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Natural Resources Defense Council

Urban Solutions

[SUSTAINABLE FORD SITE REDEVELOPMENT]

Recommendations for the Twin Cities Ford Assembly Plant Redevelopment: A 21st Century Community

Acknowledgements

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Twin Cities Ford Assembly Plant Redevelopment: A 21st Century Community

“When I joined Ford, in the late 1970s, I felt strongly we could not forever be a huge user of natural resources without there being consequences. But I was alone in my thinking in those days.”
 -William Ford, Jr.

Executive Summary

This report, *Twin Cities Ford Assembly Plant Redevelopment: A 21st Century City*, represents recommendations for implementing a comprehensive and sustainable redevelopment of the Ford Site in Saint Paul, Minnesota. These guidelines were generated through the synthesis of the current thinking and previous planning documents for the Site audited against our Green Neighborhood Assessment Tool. In addition, these recommendations are grounded in thoughtful and collaborative discussions with the City Planning Office.

The report takes into account nearly ten years of significant analysis around the potential for the site. These plans and ideas were ensured to achieve the highest standards for sustainability. The report is timely in that the site will soon be put on the market by Ford Motor Company in hopes of going under contract to a master developer. While not all recommendations will be novel, this is the first report to develop an inclusive, place-based approach to the redevelopment that also prioritizes city actions. It is critical that the most important goals, such as creating walkable and livable streets that connect to the rest of the surrounding neighborhoods as well as the prioritization of environmental sustainability, health, and social equity are reiterated so they retain importance over the course of the development process.

Assessment Topic Area	Assessment Result
Public Engagement	■
Land Use	■
Transportation	■
Natural Resources	■ ☀
Public Facilities	☀
Site Development	☀
Housing	■ ☀
Economic Development	●
Health	● ☀
Equity	●
Resilience	●
Water & Green Infrastructure	☀

Legend

Strength ■
 Weakness ●
 Opportunity ☀

Table 1: Results of Green Neighborhood Assessment and Analysis

The analysis of the Green Neighborhood assessment matrix identified and synthesized strengths, weaknesses and opportunities in the planning documents for the Ford Site. Table 1 shows the assessment results categorized by the topic areas utilized in the Green Neighborhood tool.

In order to make connections and eliminate inefficiencies, the approach taken for this project must involve thinking big, while acting incrementally. For example, a key recommendation is for the City to take a phased approach to the master planning process. The first phase will identify stormwater and green infrastructure opportunities. Following this phase, the street grid can be outlined with access to transit. Then, additional context can be added in the form of housing diversity and affordability. Incorporating equity issues and engaging with community leaders is critical in every step of this process. Finally, it is strongly believed that this is an opportunity for the City of St. Paul and Mayor Coleman to be national leaders in shepherding the values of sustainability, equity and livability on the redevelopment of such a significant site.

Introduction

When Ford Motor Company announced that the Twin Cities Assembly Plant would be closing in 2011, the City of Saint Paul and partners, including local leaders and residents, seized the opportunity to turn the site into “A 21st Century Community.” The 135-acre site is nestled between Saint Paul’s Highland Park neighborhood and the Mississippi River. Currently, the site is cleared and is being prepared for sale to a master developer by Ford. Since the announcement in 2007, the City of Saint Paul’s Ford Site Sustainable Redevelopment Team and Ford Site Task Force have completed several plans and studies about the future of the site. These studies, led by the City’s Office of Planning and Economic Development, include planning and visioning options for the site, infrastructure feasibility analysis, zoning framework analysis and input from stakeholders and residents. It is clear from these studies and plans that the sale and redevelopment of the property offers a significant opportunity to challenge the status quo for neighborhood planning and lay the foundation for a redevelopment project that embraces cutting-edge design, minimal energy use and an inclusive place for people to reside and commerce to thrive.

To further these goals, the Natural Resources Defense Council’s (NRDC) Green Neighborhoods team conducted a Green Neighborhood Assessment to support the efforts of the City’s Ford Site team. The goal of this assessment is to implement the most environmentally exemplary and sustainable approach for the large-scale site redevelopment opportunity at the Ford Site. Our team analyzed the existing plans through the lens of sustainability, equity and health, as well environmental and economic

resilience. The findings focus on achieving a cohesive vision that integrates sustainable land use, green infrastructure, clean energy, and walkability as well as equitable access to jobs, transportation and a diversity of housing. The outcomes and recommendations in this report represent the results of our analysis.

The recommendations for the Ford Site are part of NRDC's broader engagement in the Twin Cities. Ford is one of three large-scale sites, along with Rice Creek Commons and Prospect North, undergoing redevelopment in the region. Urban Solutions and MZ Strategies have worked together to launch quarterly Twin Cities Green Development Forums in 2015 to bring together key individuals and foster learning and exchange around the best strategies for approaching the redevelopment of these sites. Our work will add to the body of knowledge that exists on understanding site-specific and regional opportunities and barriers to innovation. These forums were made possible with generous grant support from the McKnight Foundation.

Background on the Ford Site

The history of Ford Motor Company's Twin Cities Assembly Plant in the Highland Park neighborhood can be translated into the vision for redevelopment of the site into a smart and efficient neighborhood. Henry Ford began assembling Model Ts in Minneapolis in 1912, but in the early 1920s, selected a new parcel of land in a more prime location along the Mississippi River.¹ Here, he would have access to cheap hydroelectric power from Lock & Dam No. 1, constructed in 1917.² The site became the Twin Cities Assembly Plant. In operation from 1925 until closing in 2011, the plant produced millions of vehicles, and Ford undertook the construction of a railroad line, now owned by Canadian Pacific Railway. Adjacency to the Upper Mississippi allowed barges carrying materials access to the site, in addition to access by rail. Ford also constructed a network of tunnels beneath the site itself for the mining of silica sandstone, used to create glass for vehicle windows, further emphasizing Ford's determination to efficiently utilize the geography of the site.

Despite decades of high productivity, Ford Motor Company announced the closing of the site in 2007, and the last automobile rolled off the line on December 16, 2011. Although Ford plans to sell the site for redevelopment, there is a great opportunity for it to become a legacy site, exhibiting both the efficient utilization of space as favored by Henry Ford, and the modern sustainable vision of his great-grandson,

¹ "Ford Lands in Minnesota." Star Tribune. <http://www.startribune.com/components/134952973.html>.

² "Lock & Dam #1." John Weeks. 2008. <http://www.johnweeks.com/bridges/pages/lockdam01.html>.



Image Source: City of Saint Paul

Bill Ford. Bill Ford posits that our freedom of mobility, so highly valued by his great-grandfather, is inevitably going to be threatened by population growth and subsequent environmental degradation. However, Bill Ford envisions a society where a modern mobility model, advanced with today's technological ingenuity, can exist in harmony with preservation of the natural world. This "leap in thinking" is characterized by an integrated system of "smart roads, smart parking and smart transportation systems" that maintains and improves our ability to move around in a sustainable way, simultaneously curbing greenhouse gas emissions, reducing sprawl and providing economic benefits.³

Green Neighborhoods and LEED-ND+

The Green Neighborhoods team was pleased to add some value to the effort to redevelop the Ford Site in Saint Paul. Green Neighborhoods is an initiative of NRDC's Urban Solutions program, and has a growing portfolio of experience in neighborhood-scale sustainability assessment. This report provides recommendations that resulted from performing our Green Neighborhood Assessment process, and engaging in conversations with the City's lead staff for the Ford Site. These recommendations were presented at the Green Development Forum in January of 2016.

The basis of our Green Neighborhood Assessment for the site was an analysis of existing community conditions, plans and studies performed using the metrics in our LEED-ND+ tool. LEED for Neighborhood

³ Roadmap for Sustainability: Saint Paul Ford Site (2011)

Development (LEED-ND) is an excellent platform for this effort, because it addresses sustainability at the neighborhood scale. Although LEED-ND was originally intended as a “green seal of approval” for new development projects, the power of LEED-ND in this context is that it serves as a compilation of state-of-the-art sustainability best practices for neighborhoods. The Green Neighborhood team developed an augmented version of the tool, which is referred to as LEED-ND+, based on technical experience working with neighborhoods. The “plus” refers to the inclusion of additional metrics that go beyond the scope of LEED-ND and focus on health, equity and resilience. Although a site that performs well under the LEED-ND metrics will likely be a healthy and equitable one, it is believed that explicit standards improve outcomes in these areas.

The following documents were addressed in the assessment:

- Current conditions: This is a compilation of calculations on adjacent neighborhood conditions, such as intersection density; current land use statistics, latest thinking on zoning concepts, and map data from Google Earth
- Meeting input: Includes presentations, minutes and discussion topics from public meetings in 2015
- Ford Site Zoning Framework Study (2012-2013)
- Roadmap for Sustainability: Saint Paul Ford Site (2011)
- Ford Site Open Space Guidelines (2011)
- Sustainable Stormwater Feasibility Report for the Ford Plant Site (2009)
- Identification of Goals, Visions, and Five Redevelopment Scenarios (2007)

The plans and documents were rated against the metrics in the document. The purpose was to synthesize this data, find areas of alignment among the documents and measure how they compare with the metrics in the tool. The documents were scored based on how well they achieved the measures, and gaps and areas of incomplete alignment between the documents and the metrics were noted. Through this method, strengths and weaknesses in the planning documents and a method for taking the vision for the Ford Site to the next level were identified.

LEED-ND+ is a tool and a guide for Saint Paul

The findings of the LEED-ND+ analysis can be found in detail in Appendix II, which provides extensive technical knowledge on the project area. Appendix I describes how to use the scorecard. The Technical Manual for Sustainable Neighborhoods is a great resource for implementing LEED-ND and we included

additional information on this in the “Resources” section. Using the scorecard as a living tool for ongoing use by the project team is encouraged. Some ways to apply the tool include:

- 1) To guide the sustainability standards for current and future neighborhood development in the Ford Site, as well as Rice Commons and Prospect North and future neighborhoods
- 2) To catalyze market transformation through encouraging and capturing innovation in design
- 3) As a marketing tool to encourages people to think holistically about neighborhood redevelopment and beyond the scale of the building
- 4) As talking points for articulating project goals to key decision-makers and
- 5) To demonstrate the City’s long term commitment to sustainability through the adoption of principles in its planning and regulatory frameworks
- 6) As a model of principles for other neighborhoods to adopt such as Rice Creek Commons, Prospect North and other communities in St. Paul

This report identifies strengths and areas of opportunities for the City of Saint Paul to consider. The recommendations focus specifically on points of intervention for the City as they implement redevelopment parameters with zoning, subdivision regulations, and a public realm master plan for the site in the coming months. Also, in anticipation of the sale, recommendations for marketing the site by the City that focuses on enticing developers that best fit with the vision for sustainability are included.



