Northfield should strive for density in new developments, because “[g]reater residential density is associated with... a greater number of affordable housing units.”¹⁶ The city should aim for a variety of housing types in new development as well, because both the scholarly literature and the city’s own published

¹³ Dempsey and Harren 16

¹⁴ “Partners in Energy Overview”

¹⁵ “Home Matters Residential Rehab Program”

¹⁶ Aurand 1030

documents, including the Comprehensive Plan, the Climate Action Plan, and the Land Development Code, view this factor as an important priority. Aurand finds that “[t]he relationship between the variety of housing types and the number of affordable rental units is very strong.”¹⁷ Additionally, “[a] neighborhood with a greater variety of housing types is more likely to have a greater quantity of affordable rental units than a low-density neighborhood consisting exclusively of single-family homes,”¹⁸ demonstrating the importance of neighborhood density as well as variety of housing types. Northfield has also expressed an intent to promote variety in housing types. Objective 3.1 of the Climate Action Plan housing section is to “Encourage private developers to provide a variety of housing options by providing financial assistance, assistance in planning, building, and renovation, reducing right-of-way and street widths, waiving various City fees, reducing minimum lot sizes and increasing densities, consistent with the Comprehensive Plan.”¹⁹ Both the Comprehensive Plan and the Climate Action Plan emphasize the need for neighborhood density and a variety of housing types. The Land Development Code also makes reference to variety as an important consideration. Point 1.1.5 expresses an intent to “[e]ncourage the development of neighborhoods that incorporate a variety of housing types to serve the needs of a diverse population.”²⁰ Finally, whenever possible, Northfield should strive to build infill development close to the center of the city. One study identifies “adequate accessibility to social amenities” as a “critical success factor” of sustainable, affordable development,²¹ and in general, the more central areas of Northfield have a higher concentration of social amenities such as small businesses and public buildings. Point 1.1.3 of the Land Development Code states a will to “[e]ncourage growth in infill locations as the desired

¹⁷ Aurand 1030

¹⁸ Aurand 1032

¹⁹ “Northfield Climate Action Plan”

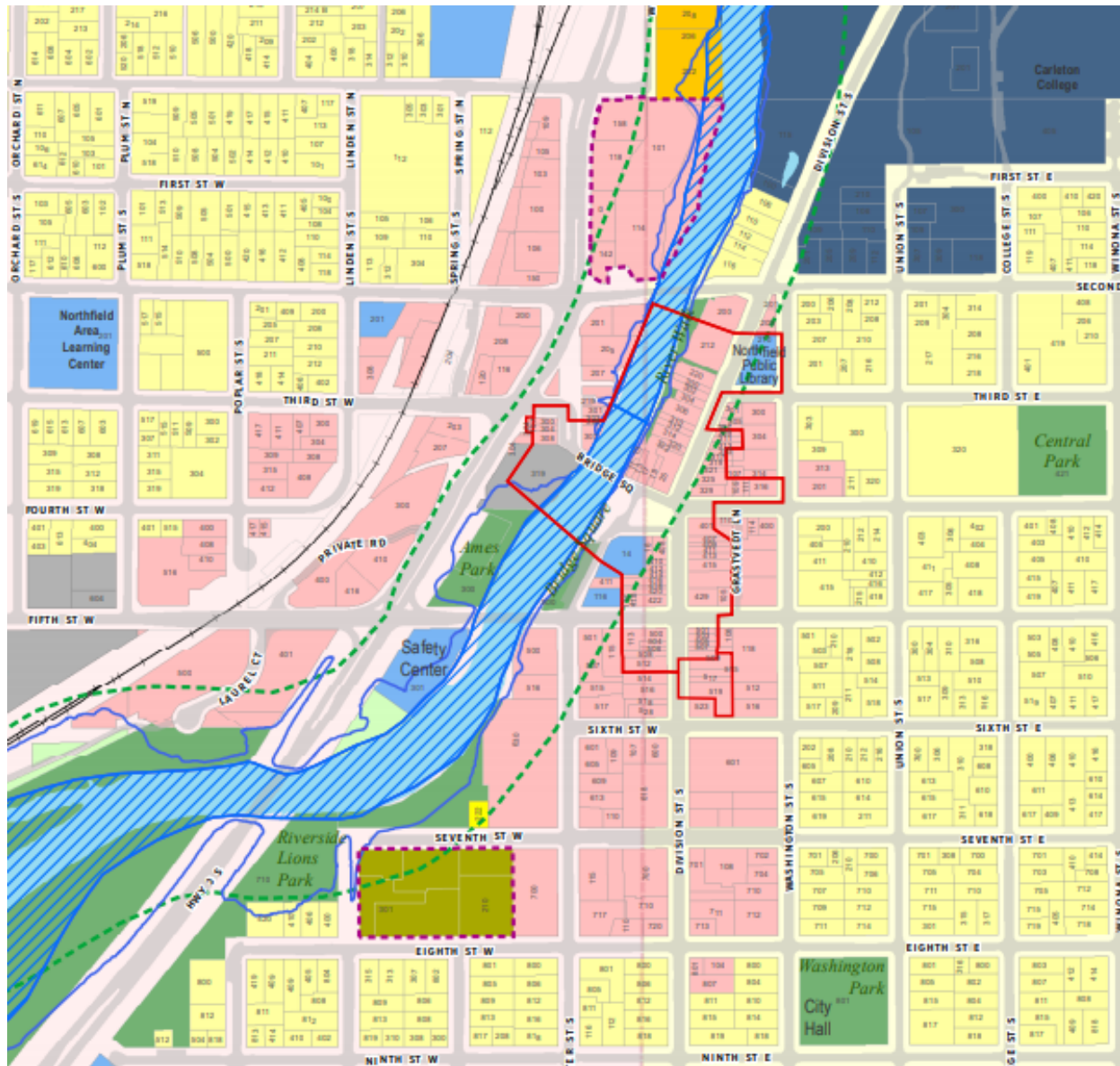
²⁰ “Land Development Code”