Image Source: Hannah Robinson

Assessment Results

To determine strengths and weaknesses, a comprehensive look at the assessment matrix was taken. Topics or components of the matrix that plans and documents achieved or exceeded were identified as strengths. Topics that the plans and documents did not meet, partially, incompletely or inconsistently met the metrics were potential weaknesses. These were then organized into topic areas and more detail on how to address these topic areas is below. The full assessment matrix explains how to bring the plans and documents into full alignment.

Assets and Strengths

The analysis identified several strengths and assets existing within the site and existing planning documents that performed notably well. Assets include the large size of the site, because it allows the opportunity to think holistically about the redevelopment. In addition, the proximity to the airport as well as to downtown Saint Paul and Minneapolis and existing neighborhoods is also an asset. The size and proximity of the site add to the potential to achieve triple bottom line objectives described in many of the planning and visioning documents.

The following elements as achieving high standards in the Green Neighborhood Assessment tool were identified:

- Plans demonstrate a strong understanding of LEED for Neighborhood Development
- Location on a previously developed site adjacent to well-connected existing neighborhood
- Desire for access to parks and open space

Gaps and Opportunities

The analysis also identified gaps, weaknesses and opportunities to improve the vision for the site, and there are also some inherent challenges. Specifically, the results of the Environmental Assessment have yet to be released. While Ford has agreed to clean up the site to developable standards, depending on the level of contamination, the level of remediation necessary for residential use may not be achieved; this would likely be more challenging than cleanup for commercial or industrial uses. In addition, there has been ongoing market uncertainty about the benefits of triple bottom line development; therefore, the need remains to continue to make the case for the market benefits for sustainable redevelopment specifically for this site.

In addition to these inherent challenges, the assessment identified the following areas that notably failed to meet the criteria of the Green Neighborhood LEED-ND+ tool:

- Inconsistency in recommending a strong mix of housing diversity
- Lack of support for housing affordability
- Weak or no mention of support for equity, health and resilience

Recommendations and Priorities

NRDC's recommendations focus on priorities for action for the City. It is important to note that at the time of this report, the findings from the Environmental Assessment are still being assessed. These outcomes may affect the City's priorities and actions. The recommendations center on the following topics:

- Green Infrastructure
- Land Use, Connectivity and Design
- Improving housing Diversity
- Increasing housing affordability
- Integrating equity
- Using the ND+ Tool to guide actions

In addition to action items described in detail below, the assessment scorecard covers a comprehensive inventory of all of NRDC's recommendations.

Short case examples for each topic area are also provided. Not only is the creation of integrated and regenerative city spaces the future of urban planning, but it has also been done successfully worldwide, benefiting residents, economies and surrounding ecosystems alike. Examining the case studies of similar redevelopment projects shows the City of Saint Paul and the future developer of the Ford Site the variety of possibilities that are available and proven to work. NRDC hopes these examples of equitable and environmentally sustainable community development become policy and status quo in the future. The provided case studies include examples from:

- Vauban District, Freiburg, Germany
- South Waterfront Eco District, Portland, Oregon, United States
- Almere Port, Flevoland, Netherlands
- Boddington Zero Energy Development, South London, United Kingdom
- Mariposa, Denver, Colorado, United States

- Dockside Green, Victoria, British Columbia, Canada
- Stapleton, Denver, Colorado, United States

Equity, Health and Resilience

In order to develop a healthy, just and sustainable neighborhood, it is necessary to integrate specific goals for equity, health and resilience in the guiding documents. These elements were found to be the most lacking in the plans for the Ford Site. According to the National Equity Atlas, in 2012, the economy in the Twin Cities would have been \$19.69 billion larger if there were no racial gaps in income. This is an opportunity for major growth and innovation.⁴ One way to address the gaps in equity is through establishing housing diversity and affordability, which are elaborated on further in the housing sections. In addition, the following is recommended:

Recommendations for City Action:

- Adopt a goal to reduce or eliminate income inequality in neighborhood plans
- Enable community leaders of all demographic groups to self-organize
- Engage directly with community groups and members on a regular basis
- Identify pre-existing community needs or vulnerabilities

Case examples:

South Waterfront Eco District, Portland, Oregon

The City of Portland extensively sought public input on the Concept Street Plan Map and plans for the South Waterfront District redevelopment. Feedback from open house attendees, four neighborhood associations, City advisory committees and City commissions was gathered and incorporated into the continued plan development.⁵ Public input is critical to the redevelopment process, as it allows the City and/or developer to incorporate residents' and stakeholders' needs, vulnerabilities and desires into the final concepts.

⁴ Policy Link. "Minnesota's Tomorrow: Equity is the Superior Growth Model." 2014.
http://nationalequityatlas.org/sites/default/files/MNT_032514.pdf

⁵ City of Portland Bureau of Transportation. November 2009.
<https://www.portlandoregon.gov/transportation/article/275854>

Vauban, Freiburg

In redeveloping Quartier Vauban, the City of Freiburg aimed to create an environmentally sustainable district that embodied social, cultural and economic goals and public input. Project Group Vauban, Freiburg City Council and Forum Vauban, a citizen's association, worked together to create a plan that was ultimately implemented to establish a vibrant, eco-friendly and welcoming neighborhood. Today, Vauban is a flourishing community of about 5,500 residents, providing 600 jobs as well as citizen-organized housing for students, low-income and single-parent households.



Image Source: Vauban.de

Mariposa, Denver, Colorado

Mariposa is a 15-acre transit oriented redevelopment site in the South Lincoln neighborhood of Denver. It is a model for how to revitalize sites, including public housing, in a way that is walkable, transit-oriented, green, healthy and equitable. As part of the planning for the site, there was extensive public outreach conducted by the Denver Housing Authority along with city and local partners. Community workshops and charrettes were held with a strong focus on health and equitable development. The community undertook a Health Impact Assessment, and implemented both a healthy development measurement tool (HDMT) and a Cultural Audit. The HDMT focused on using the master planning process for connecting the built environment to health outcomes. Data was gathered about physical activity, obesity and heart disease, air quality and asthma, nutrition, traffic safety, noise, and mental health were collected from surveys, meetings, public agency data, and interviews. The cultural audit was based on open-ended interviews with residents that produced community opinions. This information became the foundation for redevelopment with great sensitivity to community needs and concerns.⁶

⁶"Mariposa – South Lincoln Redevelopment Master Plan." 2014.

http://mithun.com/projects/project_detail/south_lincoln_10th_and_osage_redevelopment

Dockside Green, Victoria, British Columbia

Dockside Green in Victoria, BC is one of the first neighborhoods to achieve a LEED for Neighborhood Development certification and Platinum rating. It is a mixed use community of 1.3 million square feet and over 2500 residents. Dockside green used “Place Speak” as a community engagement platform to engage with residents and provide a forum for dialogue and interactive feedback on plans and development visions.⁷

Green Infrastructure

The Ford Site Redevelopment team has identified ambitious goals for managing stormwater at the site. The ability to implement these goals depends in large part on the remediation needs that will be identified in the Environmental Assessment. Green stormwater infrastructure design must be fully integrated into the design process for the Site as a whole. The Stormwater Feasibility report advises the completion of groundwater, hydrology, hydraulics and water quality modeling for each phase of the development process, in order to understand the conditions and possibilities for implementing best management practices. Sustainable stormwater infrastructure, including soils, should be seen as the base layer of design for the site, around which other aspects of the master planning process will be formulated. Additional detail can be incorporated once this layer is established.



Image Source: City of Saint Paul

If significant soil remediation is in fact needed, as suspected, this clean-up is an opportunity to include sustainable green infrastructure. Elements including green finger corridors and parcels of green space can be strategically located at optimal places within the site. Once the green infrastructure phase is established, a master plan and street grid can layer on top, meaning sustainable green infrastructure is an inherent feature of the neighborhood. Pervious pavers and plantings, including bios wales and rain gardens, will combine better water quality and reduced runoff with an improved pedestrian experience. The market value for these best management practices comes from improved water quality as well as the associated benefits for residents that they create.

⁷ “Neighborhood Building. Happening Here.” 2016. <http://www.docksidegreen.com/>

Recommendations for City Action:

- Design the green infrastructure phase first, based on the soil and hydrology modeling
- Incorporate green infrastructure as part of the plan for soil remediation plan
- Comply with Clean Water Act requirements
- Implement the best management practices outlined in the Stormwater Feasibility Report in the master plans, zoning and subdivision regulations
- Aim for first inch of rainfall to remain on site
- Achieve a goal 90% Total Suspended Solids (TSS) removed during 2.5in rain event
- Promote the benefits of green infrastructure for social and economic value

Case example:

Vauban, Freiburg

The complete streets of Vauban are embedded with rain gardens, bioswales and other green stormwater infrastructure features that reduce runoff and pollutants from rain events. Green stormwater management techniques are comprehensively integrated into the street and transit network, with sustainable landscaping and rain gardens incorporated into tramlines and pedestrian bridges. Green fingers and corridors connect the neighborhood and its inhabitants to the adjacent Dorfbach River, farmland and the Black Forest, simultaneously providing connected habitat for native plant and animal species and additional cobenefits for residents.⁸

Connectivity and Land Use

Once the ground and green infrastructure layer is established, the street grid is the next layer that should be considered. Land use and neighborhood design were strong attributes in the plans and visions for the Ford Site that can be implemented in the master plan and street grid for the site. *The Roadmap for Sustainability: Saint Paul Ford Site* document achieves or exceeds many of the metrics in the tool. The Roadmap demonstrates an impressive understanding of LEED for Neighborhood Development, and references the metrics in ND as specific and measurable goals that the Ford Site Task Force has set for the site. This is notable because, LEED-ND is not often explicitly taken into account. The City should ensure these goals become the basis for the master plan and zoning regulations for the Ford Site.

⁸ See Appendix III for more information.

Recommendations for City Action:

Fully implement the following land use metrics in this phase. These are critical to the development of a walkable, livable, and well-connected community:

- Use the current statistics calling for 8 acres of Little League space and 8.5 acres of dedicated parkland; ensure that the majority of households and areas of employment are within ¼ to ½ mile walking distance from these planned green spaces.
 - Strategic spacing of little league fields and green and open space will ensure that additional congestion is not created, and residents and employees will enjoy adequate access to amenities.
- Ensure that the street grid layer achieves an equal or greater intersection density than neighboring Highland Park (565 intersections per square mile). 600+ intersections would be exemplary.
 - Specifically use the findings from the traffic study that is currently underway to ensure optimal internal and external connections to the site.
 - Connect Montreal Avenue and Mississippi River Boulevard to mitigate congestion.
- Achieve a residential density of 45 dwelling units-per-acre. This level will be in support of transit oriented development, transit investments and amenities for the site.
- Implement minimum density requirements as outlined in *The Roadmap for Sustainability* (20 DU/acre and minimum 0.5 FAR) in the zoning regulations for the site.
- Provide adequate bike access and engage the strong bicycling community.
- Set parking maximums in the zoning code and provide incentives for shared parking.

Case examples:

South Waterfront EcoDistrict, Portland, Oregon

Plans to redevelop Portland's South Waterfront District, previously an industrial and partially vacant brownfield site, began in 1996 and the final plan was adopted in 2002 by City Council. The comprehensive plan established criteria and standards for streets and transportation, extending existing roadways into the development to ensure connectivity and designating options for pedestrians, bicyclists and public transit. The 86-acre South Waterfront EcoDistrict boasts connections to the Portland streetcar and tram, greenways, a pedestrian bridge and light rail, which opened recently in 2015. Residents and visitors are conveniently connected both internally and to adjacent neighborhoods

and greater Portland. Not only does street design balance traffic and increase walkability, but it also features green infrastructure like trees and rain gardens to reduce stormwater runoff, capture pollutants and enhance enjoyment for the public in open green spaces.⁹

Vauban, Freiburg

The Vauban district in Freiburg, Germany also exhibits exemplary connectivity and land use. The 640-acre neighborhood is connected to the City of Freiburg by multiple tram stops situated throughout the district. Cars are only permitted on arterial roads, with the remaining streets prioritizing pedestrians and cyclists.¹⁰

Stapleton, Denver, Colorado

Neighborhood connectivity was a key component to the redevelopment of Stapleton, previously the Denver International Airport. At 4700 acres, the neighborhood is an example of one of the largest urban infill sites to be redeveloped using new urbanist principles. The vision for Stapleton focuses on access to open space, resources, walkability to amenities as well as integrating sustainability and diversity. Stapleton continues to develop and provides a case study of how the neighborhood is still working to tackle issues of housing diversity and transit service.¹¹

Housing Diversity

Housing diversity is a key component for consideration in redevelopment of the Ford Site. After determining the street grid and connectivity for the site, housing and buildings must be addressed. The surrounding area is primarily single family and fairly demographically homogeneous. As a result of our assessment, discrepancies in housing and building diversity were identified. Some of the plans, including the Roadmap and Zoning Framework, called for a higher level of housing diversity, as measured by the Simpson Diversity Index. Other plans focused primarily on single family dwellings or apartments. Some of this is dependent on the outcome of the pending Environmental Assessment, but development efficiency is often a reason for not pushing for housing diversity. However we strongly recommend incentives for boosting diverse housing and building types in order to achieve a mixed-use, cultural and sustainable neighborhood. Accessory dwelling units, smaller lot sizes and mix of housing type can increase density, provide a range of affordability (as well as an owner and renter mix) and accommodate

⁹ City of Portland Bureau of Transportation. "South Waterfront District: Street Plan, Criteria and Standards." PortlandOregon.gov. November 2009. <https://www.portlandoregon.gov/transportation/article/275854>.

¹⁰ See Appendix III for more information.

¹¹ Stapleton. 2013-2016. <http://www.stapletondenver.com/community/our-story/responsibility>

varying household sizes and ages. These typologies can include mixed-use buildings, live-work areas, single- and multi-family housing and typologies that are in between.

Recommendations for City Action:

- Be aggressive in promoting different building types
- Permit a wide range of uses and housing variety in the zoning code
- Allow accessory dwelling units
- Design smaller lot sizes
- Identify appropriate housing subsidies and resources to be deployed

Case Example:

South Waterfront Ecodistrict, Portland, Oregon

In addition to ensuring reduced traffic and connectivity for pedestrians, cyclists and transit, the new South Waterfront EcoDistrict in Portland, Oregon is also promoting mixed-use development, including diverse building types such as residential and commercial as well as academic buildings for the local university. Supported by new utility infrastructure, there will be over 2,000 residential units—over 200 of which will be affordable for low-income residents—and commercial buildings for businesses and retail space. The District will support over 1,000 jobs, simultaneously allowing for increased culture, walkability and sustainability in the area.¹²

Housing Affordability

In addition to typology, housing affordability should garner greater importance in the planning for the Ford Site. While we understand that the need must be clearly defined, we urge the City and policy leaders to think creatively and strategically about increasing affordability, in particular energy efficient affordable housing. Improved housing diversity is one mechanism to address affordability. We recommend that a mix of affordability is included in the master plan and zoning processes. A recent report by MZ Strategies demonstrates that early commitment to affordability by local leaders greatly improves outcomes. Refer to the report for detailed findings on housing mix and affordability.

By including affordable housing goals in the master plan, the city is signifying that this is a priority.

Recommendations for City Action:

¹² Development Webinar: Portland's South Waterfront EcoDistrict

- Use zoning regulations to ensure that attached and small lot housing is not inhibited
- Work collaboratively with State Housing Finance Authorities to incorporate energy-efficient affordable housing and achieve optimal tax credit allocations for the site
- Prioritize reduced emissions and for lower energy bills for households
- Explore a city-wide inclusionary zoning policy
- Identify a package for affordable housing finance tools
- Conduct an affordable housing workshop for the site with for-profit and non-profit housing developers

Case Examples:

South Waterfront EcoDistrict, Portland, Oregon
Portland, Oregon's South Waterfront EcoDistrict will contain more than 200 residential affordable housing units in the mixed-use neighborhood. Through urban form and creative utilization of district energy and building energy reduction, the EcoDistrict also hopes to contribute to the reduction of greenhouse gas emissions up to 80% by 2050, to comply with the City's Climate Action Plan (CAP). Reduced emissions and modern energy systems will reduce bills for residents.¹³



Image Source: Forms+Surfaces

Almere Poort, Netherlands

Almere Poort, a housing project built on council-owned lands in the Netherlands, represents a creative and unique solution to providing affordable and diverse housing for low-income residents. Individuals or families can purchase a small plot, and select and customize a home to fit their personal needs. Although an economically- and environmentally-friendly scenario such as this is not likely to be possible on the Ford site, a creative solution permitting a wide range of housing and building types is both recommended and feasible.¹⁴

Beddington Zero Energy Development, London, United Kingdom

¹³ Development Webinar: Portland's South Waterfront EcoDistrict

¹⁴ Feary, Thomas. "Inside Almere: the Dutch city that's pioneering alternative housing." December 15, 2015.

<http://www.theguardian.com/housing-network/2015/dec/15/almere-dutch-city-alternative-housing-custom-build>

The Beddington Zero Energy Development (BedZED) in London, United Kingdom is a mixed-use sustainable urban village, located on a previous brownfield site that utilizes energy efficient and renewable technologies to minimize emissions and produce energy. Although some of the high-density residences in BedZED sell for slightly more than other homes in the area, the Housing Authority and private developer were mandated to ensure two-thirds of the provided housing was affordable.¹⁵¹⁶

Stapleton, Denver, Colorado

Builders and community leaders are determined to provide a mix of affordability to housing in Stapleton. They are able to keep housing affordable through a mix of financial tools such as tax incentives, credits, grant support for energy efficient housing design and loan funds from the City.¹⁷



Image Source: Stapletondenver.com

¹⁵ Bioregional. BedZED. <http://www.bioregional.com/bedzed/>

¹⁶ Allen, Adriana and You, Nicholas. "Sustainable Urbanisation: Bridging the Green and Brown Agendas." 2002.

¹⁷ "As rents rise rapidly, Stapleton's builders are determined to bring affordable new homes to Denver's most popular community." June 5, 2015. http://www.denverpost.com/ci_28258412/rents-rise-rapidly-stapletons-builders-are-determined-bring

Appendix I
Matrix: How to Use

LEED-ND+ Assessment Scorecard

The project team developed the assessment scorecard to be used as a reference by the City of Saint Paul. The scorecard is attached in Appendix II. The data represents an analysis of the existing conditions and current area plans against the metrics in LEED-ND+.

We envision that the scorecard will be used in conjunction with the narrative as a reference for technical information for integrating a high level of sustainability into the implementation of a Sustainable Ford Site Redevelopment.

Below is a link to the full LEED-ND guide:

[LEED-ND version 4](#)

Appendix II
LEED-ND+ Matrix

The LEED-ND+ Matrix begins on the next page.