²¹ Adabre and Chan

location of development with expansion on the edge of the city a secondary priority,”²² so this choice is one supported by the city’s own expressed priorities.

In terms of where the development I envision should occur, this paper identifies two general areas as the most promising. The first and more ideal course of action would be to develop near the downtown area. On the map excerpt below, the downtown area is pink, and the surrounding area is light yellow:

²² “Land Development Code”



Developing in this general area would be the ideal because it most effectively meets the third criteria I reference above, central location. However, doing so could be challenging for a couple reasons. The first is a political obstacle: current residents may not want infill development in the area. In order to address this potential problem, I recommend implementing a program whereby community members—and, perhaps most importantly, potential future residents—can have

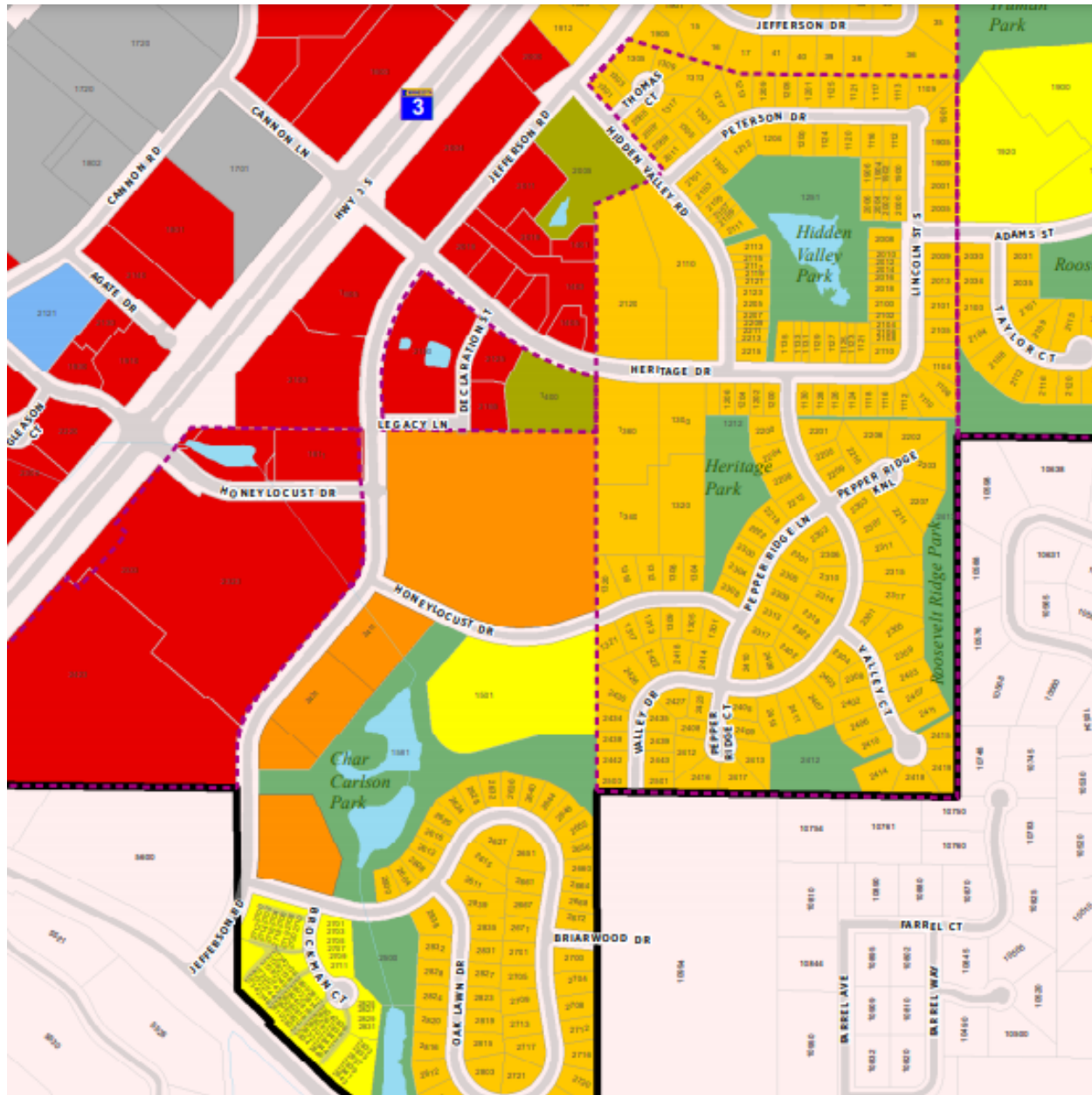
²³ “Northfield Zoning Map”