LEED-ND Plus/ Audit Matrix											
LEED-ND Components	Checklist	Applicable ND Metric	Meeting Input 2015	Identification of Vision, Goals, and Five Redevelopment Scenarios (2007)	Ford Site Open Space Guidelines	Ford Site Zoning Framework Study (2012-13)	Sustainable Stormwater Feasibility Report for the Ford Plant Site (2009)	Roadmap for Sustainability: St. Paul Ford Site (2011)	Current conditions: calculations, map data, current stats, Zoning district draft ideas	Saint Paul staff comments, based on current zoning and public realm concept and intent, and work to date.	
*r 1. Planning Process											
1.1 Community assessment											
	1	Has development project, plan or policy conducted an assessment of the affected population that culminates in a community needs assessment?	N/A	N	N	N/A	N	N	N	N	
1.2 Public participation and leadership											
	2	Is a public engagement and implementation strategy in place?	Y	Y - large public meetings and listening sessions have taken	Y - open space guidelines were created from public meetings and	Public engagement	N - opportunity for public input on	Y-Ford Site Task Force held many	N/A	Yes - community engagement phases complete for visioning and	
	3	Are incentives offered for beyond-code outreach to groups affected by development projects, eg development-sponsored pre-design meetings, design	N/A	N but could happen in the future.	Not specified, but engagement with the public is expected to be ongoing as site goes through development phases	Charrettes held as part of engagement strategy prior to	Not specified	There was outreach for the Roadmap, but not ongoing	N/A	Yes - We've done regular mtgs, focus groups, visited block parties, neighborhood council mtgs, civic and business groups, real estate	
	4	Are priorities shaped by the perspective of all groups defined by community assessment to be affected by plan or project?	Y	Not specified	N/A	N/A	Not specified - this could/should happen once in stormwater	Not Specified	N/A	Maybe - We've reached out to all affected groups and listen to input. What's the threshold to qualify? BASED ON COMMUNITY NEEDS	
	5	Is an appointed citizen body, that equitably represents stakeholders and vulnerable populations, in place to guide planning and implementation	N	Task force met throughout 2007; uncertain whether still in place.	All public were engaged in creation of guidelines and gave input-this could be ongoing once more decisions regarding amount	N/A	N	Keep Task Force through implementation process	N/A	Yes - A 20-member Ford Site Task Force started in 2007 and is still meeting.	
	6	Is there support for capacity-building programs to enable community leaders and all demographic groups to self-organize, resolve issues, and cultivate	N/A	N	N	N	N	N	N/A	Maybe - The City isn't convening one directly, but is supporting and interacting with grassroots groups that are trying to do it.	
	7	Is there support for addressing anticipated cultural shifts as a result of planned development?	Saint Paul Comp Plan to promote	N	N	N	N/A	N - no specific mention of culture and cultural shifts	N/A	Maybe - The City wants to support it and has been clearly communicating to people that	
1.3 Prioritize funding											
	8	Is a funding framework in place that includes: - Indirect and direct costs and benefits of the proposed plan or project implementation?	N/A	Site must have long-term economic viability	Costs and benefits of various open space use scenarios are considered	Indirect benefits for environmental	No, but report acknowledges the indirect and direct	Plan recognizes external cost/benefits, but not	N/A	Yes - City is doing a traditional financial pro forma for the envisioned development, as well as	
	9	- An inventory of all local, state, federal and other sources available or acquired to fund initial phases of project or plan implementation?	N/A	N/A	A number of funding scenarios are provided, but doesn't list inventory of all available sources.	N/A	N/A	Not specified in plan	N/A	Initiated - We are working on that in late 2015 and in 2016.	
	10	- Equitable distribution of available funds for building capacity of vulnerable population (as defined by community assessment)?	N/A	N/A	N/A	N/A	N/A	N - Ensure equitable prioritization of city funds	?	What qualifies? -- No official community assessment done. We will be evaluating level of funding for affordable housing, senior	
	11	- Support for incentives that encourage sustainable practices that reduce the cost of living and working?	N/A	Y - vision for all five scenarios is to "balance economic, social and environmental"	Support for incentives that encourage sustainable practices, but doesn't emphasize those that	Anticipated as part of zoning framework	N/A	N	N/A	Yes - Sustainability goals address creating infrastructure and buildings that reduce operational	
1.4 Mitigation and resilience specific measures											
		Are the following components included in neighborhood plans and policy to address climate resilience components	N/A	N/A	Specific mention of natural buffers along river	River Corridor Overlay district pertains to Ford	N/A	Specific goals for climate resilience	N/A		
	12	Emergency management plans for natural disaster preparedness and response informed by local and regional	N/A	N	N/A	N/A	N, but site is located outside of the FEMA 100-year	N	N/A	Yes? We have a Citywide plan and we are looking at heat island and storm event flooding mitigation for	
	13	Food security planning?	N/A	N	N/A	Community	N	N	N/A	N	
	14	Water security planning?	N/A	N	N/A	N/A	N	Not specifically water	N/A	? This is done by Met Council and	
	15	Energy security planning?	N/A	N, but plan to capitalize on	N/A	N/A	N	N	N/A	Yes - This is being addressed as a	
	16	Do plans address priorities from community members, stakeholders, and community assessments including but not limited to health, safety, economic development and equity?	N/A	Scenarios 4 + 5 address priorities from community members -- transit oriented development, open space, etc.	N/A	Y	N, but feasibility report outlines potential for and benefits of green infrastructure to	Specify community priorities	N/A	Yes - These subjects are addressed by strategies in housing, transportation, economic development, etc. and will be implemented thru the zoning and	
	17	Are community members actively engaged in the planning process?	Y - public input from a series of	Y - many community/public meetings, series of developer	Y	N/A	Unsure, but there is big opportunity	Y-see meetings and input, Task Force	N/A	Yes - We've had dozens of meetings, had attendance from	
	18	Is community leadership in place to disseminate information and organize preparedness and response activities?	N/A	N	Uncertain whether this is happening currently. Opportunity for the future.	N/A	Uncertain whether this is happening currently.	Opportunity for community leaders in the future	N/A	Not yet - This would most appropriately be structured and done through the block club	
2. Land-Use											
*2.1 Urban growth limit											
	19	Is community development geographically limited to a planned water/wastewater service area or similar urban growth control	N/A	Y - infill/adjacent site	Y - infill/adjacent site	Y - connect adjacent site, zoning proposed to be modified	Y - previous industrial site, will be new community, but	Y-infill/connected	Y-infill/adjacent site. Check on district energy/water utility status.	Yes - infill site	
*2.2 Priority growth areas											
a. Redevelopment	20	Is priority given to, or incentives offered for, equitable redevelopment of brownfields or other special designation areas, eg enterprise zones?	N/A	Y	Y	No enterprise zone, probable TIF	Y - site previously listed brownfield by EPA	Y-site is a priority by City, opportunity for specific incentives and explicit mention	Site previously but no longer listed EPA designated brownfield	Yes - TIF funding tool is primarily utilized to help with the redevelopment costs of blighted and environmentally impacted	
b. Development		Is priority given to, or incentives offered for, development of the following site									
	21	- Infill?	75% of surrounding land previously developed; 140	N/A	Y	Y	N/A	N/A	Y	Site is adjacent to previously developed site (see page 6 of LEED	Yes
	22	- High connectivity? (intersection density)	200 intersections/sq mi (exemplary: 600+)	No incentives, but public expresses desire for high connectivity in site	Connectivity varies with each scenario. Scenarios 3 (mixed use office/institutional) and 4 (mixed use urban village) have the highest connectivity/intersection density. Scenario 5 (mixed use high density urban transit village) has lower intersection density but accessible transit corridor.	Y - guidelines focus on open and recreational space. All scenarios incorporate high connectivity with rest of site, including trails, pedestrian pathways, bikelanes, etc.	Will be a component, not an incentive	N/A	Y - planning goal to achieve equal or greater connectivity than highest in adjacent area according to ND standards and ITE manual. See calcs for adjoining neighborhood	~565 intersections in square mile surrounding parcel. Likely 600+	Need to check intersection density of current proposed plan
	23	- Adjacent and connected? (contiguous development)	25% adjacent to previous development and utilizes existing water and sewer mains, do not require	Y	Y	Y	Y	Y - previously connected to existing water and sewer mains.	Y	~60% of site adjacent to previous development with 145+ intersections in 1/2 mile radius from site boundary. Most blocks in	Yes
	24	- Transit-served?	50% of HH/non-res w/ 1/4-1/2-mi of 60 trips/weekday, 40 trips/weekend-day	Y - public desire for increased transit and	Y - varies slightly dependent on redevelopment scenario. Scenario 5 allows for the	Y, recreational and green space will be accessible for pedestrians, bicyclists, and will be close to	Transportation is a component	N/A	Y-plan includes standard for 50% of HH and non-res	See pages 6-7 in LEED v4 PDF. ~220 trips per weekday (84 and 134 bus routes) and ~180 weekend trips	
	25	- Walkable diverse uses?	20% of HH/non-res w/ 1/4-mi of 5, w/ 1/2-mi of 7, or w/ 1/4-mi of public transportation that provides direct service to diverse services. Diverse uses include food retail, community	Currently adjacent to Highland neighborhood, with a density and mix of uses.	Y - all five designs have diverse, walkable uses for community use. However, report does not focus on specific commercial uses of space.	Y - line 10, 20 and 30 are proposed areas all incorporate diverse uses, including indoor/outdoor athletic space, civic areas, dog parks, natural corridors and habitat space, etc.	Use and form part of the analysis	N/A	Y - planning goal for mixed uses that complement existing uses and services in the area.	Y-plan includes standard for 50% of HH and non-res	Yes - Existing services and transit around the site meet this criteria, plus services and transit will be added into the site.
2.3 Density											

a. Transit corridor minimums	26	Are minimum densities required within 1/4-1/2 mi of high-frequency transit service? If so, at what DU/acre and FAR? calc method)	12 DU/ac, 0.8 FAR at 40/60+ trips (note unique ND density service)	Goal for higher densities	Densities vary with high density urban transit village having most dense design at ~19.56 DU/ac	N/A	Y - 11-12 DU min expected	N/A	Y - Performance thresholds to achieve ND standards for	DU/acre for site = 45.77	Yes
b. Other location minimums	27	What are minimum densities in all or other parts of the community? If so, at what DU/acre and FAR?	7 DU/ac and 0.5 FAR	N/A	N/A	N/A	Minimum densities and FAR being	N/A	Y - plans for ND minimum density or higher	FSZD - 0.5 Minimum FAR	
c. Incentives/bonuses	28	Are incentives/bonuses offered for increasing densities above minimums? If so, at what levels of DU/ac and FAR, or comparable mechanisms such as increased height allowance?	Up to 63 DU/ac and 3.0 FAR	N/A	N/A	N/A	Density bonuses being considered	Mississippi River Critical Area overlay height limit of 40' - this covers	Plan lists city monetary and non-monetary incentives. Opportunity to tie certain incentives to	There is an opportunity here to incentivize increasing densities above minimums, and possibilities include more low- to mid-rise developments containing multiple	I don't know if we'll add incentives for greater density than what's required. We'd rather be aggressive with the minimum. -OK
2.4 Mixed-uses											
a. Authorized/encouraged	29	Does zoning enable mixed-uses? Are incentives offered for mixed-uses?	Diverse uses include food retail, community serving retail, commercial services,	Y	Y - All 5 scenarios achieve mixed uses, including open space, civic, residential, retail, office and	N/A	Y	N/A	Y-goals to achieve mixed uses. Provide specific incentive	Zoning enables mixed-uses in most districts.	Yes - Mixed use is main focus on our zoning and master plan.
a. Spatial extent	30	Where are mixed-uses located geographically in the community? Are they concentrated or dispersed?	4 diverse uses w/ 1/4-mi of 50% of HH (exemplary: 30 diverse uses)	N/A	Mixed uses are concentrated and clustered in each of the five scenarios.	N/A	Expect concentration of uses	N/A	Goal to achieve ND standards. Specify concentration of uses	Based on proposed zoning districts, mixed-uses are mostly concentrated and clustered.	Site will have proximate mixed use, but existing built area is general use separated.
b. Clustering	31	If diverse uses are clustered in certain areas, what are average walk distances between them?	600-800 ft (300-400 ft walk from cluster center)	N/A	N/A	N/A	Not specified in analysis	N/A	Goal to achieve ND standards. Specify walk distances	Based on proposed zoning districts, walk distances between clustered diverse uses ranges from <800 feet	Agree?
2.5 Large retail uses											
*a. Transit-served	32	Are large retail uses required to have superior transit service? Are there minimum headways for stops serving	Total retail of 150k sq ft, including 75k single retail use, requires 76/50 wkday/wkend	N/A	Not required, but scenario 5 would likely meet this depending on identification of large retail	N/A	Intent for superior transit. Not specified in	N/A	Goal to achieve ND standards. Specify superior transit for	There is an opportunity to ensure that any potential commercial/retail spaces have	Yes - Intent is to meet this.
2.6 Housing											
*a. Structure types	33	What range of dwelling structure types exist and how many units per type? Can the Simpson Diversity Index be applied to subareas of the community?	The Simpson Diversity Index (SDI) calculates the probability that any two randomly selected dwelling units will be of a different type. Types include large,	Surrounding neighborhood mainly single family, environmental conditions may	Scenario 4 would have highest SDI. Specify range. Would apartment/condos of differing densities count as separate dwelling structure types?	N/A	Zoning district types analyzed. T4M promotes greater diversity	N/A	Plan supports a full range of housing. Specify a range of dwelling structure types. Use SDI calc metrics	Cannot calculate without final zoning districts, but to achieve this, it is important that mixed-use zoning districts include a range of duplex and multistory residential spaces rather than solely	I doubt we will meet this. I'd guess that we'll achieve 0.25 SDI. Fine-grained diversity is hard to achieve in the market, so it would have to be required and some development efficiency is lost, which is there not.
	34	Are incentives offered for increasing diversity of structure types informed by comp needs (as determined in Planning process 1.1)	Y/N	Housing chapter of comp plan to increase	N	N/A	Incentives not specified	N/A	N	N - opportunity to incentivize diverse structure types with zoning districts.	We will require a certain level of diversity with zoning and not use incentives. Base zoning is more efficient to regulate than
	35	Are accessory dwelling units allowed?	Y/N	N/A	N	N/A	Y in residential	N/A	Not specified	Unsure.	Yes - We plan to allow them in the
*b. Pricing	36	What percent of rental units in the community are priced at: - 60% of AMI	5% (exemplary: 30%)	N/A	Not specified	N/A	Analysis to	N/A	Not specified in	N/A	Maybe - That's our policy goal, but
	37	- 80% of AMI	10% (exemplary: 50%)	N/A	Not specified	N/A	Analysis to	N/A	Not specified in	N/A	Maybe - That's our policy goal, but
	38	What percent of for-sale units in the community are priced at: - 100% of AMI	5%	N/A	Not specified	N/A	Analysis to	N/A	Not specified in	N/A	Maybe - That's our policy goal, but
	39	- 120% of AMI	8%	N/A	Not specified	N/A	Analysis to promote incentives for housing	N/A	Not specified in Roadmap	N/A	Maybe - That's our policy goal, but financial implications and funding sources to support it must be identified.
*c. Equity and resilience	40	Have affordable housing strategies, supported by financial and/or zoning incentives, been developed?	Y/N (strategies include but not limited to diversity of lot sizes, maximum single family home size, mix of densities,	Identifies a need for more inclusive communities	Not specified	N/A	Analysis to promote incentives for housing	N/A	Not specified in Roadmap	No - opportunity.	Not yet, but it is our intent to do so.
	41	Incentives for renters and owners to invest in new development?	Y/N	Not specified	Not specified	N/A	Potential to allow for	N/A	Not specified in Roadmap	N/A	
	42	Support for tools to mitigate displacement (gentrification)	Preserve existing housing, reduced cost of housing	Not specified		N/A	N/A	N/A	Not specified in Roadmap	N/A	No - It is not a big concern.
	43	Support for tools to mitigate displacement (natural disasters)	Access to information about and financing sources for disaster insurance; emergency shelter out of floodplain that	Not specified	N	N/A	N/A	N	N	N/A	No - It is not a concern.
*d. Co-located type & price diversity	44	Are incentives offered for co-locating diverse structure types and affordable units?	Y/N	Housing diversity and incentives	Not specified, but opportunity particularly evident in scenario 5	N/A	Potential to address with zoning	N/A	Not specified. See Ford site stats for housing types	N/A	Maybe - Depends if zoning qualifies as a way to achieve this--YES CAN BE ADDRESSED WITH ZONING
*2.7 Jobs/housing balance											
	45	What is the community-wide jobs/housing ratio?	1:0.75, 1:1.25 preferred	Finding the right		N/A	Not specified	N/A	Not specified in Roadmap. See Ford	?	Need to look up--JOBS A PRIORITY
	46	What are subarea ratios?	Minimum 1:0.5, 1:1 preferred	N/A		N/A	Not specified	N/A	Not specified in	?	No - We are unlikely to meet these
	47	Are incentives offered to strengthen		N/A	Not specified	N/A	N/A	N/A	N	N/A	Maybe - Assistance to attract
	48	What percentage of community members are employed within the	20%	Goal to employ local, regional,	Not specified	N/A	Not specified in analysis	N/A	Not specified	N/A	Need to look up.
*2.8 Food production, sales & security											
a. Food insecurity	49	What percent of households identified as food insecure?	As defined by USDA, food insecurity is limited or uncertain availability of nutritionally adequate and safe foods or limited or	N/A	Not specified	Not specified, but community gardens are a feature of all open space scenarios	N/A	N/A	Not specified	N/A	Not sure - I doubt it would rate as an area with food insecurity--PRIORITY FRESH AND LOCAL FOODS
	50	What percent of households are within 1/2mi walking distance of fresh food?	At least 85%	Not specified, but public	In scenarios 4 and 5, most will be in 1/2 mile walking distance to	Not specified, but community gardens are a feature of all open	100%	N/A	Ensure food access for most HH	Based on proposed zoning districts, >100% of households are within	Yes - Based on zoning and current availability of a large-scale
b. Food security	51	Are zoning and development regulations that support or incentivize farmers markets, community gardens, and urban agriculture in place?	Y/N	Strong desire for farmers markets and access to local	Not specified, but could be well supported by scenarios 4 and 5 (community roof gardens)	Community gardens are a feature of all open space scenarios	Community gardens will be a zoning component.	Not currently, but types of green infrastructure could facilitate	Y-provisions in plan	Opportunity to ensure zoning regulations incentivize this.	Yes - They exist in current City zoning. We will consider an incentive for privately managed public space in our zoning.
	52	Is there support for local farmers to utilize agricultural best management	Y/N	N/A	Not specified, but community roof gardens in scenario 5 could	N/A	N/A	N/A	Specify BMPs for urban farming	N/A	?
a. Garden/greenhouse locations	53	Are gardens and greenhouses permitted in any yard area in any land-use zone?	Y/N	N/A	Not specified	N/A	Not specified in analysis. Ensure	N/A	Plan advises for gardens and	N/A	Something to consider. -OK
b. Neighborhood gardens		Are neighborhood gardens permitted/regulated, including:		N/A	Not specified, but green space is a focal feature of all scenarios	Not regulated, but community gardens desired by public and incorporated into open space guideline scenarios (of varying sizes)		N - opportunity in planning green infrastructure for this - rainwater reuse for gardens as a stormwater management practice	Y	N/A	We had not thought about site-based regulations for this; some limited regulations exist Citywide.
	54	- Minimum growing space	60 sq ft/DU @ 35 DU/ac, up to 200 sq ft/DU @ 7-14 DU/ac	N/A	N/A	.7 acres or 1.4 acres of community garden space on site,	N/A	N/A	Include specifications for growing	N/A	
	55	- Minimum equipment	Pedestrian and solar access, fencing, water systems, raised	N/A	N/A	All farm equipment would be enclosed or screened from sight.	N/A	N/A	Include specifications for equipment and	N/A	
	56	- Ownership & mgmt requirements	Owned and managed by project/neighborhood occupants	N/A	N/A	Recommended that city amend ordinance zoning community garden as non-residential use. Gardens owned and managed by residents of development and can be used by those in adjacent neighborhoods.	N/A	N/A	Specify for gardens to be managed locally by residents	N/A	
c. Farmers markets	57	What percent of HH are within 1/2-mi walk of neighborhood gardens?	Proximity for most residents (50%+) preferred	Proximity for all residents	Specify neighborhood garden	Gardens will be easily accessible for residents of new development	N/A	N/A	Plan advises easily accessible	N/A	Yes - The public realm plan will include a community garden space
	58	Are farmers markets	Y/N	Not specified	Not specified - opportunity	Not specified	N/A	N/A	Permitted in plan	N/A	Yes - permitted in plan and