conversations on the subject. It is important that these discussions be representative, civil, and taken seriously. It is entirely possible that these conversations would not lead to any significant breakthroughs, or at least not in the short term, but the exercise should still be worth the effort. The other potential obstacle is more tangible—the kind of housing that I envision (a dense neighborhood with a variety of housing types) might not be entirely compatible with the zoning codes for this area. Currently, the area on the outskirts of downtown is zoned R1-B: Low Density Residential.²⁴ According to the Land Development Code, “The purpose of the R1-B district is to continue to support single-family, two-family, and three-family attached and detached dwellings within the existing character of the city’s older neighborhoods. The essential, existing character of the R1 district should be reinforced with any infill or redevelopment of properties.”²⁵ The development for which this paper advocates does not necessarily completely conflict with this description, but at the very least high-density development does not seem to be the goal of the R1-B district.

The second option could be to build near the area that is known as Northfield’s “second downtown,” in the southwest corner of the city. On the map excerpt below, that is the area depicted in two shades of orange, one lighter and one darker.

²⁴ “Northfield Zoning Map”

²⁵ “Land Development Code” 2.3.1(2)



The lighter orange is currently zoned N1-B, or Neighborhood General 1. According to the Land Development Code, “The N1 district is characterized by primarily single family homes, or attached housing, on parcels that are generally larger than those found in the R1, and that are located on streets more curvilinear and less connected than traditional urban development

²⁶ “Northfield Zoning Map”

patterns. The essential, existing character of the N1 district should be reinforced with any infill or redevelopment of properties.”²⁷ The darker orange, meanwhile, is N2-B: Neighborhood General 2. The Land Development Code notes that “[t]his development pattern is the preferred future pattern for the city, as expressed in the comprehensive plan.”²⁸ Both N1 and N2 seem to be easier to manage than R1, so although developing near the main downtown area is the ideal in theory, the secondary plan may end up being the option that works best in practice. Of course, development could occur in both if possible.