d. Community-supported agriculture	59	What are farmers market operational characteristics?	Open once weekly, 5 months/yr, products grown	N/A	Not specified - opportunity	Not specified	N/A	N/A	Specifies 2x/week during growing	N/A	1/wk will be a minimum during growing; it can be more if the
	60	What percent of HH are within 1/2-mi walk of a farmers market?	Proximity for most residents (50%+) preferred	Close proximity for all residents	Not specified - opportunity, scenario 5 community roof	Not specified	N/A	N/A	Goal for residents to get 60% of produce	If farmer's market(s) is/are permitted within the site, then	Yes - Farmers' market in civic square would be within 1/2 mile of
	61	What percent of employees are within 1/2-mi walk of a farmers market?	Proximity for at least 30% preferred	N/A	Not specified - opportunity	Not specified	N/A	N/A	Specify walk distance for employees	N/A	80% of employees would be 1/2 mile of planned market location
	62	Are incentives offered for developer purchase of CSA shares?	80% of DUs receive shares at least 2x a month and dropped within 1/2 mi of project	N/A	Not specified	Not specified	N/A	N/A	Not specifically for developers, but goal for residents to get	N/A	No - City will not get involved in this type of incentive. --LOOK INTO WHETHER THIS IS AN OPP?
	63	Are 50% HH within 1/2mi distance to a retail area where at least 50% of floor area is dedicated to fresh food?	Y/N	N/A	Scenarios 3, 4 and 5 HH will be within 1/2 mile distance to retail area with fresh food, but percent	Not specified	N/A	N/A	Goal for 60% produce for residents on site. Specify walk	N/A	I don't think so - I've never been to a market that's 50%+ floor area for fresh food - unless it's a farmer's
e. Food Stores	64	Are multilingual outreach programs in place to assist low-income community members receive supplemental	Y/N	N/A	Not specified	Not specified	N/A	N/A	Supplemental nutrition not specified	N/A	Don't know - This is a county and non-profit service, not a city one. -- SUPPORT LOCAL GROUPS AS
2.9 Energy facilities											
a. Renewable energy generation	65	Are renewable energy generation plants permitted in the local code?	Y/N	N/A	Aim to use existing hydropower plant, if feasible, and renewable	N/A	Ensure local code permits	N/A	Goal to use all feasible renewable	N/A	Yes
	66	What percent of total community electrical & thermal energy are provided by renewables?	5% of total costs (exemplary: 27.5%)	N/A		N/A	N/A	N/A	Goal for zero net. Specify costs	N/A	To be determined - goal is for it to be high.
	67	Are incentives offered for increasing the share of energy met by renewables?	Y/N in tax credits, grants, special utility rates	Look into potential for		N/A	Not specified in analysis	N/A	Mentions incentives in a general sense.	N/A	These will probably be in place when implementation strategies
	68	Are DHC systems present in the community? Are they permitted in the	Y/N	N/A		N/A	N/A	N/A	Plan recommends district energy	N/A	To be determined - Ford site energy plan identified DHC as the energy
	69	What percent of the community's total annual thermal energy demand is met by DHC?	80% of bldg sq ft in service area (exemplary: 95%)	N/A		N/A	N/A	N/A	Specify thermal energy goals	N/A	TBD
b. District heating & cooling	70	Are incentives offered for new/expanded DHC systems?	Y/N	N/A		N/A	Not specified	N/A	Incentives can be tied to new/expanded	N/A	TBD
*3. Transportation											
3.1 Transportation assessment											
	71	Has a formal transportation assessment been conducted that informs local planning and development?	Y/N	In progress	Yes, in progress	In progress	N/A	N/A	Ensure that transit analysis informs plans	Y - this is in progress, estimated completion date in February 2016	Yes, in progress
	72	Have informal transportation assessments been conducted to guide local planning and development?	Y/N; Walkscore, Bikescore, and Transitscores of 50%; exemplary 75%	In progress	Yes, in progress	In progress	In progress	N/A	Y	Most walkscores on the perimeter are 60+, Bikescores 70+, higher on the NE perimeter, transit score (?)	Yes, in progress
3.2 Pedestrian network											
a. Sidewalks	73	What percent of streets currently have sidewalks on both sides?	90%	Want sidewalks on both sides of	Not specified	N/A	Seem to promote	N/A	Plan for 95%	Based on maps of current surrounding community, ~80% of	Yes - Plan for 100% on site; NOTE that a few ROWs will be 'lanes' with
	74	Is new development required to have sidewalks on both sides of 100% of new streets?	100%	N/A	Not specified in any scenario, but all streets will have sidewalks	Guidelines promote walkability, a pedestrian network and easy bicycle access.	Seem to promote sidewalks on	N/A	Plan for 95%	Is this a typical requirement in Saint Paul? This requirement could be a good opportunity for the	Yes - Plan for 100% on site; NOTE that a few ROWs will be 'lanes' with shared ROW for
	75	What are minimum sidewalk widths?	8 ft retail/mixed-use blocks; 4	No width	Not specified in any scenario	N/A	To be included	N/A	Minimum 54-in per	Is there data available for	Yes - ROW plans meet these
	76	Are incentives offered for shading sidewalks?	40% of sidewalk length, tree shade w/ 10 years	No incentives but trees	All streets and sidewalks will be tree lined	N/A	To be included in specifications	Increased canopy cover and tree	Goal for 70% aerial tree cover over	N/A	Yes - All streets will be tree-lined per City standards for 80% tree
	77	Are at-grade vehicle crossings of sidewalks limited?	At grade crossings account for no more than 10% of the	N/A	N/A	N/A	Not specified	N/A	Suggests setting sidewalk standards.	N/A	Yes - This standard will be met; very few private driveways will be
	78	Do pedestrian amenities exist on sidewalks located in mixed-use zones?	Y/N includes benches, trash and recycling receptacles, way	Y	Yes, especially scenarios 4 and 5	N/A	Intention is Y	N/A	Calls for public gathering spaces.	Opportunity to ensure this exists in development.	Yes - There will be clear standards for amenities like this in the public
3.3 Bicycle network & storage											
a. Bike network	79	What is the total length of the local bike network? (in-street lanes, off-street paths, 25 mph or slower streets)	Minimum 5 mi	Strong emphasis on bike network.	All five scenarios, even the industrial scenario, feature bike paths and bike/pedestrian.	Lengths not specified, but trails will serve pedestrians, cyclists, skaters, hikers and cross-country	Specifies to be included	N/A	Plan includes for bike lanes at least every 1/2 mi	Mississippi River Blvd, Highland Avenue, Montreal Avenue and Fairview Avenue South adjacent to	Yes - This will be met.
	80	Does the bike network connect most (50%) of residential areas to, and between, community focal points and diverse uses in the development and	Y/N	Y	Y	Y, it will, as well as surrounding/adjacent neighborhoods.	Intention is Y	N/A	Plan adheres to complete streets guidelines. Ensure connections to focal	N/A	Yes - This will be met.
	81	Are bike lanes of adequate width and separate from vehicular lanes on streets with high speed limits?	Y/N: ≥1.25m wide for one way lanes, ≥2.5m wide for two way lanes; separate lanes demarcated by painted lines	Desire for speed limits at or below 25mph for	Y	Bike lanes/trails will have clear width of 12 feet.	N/A	N/A	Adheres to complete street guidelines. Include specific widths and speed	N/A	Yes - This will be met.
	82	What percent of HH are within 1/4-mi of the bike network?	Proximity for at least 50% preferred	Desire for most HH to be within	All scenarios but N/A for industrial scenario 1	Not specified, but intention that all will be.	N/A	N/A	Specifies 50% or more within 1/4 mi	N/A	Yes - This will be met.
	83	What percent of employees are within 1/4-mi of the bike network?	Proximity for at least 50% preferred	Not specified	This would be met in all scenarios.	Not specified	N/A	N/A	Specifies 50% or more within 1/4 mi	N/A	Yes - This will be met.
	84	Does the network connect to schools? Major employment centers? Diverse	Y/N	Acknowledges location	Not specified	Not specified	N/A	N/A	Specifies a well connected bike	N/A	Hopefully, we're trying -- CONNECTIVITY/SIGNIFICANT
	85	Are bike share programs in place?	Y/N	Not specified.	Not specified	Not specified	To be included	N/A	Not specified in plan	Y Nice Ride MN. Add additional	Yes
	86	Are bike spaces required for dwelling units? At what rates?	1 space/person for 30% of occupants, or 1 space/DU, whichever is greater, for	N/A	N/A	Not specified	Require bike space minimums	N/A	Bike facilities mentioned. Include specific metrics.	N/A	Yes - Current zoning draft requires at 1 space/unit.
	87	Are bike spaces required for retail uses? At what rates?	1 space per worker for 10% of workforce and 1 space/5000	Spaces desired in open public	N/A	Not specified	Include specifics for uses	N/A	Bike facilities mentioned. Include	N/A	Yes - We will draft the zoning to meet this standard.
	88	Are bike spaces required for non-residential uses other than retail? At	1 space per worker for 10% of workforce and 1 space/10,000	N/A	N/A	Not specified	Include specifics for uses	N/A	Bike facilities mentioned. Include	N/A	Yes - We will draft the zoning to meet this standard.
b. Bike parking/storage	89	Are showers for bicyclists required at non-residential uses?	1 shower/100-150 employees	Desire for showers at	N/A	Not specified	Include specifics for uses	N/A	Bike facilities mentioned. Include	N/A	Not sure - We need to research this more.
	90	What are bike parking/storage design standards?	Locked, signage, lighting, within 100 ft of bldg	Desire for user-friendly bike	N/A	Not specified	Include specifics for uses	N/A	Bike facilities mentioned. Include	N/A	Yes - We will draft the zoning to meet this standard.
	91	What percent of HH are within 1/4 mi walk of transit stops?	50%	Public desire more bus stops.	Scenario 3,4,5 90-95%	N/A	N/A	N/A	Plan provides for 50%	Assuming proposed zoning districts, ~25-50% HH in 1/4 mile	Current plan has about 90% within a 1/4 mile.
3.4 Transit service											
	92	What percent of employees are within 1/4 mi walk of transit stops?	50%	N/A	Scenario 3,4,5 90-95%	N/A	N/A	N/A	Plan provides for 50%	N/A	Current plan has about 90% within a 1/4 mile
	93	How many local transit stops meet ND minimum service levels?	60 weekday trips, 40 weekend daily trips	Goal to relieve car traffic, particularly on Cleveland/Ford and improve transit	See pages 6-7 in LEED v4 PDF. ~220 trips per weekday (84 and 134 bus routes) and ~180 weekend trips (~182 Saturdays, ~178 Sundays) within 1/4 mile radius from mixed-use mid rise zone directly southwest of Lunds & Byerlys. Opportunity to connect zones further south and west to these transit lines w/ dedicated bike lanes, pedestrian-friendly roads and additional transit	N/A	N/A	N/A	Provide transit hub on site, level of service not specified	N/A	Need info from Metro Transit
	94	What are minimum transit stop shelter standards?	Covered, partially enclosed, lighting, seating, service info	N/A	Not specified	N/A	N/A	N/A	Covered, heated shelters in plan	N/A	Not sure - Metro transit decides this. If we want covered shelters at
	95	Are transit passes offered on a sliding fee scale based on income, or are incentives provided to subsidize transit	Y/N	N/A	Not specified	N/A	N/A	N/A	Not specified	N/A	Not sure - this would be done through other organizations like Metro Transit or Ramsey County
	96	What is the street network intersection density? (community and subareas)	90 intersections/sq mi	Goal for interconnectivity	Greater than adjacent (500+), scenarios 3 and 4 most dense	N/A	Zoning component	N/A	Greater than adjacent (500+)	~570 intersections in 1/2 mile radius of site.	SIGNIFICANT
3.5 Street network											
	97	What are average block lengths?	maximum 600-800 ft	Length not	Not specified	N/A	400-660 ft in	N/A	Surrounding < 600.	N/A	600 feet or less