An Example to Emulate

In 2020, the Community Action Center of Northfield helped to construct a project of affordable housing using ecologically sustainable practices: the Zero-Energy Ready Homes project. Northfield can build on the success of this program in developing new sustainable, affordable housing. Partnering with environmental consultants like Precipitate and the University of Minnesota’s Center for Sustainable Building Research, and systems consultants like Enertech, Novel Energy, Mitsubishi, and Zehnder, as well as Sweet Grass Design Studio, the city of Northfield, and of course future residents, the CAC put together a 17-unit site with a special focus on energy efficiency.²⁹ The project made use of unconventional building techniques, like a thermal bridge and hybrid wall.²⁹ According to CAC board member Alex Miller, compared to standard construction, this project: has “mechanical systems that are on par for comparable costs” and “will have lower operating costs, and more comfortable spaces,” although it did have “40% higher lumber costs than normal, due to COVID-19.”²⁹ Overall, the project experienced a “7.5% increase in costs to construction,” but is “still holding stead[y] to our budget of \$425,000 per building.”²⁹ It stands to reason that in the post-pandemic world that should be just around the

²⁷ “Land Development Code” 2.3.5(2)

²⁸ “Land Development Code” 2.3.6(2)

²⁹ “Zero-Energy Ready Homes”

corner, the cost of lumber and other building materials should no longer be inflated, reducing what is already a low cost differential of 7.5 percent. New developments should be possible to build at costs closer to standard construction. Of course, it is also worth noting that because the operating costs are lower (because of the more energy efficient systems), the project can be expected to be even more cost-effective than one constructed using standard methods in the long term, which also bodes well for future development.

Positive Feedback Loop

To supplement the two prongs of my plan that I have outlined above, I propose that Northfield should establish a network where relevant parties in the building process can collaborate with and educate each other. At each stage of the process, new development can build on past success. The Community Action Center highlights the testimonial of Schmidt homes president Steven Schmidt: “I had previously been a bit skeptical about the affordability of constructing such energy efficient homes, but through the process of working with CAC I am changing the way I will build in the future. It is both affordable and responsible.”³⁰ Mr. Schmidt came to this perspective simply as a result of participating in the Zero-Energy Ready Homes project, so actively creating a space to educate people and bring more in could accomplish even more.

Making It Work

In order to successfully implement my proposed project, Northfield should pursue strategies that align with the city’s own expressed plan as well as the six most important “critical success factors” identified by Adabre and Chan. Objective 3.2 of the Comprehensive Plan housing section states a desire to “[e]ncourage joint public and private participation through local, state and federal programs to help cover the financial gap between affordable housing and

³⁰ “Zero-Energy Ready Homes”

the actual cost of developing housing.”³¹ Northfield should continue its ongoing involvement with these programs and seek to expand that involvement wherever possible. Objective 3.4 directs Northfield to “[c]ontinue to utilize community organizations and area agencies that promote affordable housing, such as the Rice County HRA, land trust organizations, nonprofit organizations familiar with affordable housing and Habitat for Humanity, to plan and develop affordable housing,”³¹ another directive that the city should follow. Finally, to pay for the initiatives outlined in this paper, Northfield can make use of Objective 3.7: “Provide public education of various federal, state, county and local financial assistance programs for first time home-buyers.”³¹ Northfield is already looking into or implementing all of these objectives. Beyond these, the city should take into consideration the following criteria.

Adabre and Chan identify 13 “critical success factors” for sustainable, affordable housing, six of which they assert to be particularly important.³² The first is “political will and commitment to affordable housing.”³² This is something that Northfield has, as demonstrated by the city’s statements in documents such as the Comprehensive Plan: “the City should assist in providing affordable housing.”³³ The next factor is the “formulation of sound housing policies.”³² This factor is more subjective, but I believe that Northfield is on the right track in this area. “Access to low-interest housing loans to developers”³² is another critical success factor. Northfield should make sure to pursue this strategy as part of both prongs, the renovation of existing affordable housing as well as the development of new sustainable, affordable housing. The next factor is one that has been mentioned previously: “adequate accessibility to social amenities.”³² Development near the “second downtown” would seem to fulfill this, and infill near the downtown area certainly would. The fifth factor Adabre and Chan identify is “good

³¹ “Comprehensive Plan for Northfield”

³² Adabre and Chan

³³ “Comprehensive Plan for Northfield” 11.E

location for housing projects.”³⁴ As discussed previously, Northfield does have at least two good locations for housing projects, the area surrounding downtown and that near the “second downtown.” The final critical success factor is “monitoring condition/performance of completed houses.” This recommendation should be firmly incorporated into both prongs of my project.