	98	Are incentives offered for increased intersection density/shorter block length in new developments?	Y/N	N/A	Not specified	Not specified, but strong emphasis on pedestrian and cyclist network; shorter block	Not specified	N/A	Incentives?	N/A	City is determining street plan and will ensure a dense grid. --Ok
	99	Are through-connections required for new cul-de-sacs?	Y/N	N/A	No cul-de-sacs in any scenario.	N/A	Intention is yes	N/A	Goal for zero cul-de-sacs	Two cul-de-sacs directly adjacent to site.	Cul-de-sacs not allowed.
	100	Are incentives offered for planting street trees?	60% of both sides (exemplary: 90%)	No incentives, but increased	Goal for all streets and sidewalks to be lined with trees	N/A	Incentives not specified	Tree planting and increased green	Plan calls for zoning to include street tree	N/A	Street trees required on both sides.
3.6 Motor vehicles											
a. Traffic speed	101	What speed limits apply to residential streets?	20 mph for 70% of streets (exemplary: 95%)	Not specified	Not specified	N/A	N/A	N/A	Follow complete streets guidelines,	What are speed limits in surrounding area?	Check - I think City is limited to min 30 mph for local streets to remain
	102	What speed limits apply to non-residential and mixed-use streets?	25 mph for 70% of streets (exemplary: 90%)	Not specified	Not specified	N/A	N/A	N/A	Follow complete streets guidelines,	N/A	Check - I think City is limited to min 30 mph for local streets to remain
b. Motor vehicle parking	103	What percent of streets have on-street parking on both sides?	70%	Mixed use and residential	Not specified	N/A	Intention for on-street parking	N/A	Not specified	N/A	
	104	Are off-street surface parking lots required to be on the side or rear of?	Y/N	Yes, that is goal	Not specified	N/A	Yes	N/A	Plan asks zoning code to address parking	N/A	Yes - This will be required in the zoning plan. --RED?
	105	Is there a maximum amount of project development area that can be devoted to off-street surface parking?	20% of total imperviousness	Goal to limit	Not specified	N/A	No, but uses flexible parking minimum	N/A	Plan asks zoning code to address parking standards and to	N/A	Yes - We will tightly restrict this, definitely will be less than 20% of total imperviousness.
	106	Is there a maximum acreage for individual off-street surface parking	2 acres	Goal to limit	Not specified	N/A	N	N/A	No	N/A	Yes - Current proposal is max. lot size of 20 spaces.
c. Charging stations	107	Can off-street parking spaces in multifamily and non-res bldgs be unbundled for separate selling or	90% of DUs or non-res floor area	Not specified	Not specified	N/A	Not specified	N/A	Not specified	N/A	Yes - Current proposed zoning requires unbundling.
	108	Are electrical vehicle charging stations present in community?	Y/N	Not specified	Not specified	N/A	To be included	N/A	Y-included in plan	N/A	We'd like to require them within shared parking structures, but need
*3.7 Transportation demand management											
4.1 Wildlife habitat	109	Are TDM programs required for major developments? How much auto trip reduction is typically sought?	20% of weekday peak period	Goal to include, state law requires	Not specified	N/A	N/A	N/A	Goal to reduce VMT to 4,000 or less per driving resident/year	N/A	Yes - TDM plans required under current zoning for large projects or for projects seeking more parking
	110	Are major project developers offering public transit pass subsidies for at risk demographics?	Y/N	N/A	Not specified	N/A	N/A	N/A	No	N/A	No
	111	Are major project developers providing private developer-sponsored shuttle service?	Y/N	N/A	Not specified	N/A	N/A	N/A	No	N/A	No
	112	Are vehicle sharing programs in	Y/N	Goal to include	Not specified	N/A	To be allowed	N/A	Included in plan	N/A	Yes - 'car2go' Twin Cities is a very
	113	What percent of HH are within 1/4-mi walk of shared vehicle locations?	50%	Not specified	Not specified	N/A	N/A	N/A	Y-plan for 50%	N/A	
	114	What percent of employees are within 1/4-mi walk of shared vehicle locations?	50%	Not specified	Not specified	N/A	N/A	N/A	Y-plan for 50%	N/A	TBD - Proposed zoning requires 1 space for car share vehicles per 20
*4. Resource Protection											
4.1 Wildlife habitat											
a. Imperiled species	115	Are federal/state/NatureServe species present or likely in the community?	Y/N	N/A	N/A	Likely, natural areas and habitat protection key feature of open	N/A	N/A	Plan includes strategy for inventory	Uncertain whether endangered species exist in the community.	TBD in EIS for the site - Uncertain whether endangered species exist
	116	If so, are species protected by a Habitat Conservation Plan or equivalent?	Follow state and federal HCP requirements or work to	N/A	N/A	Likely, natural areas and habitat protection key feature of open	Not specified	Mississippi River Critical Area	Y	N/A	Yes - Mississippi River Critical Area
	117	Is identified habitat protected from development disturbance in perpetuity?	For example: conservation easements, reduce development threats, or protect equivalent habitat out of the project boundary from future development	Desire to protect large portion of natural space, with native plant buffers	N/A	Yes, any habitat planned to be protected or within appropriate buffer	Not specified	Mississippi River Critical Area - will this still be considered in developing the site?	Yes, any habitat planned to be protected or within appropriate buffer	N/A	Yes - Mississippi River Critical Area overlay zoning has strong vegetative protections.
	118	Are incentives offered for habitat restoration? For ongoing management?	Restore an area equivalent to 10% of development footprint (exemplary: 20%) to	N/A	N/A	Ongoing management	Not specified	Mississippi River Critical Area - will this still be	Revegetate using native flora and fauna	N/A	No incentives, but zoning will require heavy use of native and climate resilient species.
	119	Are native species encouraged or required?	Work with a qualified biologist or botanist to ensure that restored areas will have	Native grasses and plant species	N/A	Y	N/A	Yes	Yes	N/A	
	120	If invasive species are prevalent in the community, is a management plan in	Work with a qualified biologist or botanist to create	N/A	N/A	N/A	N/A	N - this should be an important	Work to ID and control invasives to	N/A	Yes - Invasives management is done by State DNR, non-profit
4.2 Water resources											
a. Wetlands & water bodies	121	Are wetlands or water bodies present in the community?	Y/N	N/A	Y - Mississippi River adjacent to site.	Y	Y	Y - Mississippi River is adjacent to	Y	Y - fresh water/shrubs near Little League Fields SE border. Also, the	Y - Mississippi River, Hidden Falls stream bed, and some wet pockets.
	122	If so, are wetlands/water bodies protected beyond minimum federal and state requirements?	Avoid development on buffer land within 50' of wetlands or within 100' of water bodies.	N/A	Not beyond state/local - only Mississippi River Critical Overlay is taken into account	N/A	River overlay zone	Currently not protected beyond state/local	Follows MN wetland guide - at code	N/A	Follows city/state regs (MN wetland guide)
	123	Are incentives offered for wetlands/water bodies	Restore area equivalent to 10% of development	N/A	N/A	N/A	N/A	N - this is a good opportunity	Follow MN restoration guide	N/A	Follow MN restoration guide
	124	Are zoning codes in place that prohibit wetland development?	At least 100 ft from wetland	N/A	Mississippi River Critical Overlay	Y	Y	Mississippi River Critical Overlay	Follows city/state regs (MN wetland guide)	N/A	Follows city/state regs (MN wetland guide)
b. Floodplains	125	Are floodplains present in the community?	Y/N	N/A	N-on river parcel separate from site.	Y	Y- adjacent to site	N-on river parcel separate from site.	N	Yes, outside FEMA 100-year- and 500-year-flood designation. Climate change could result in	Yes - The Ford river parcel is within the floodplain zone.
	126	If so, are floodplains protected beyond minimum federal/state requirements?	Y/N	N/A	Mississippi River Critical Area overlay. Area C is not part of site	N/A	N/A	Mississippi River Critical Area	N/A	Local/state partnership protects floodplains - Mississippi River	Yes - State regulated protection under Mississippi River Critical Area
	127	Are incentives offered for avoidance of floodplains or increased resiliency?	Y/N	N/A	N/A	N	N - opportunity.	N - opportunity.	Plan calls to address stormwater and heat	N/A	Yes - protections in place thru current State and Capital Region
	128	Are multilingual support services in place to assist low-income and at-risk demographics located within floodplains to secure flood insurance?	Y/N	N/A	N/A	N/A	N/A	N	N	N/A	Not sure - this would be a State or County function.
c. Brownfield soil remediation	129	Are sensitive infrastructures, such as utility infrastructure, community centers, schools and shelters, located outside of floodplains?	Y/N	N/A	N/A	N/A	Not specified	N - floodplains should be considered when designing and	Plan specifies chance of increased flooding, though not in specific floodplain, take into	N/A	Mostly - the Ford steam plant structure is along the river and it's basement floods in 100-yr events. It's a potentially historic bldg and
4.3 Soils											
a. Agricultural soil:	130	Are ag soils present in the community?	Primarily/uniquely state or local	N/A	N/A	N/A	Not likely	N/A	Not likely	N/A	No
	131	Are ag soils protected by TDR programs, mitigation acreage programs, or similar mechanisms?	Y/N	N/A	N/A	N/A	N/A	N/A	N	N/A	Not applicable
	132	Are ag soils developable if the immediate vicinity is already committed to urbanization?	Infill and transit-served sites are developable	N/A	N/A	N/A	N/A	N/A	Y	N/A	Not applicable
b. Steep slopes	133	Are steep slopes present in the community, and if so, what minimum slope percent is defined locally as	15%	N/A	N/A	N/A	N/A	River bluff adjacent to the site	N	Steep river bluff adjacent to community, but not part of site to be redeveloped (Area C)	Yes - Steep slopes (11% and 18%) are protected by the Mississippi River Critical Area overlay zoning.
	134	Are steep slopes protected from development?	No disturbance of slopes > 15%, protect existing slopes	N/A	N/A	Uninterrupted vegetated shoreline/bluff should be	N/A	River bluff adjacent to the	No slopes, but ensure that adjacent river	N/A	Partly - Prohibition on residential development on slope 18%+ and on
	135	Are incentives offered for steep slope restoration?	Restore 100% of slopes >40%, 60% of slopes 26-40%, 40% of	N/A	N/A	N/A	N/A	N/A	N	N/A	No
c. Brownfield soil remediation	136	Are contaminated brownfield soils present in the community?	Y/N	Y	N/A	Y	Y	Yes, H concentrated	Y	Yes. Impacted soils, but what is current state? Are there current	Yes