Adabre and Chan go beyond their discussion of critical success factors to offer additional observations. They find that “supply-side policies are commendable and recommended over demand-side policies as efficient strategies for ensuring economic sustainability... because of their efficiency in reducing inflationary prices of housing.”³⁵ For that reason, loans to developers and similar tactics will likely be very useful. They also note that “[a]dministrative incentives (such as expedited permitting, fee remission, or fee waiver as well as free consultation) have a more substantial impact on the adoption of sustainable construction measures by developers than financial incentives (i.e. tax credits).”³⁶ Northfield should thus rely on administrative incentives like expedited permitting, fee remission, and fee waiver as well. On a similar note, they remark that “[m]onetary/financial incentive was found not to have effectively promoted sustainability practices in buildings. Rather, regulations and administrative incentives are strong tools for sustainable construction.”³⁶ The same reasoning applies here. Northfield should make use of regulations and administrative incentives. Additionally, although they prioritize supply-side policies as opposed to demand-side policies, they acknowledge that the latter can be useful as well. “It was found that although half the respondents were interested in energy-efficient and renewable energy products, high investment cost was a major barrier,” they recount. “However, subsidies programs such as tax credits, purchasing rebates, and interest-free loans can be

³⁴ Adabre and Chan

³⁵ Adabre and Chan 209

³⁶ Adabre and Chan 211

developed to promote the adoption of these measures.”³⁷ Northfield can and should take steps on both sides of the supply-demand equation. For buyers, Northfield can provide “first time home buyer assistance, down payment assistance, low interest loans, gap financing, and home ownership training programs” (Housing Study)³⁸ to help to address affordable housing issues. On the side of developers, the city can contribute to projects through “land donations, TIF, grant writing, or project coordination roles,”³⁸ as recommended by the 2012 Rice County Housing Study. Northfield can also offer expedited permitting, fee remission or fee waiver, and free consultation, as noted by Adabre and Chan. All of these tactics would be used to incentivize developers to build in accordance with sustainable principles and practices, along the lines of those used by the Community Action Center’s Zero-Energy Ready Homes project. Of course, all of these initiatives and policies will cost money. Funding for the various steps outlined in my plan can come from the Minnesota Housing Finance Agency, Rural Development, the Federal Home Loan Bank, the Greater Minnesota Housing Fund and Minnesota Small Cities Development Program Funds.³⁸

Timeline

The following is a rough outline ordering the stages of my plan relative to each other:

- Stage One (2021-2022): Both prongs begin
 - Prong One begins with educating people about energy benchmarking
 - Prong Two begins with representative community discussions about infill development
- Stage Two (2022-2023):
 - Prong One

³⁷ Adabre and Chan 212

³⁸ “City of Northfield.” *Rice County Housing Study*

- Educational materials continue to circulate
 - Sustainability-oriented renovations begin
- Prong Two:
 - Development begins, in near downtown area or “second downtown”, or both: depends on the results of community conversations
- Stage Three (2023-2024):
 - Prong One continues as is
 - Prong Two continues as is
 - If necessary, community discussions continue
 - Network is established to allow the parties involved to learn from each other and share resources
- Stage Four (2024-2041):
 - Prong One continues, supplemented by the experience and connections produced by the network
 - Prong Two continues, also supplemented by the experience and connections produced by the network
 - The network’s “positive feedback loop” leads to more and more success, all the way through 2041

Conclusion

In accordance with documents such as the 2008 Comprehensive Plan, the 2019 Climate Action Plan, and Land Development Code, Northfield should undertake a multi-pronged strategy over the next 20 years in order to implement a policy of sustainable, affordable housing. This

plan includes the sustainability-oriented renovation of existing affordable housing, importantly including but not limited to mobile home parks like Viking Terrace. Simultaneously, the city can develop new affordable housing using sustainable practices. Northfield can learn from the recent example of the Community Action Center's Zero-Energy Ready Homes project, applying similar strategies in terms of both partnerships and technical processes. Northfield should prioritize development closer to the center of the city, in currently predominantly single-family home areas, but development in other spaces should not be ruled out and will become an increasingly attractive option over time. The area considered by some to be a "second downtown," in the southwest corner of the city, may be an especially promising example. Along the way, Northfield should seek to actively engage developers with sustainability advocates and eventually develop a positive feedback loop wherein the successful implementation of affordable, sustainable housing begets more of the same.

Determining the specific quantities of housing and the costs involved is beyond the scope of this paper and would warrant further investigation by the city. A new housing study will be published in 2021, which should provide much-needed data about the current state of the issue and thus help to inform decisions about some of these quantifiable questions. By following the steps outlined in this plan, Northfield can address two pressing crises—a local one, in lack of adequate affordable housing in Northfield, as well as a global one, in the worldwide climate crisis—while making some serious advances towards becoming a truly sustainable, equitable, and just community.

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