	137	Is remediation required before development? Are incentives offered for superior remediation?	Y/N	N/A	Not specified - but this could affect development/types of development in each	N/A	Not specified	No. Soil correction/remediation would be	Y-plan includes for soil remediation. Any incentives?	N/A	Yes - Land must be cleaned up to a minimum industrial use standard, or higher standard for commercial
4.4 Coastal Protection											
	138	Are zoning codes in place that prohibit shoreline development?	Up to 500 feet inland from coast and at least 12 feet from	N/A	Y	Y-River overlay	N/A	N/A	N/A	N/A	Yes - Mississippi River Critical Area overlay.
	139	Is a resiliency management plan in place for storm surge protection?	Dune construction, grass planting, levee construction,	N/A	Natural spaces to be incorporated mostly along river, includes	N/A	N/A	Storm surge unlikely, but resilience	N/A		City in process of creating a resiliency plan and identifying
5. Public Facilities & Services											
5.1 Civic & recreation spaces											
	140	What percent of HH are within 1/4-mi walk of a civic space, e.g. plaza?	90%	N/A	Not specifically outlined in individual scenarios, but vision	Goal is for all to be.	Component may require open	Green plazas with green	Y- goal for 1/2 acre	Opportunity dependent on zoning districts.	
	141	What percent of employees are within 1/4-mi walk of a civic space?	90%	N/A	Scenario 2 specifically references a series of plazas along the Ford	Goal is for all to be.	Component may require open	N/A	Y- goal for 1/2 acre	Opportunity dependent on zoning districts.	
	142	What percent of HH are within 1/2-mi walk of a public outdoor or indoor recreation facility?	90%	Strong emphasis on recreational	N/A	Goal is for all to be.	Component may require open space minimum	N/A	Goal includes creation of a community space, a	Opportunity dependent on zoning districts.	
	143	What percent of employees are within 1/2-mi walk of a recreation facility?	90%	N/A	N/A	N/A	Component may require open	N/A	Goal includes creation of a	Opportunity dependent on zoning districts.	
	144	What are civic/recreation space minimum sizes?	Civic, 1/6 acre 1:4 proportion if less than 1 acre; recreation, 1 acre outdoors or 25k floor area indoors	N/A	Varies based on size of parcel of site dedicated to civic/recreation space. Ranges from 15 acres to 39 acres to 70 acres.	Picnic and civic gathering areas will range from just less than an acre to several acres at higher levels of open space	Component may require open space minimum	N/A	Specify minimum sizes	N/A	
	145	What are emergency facility space minimum sizes?	5 sq ft per person for long term tornado shelters & 10 sq	N/A	N/A	N/A	Not specified	N/A	Include emergency facility space -	N/A	
5.2 Education Programs and Campuses											
a. Land area	146	Is new school campus acreage capped by school type?	Elementary 5 acres, middle school 10 acres, high school	N/A	N/A	N/A	N/A	N/A	Not specified	N/A	
b. Access	147	What percent of HH are within 1/2-1 mi walk of elem/middle/high schools?	50% of DU within 1/2-1 mi walk	N/A	Elementary and high schools exist within one mile of border of	N/A	N/A	N/A	Not specified in plan.	Highland Elementary School is within 1/2 mile of eastern edge of	
	148	What percent of each school's 1/2-1-mi walk routes are ND-compliant?	Sidewalks both sides, bike network, traffic	depends on the road type	N/A	N/A	N/A	N/A	Not specified in plan.	N/A	
	149	What percent of ped routes on school campuses are ND-compliant?	100% no crossing bus zones, parking ingress/egress, or	N/A	N/A	N/A	N/A	N/A	Not specified in plan.	N/A	
	150	Are early childhood education programs in place?	Y/N	N/A	N/A	N/A	N/A	N/A	Not specified in plan.	N/A	
c. Joint use	151	Are incentives offered for joint use of school facilities?	Y/N	N/A	N/A	N/A	N/A	N/A	Not specified in plan.	N/A	
5.3 Infrastructure content & efficiency											
a. Recycled content	152	Do local government procurement policies and public works standards require recycled content in purchased equipment/materials/supplies?	50% of total mass (exemplary: 75%); infrastructure materials include roadways, water retention tanks, stormwater	N/A	N/A	N/A	Not currently part of zoning, framework mentions	N/A	Y-plan asks for minimum 30% total value materials for infrastructure are	N/A	
b. Energy efficiency	153	Do local government procurement policies and public works standards require superior energy efficiency in purchased equipment?	Energy use 15% below least first-cost option for lighting, water pumps, utility systems, parking meters (exemplary:	N/A	N/A	N/A	Not currently part of zoning, framework mentions	N/A	Not specified in plan.	N/A	
c. Distribution	154	Are infrastructure improvements distributed equitably throughout affected delivery area?	Y/N	N/A	N/A	N/A	Not specified	N/A	Not specified in plan.	N/A	
5.4 Solid waste management											
	155	Are the following programs operated/publicized and available to all res and non-res customers: - General recycling?	Y/N	Public desire - Not addressed in five scenarios, waste, recycling and compost to site - zero waste	N/A	N/A	N/A	N/A	Goal for zero waste	N/A	
	156	- Hazardous materials collection?	Y/N	N/A	N/A	N/A	N/A	N/A	Goal to reduce all waste, no specific mention of hazardous material collection	N/A	
	157	- Centralized composting?	Y/N	Preference for curbside collection.	N/A	Not centralized, but will accompany community gardens.	N/A	N/A	Y- goal for neighborhood composting site for disposal and reuse of compost	N/A	
	158	- Sidewalk recycling receptacles?	Receptacles on every block or 800 ft whichever is shorter	Preference for receptacles in	N/A	N/A	N/A	N/A	Support for weekly curbside recycling for	N/A	
	159	- Construction waste management?	50% of volume	N/A	N/A	N/A	N/A	N/A	Goal to reduce all waste, no specific mention of hazardous material collection	N/A	
*5.5 Social Services											
	160	Are there multilingual education programs to inform residents about how to enroll in available service programs?	Y/N; health insurance, home/rental insurance, early childhood education, adult and continuing education, low income assistance programs	N/A	Not specified	N/A	N/A	N/A	Not specified in plan.	N/A	
	161	Is there support for programs that lower price of providing basic needs for low-income households?	Y/N	N/A	Not specified	N/A	N/A	N/A	N/A	N/A	
6. Site Development											
6.1 Site disturbance & preservative											
a. Erosion & sedimentation control	162	Are ESC plans required? Are their BMPs equivalent to Washington State or EPA BMPs?	Local requirements are consistent with EPA approved State programs	N/A	Not specified	Y - direct runoff minimized, GI should be utilized for stormwater control, mitigate uses of chemical	Not specified	Not specified, but runoff from construction of	Y-Plan requires ESC and protection of soil structure and	N/A	
	163	Are incentives offered to leave undeveloped land undisturbed? (or limit new development to previous development footprint)	Y/N	N/A	Not specified	Y, not specific incentives, but encouraged.	N/A	N/A	Plan provides for protection of soil structure and minimize	N/A	
b. Construction impact zones	164	Are CI2s delineated to limit on-site disturbance during construction?	CI2 limited to 40 ft beyond bldg perimeter, 10 feet beyond walkways, 15 feet	N/A	Not specified	Not specified	Not specified. Limit impact zones	Not specified, but important opportunity when	Y-25ft pervious surface, 5ft tree lines, specify street curbs,	N/A	
c. Tree protection	165	Are trees on development sites surveyed for condition, heritage/champion status, invasiveness?	Y/N condition evaluated by certified arborist, valuable species identified, threat from	N/A	Not specified	Not specified	Include specifications on tree types and	N/A	N - trees included to enhance soil	N/A	
	166	Are identified significant trees protected from development disturbance?	Y/N	N/A	Not specified	Not specified	Not specified	N/A	provisions for protecting existing trees and groups of trees	N/A	
6.2 Climatic design											
a. Solar orientation	167	Are incentives offered for solar orientation of new blocks and	75% of blocks or bldg floor area (exemplary: 95%)	Solar exposure identified as a	Not specified	Not specified	Y- a recommended	N/A	Plan includes that buildings should be	See MN Solar Suitability map http://solar.maps.umn.edu/app/	

b. Heat island reduction	168	Are incentives offered for shading sidewalks with street trees or over-hanging structures? Are incentives offered for high-reflectance materials, open grid paving, tree shading, over-hanging structure shading, or vegetated roofs?	50% of non-roof surfaces, 75% high-reflectance or vegetated roofs, or a combination (exemplary: 100%)	N/A	No specific incentives are identified, but vision of five scenarios aims for all streets and sidewalks in development to be tree-lined.	Not specified	Not specified	Not specified, but green roofs, rain gardens and bioswales as stormwater management strategies would contribute to heat island reduction.	Inclusion of green roofs. Minimum 30%, goal 50% green roofs, 70% aerial tree cover	N/A	
6.3 Water resources											
a. Rainwater management	169	Do regulations require, or are incentives offered for, infiltration, evapotranspiration, or reuse of rainwater on new development sites? If so, at what rates?	Use BMPs recommended by federal and state authorities. Mgmt by 80th-95th percentile event; (exemplary: 97th percentile)	Overwhelming support for recreating stream flow and for 9 acres of	Incentives are not specified, but Scenario 3 offers onsite water retention/detention and BMPs will be employed. Scenario 4 features 'green fingers' to	Recommended, but not specified.	Potential to include BMP as part of overlay district and address in	Y- stormwater goals are feasible and attainable on the new site despite being	Y-reduce runoff by 90% using infiltration (50%) and evaporation or reuse (40%) Goal of zero.	N/A	
b. Landscape irrigation efficiency	170	Do regulations require, or are incentives offered for, reduction in water use for landscape irrigation? If so, at what	50% reduction from baseline (exemplary: 75%)	N/A	This is not specified, but scenarios 2-5 feature significant green space and encourage good	Recommended, but not specified.	Not specified	Extensive reduction is possible and	Goal for 50% reduction		
c. Wastewater reuse	171	Is wastewater allowed to be separated or treated and reused on-site? If so, at what rate?	25-50% of annual volume (exemplary: 75%)	Systems and treatment for rainwater	Not specified, but could be incorporated into the proposed management ideas.	Not specified	Not specified	N/A	Goal to increase onsite re-use	N/A	
6.4 Exterior lighting											
	172	Do regulations require, or are incentives offered for, light pollution reduction?	50% of lights have motion detectors to reduce light by 50% when no activity,	N/A	N/A	N/A	Possible to be included as T district	N/A	Yes, limit light pollution. Include specifications	N/A	
7. Buildings											
7.1 Form & function											
a. Setbacks	173	What is the range of setbacks in the local code?	80% < 25 ft; 50% < 18ft	N/A	N/A	N/A	15-25 ft for residential.	N/A	Not specified	All < 25 ft, except River Residential, all others < 20ft except BMU < 10 ft	
b. Height	174	Are minimum building heights required relative to street width in selected areas?	15% of street length at minimum 8H-SW of 1:3	N/A	Requirements depend on zoning and street width/length. Based on the scenarios, highest building is 10 stories in scenario 5; 8 stories in scenarios 1-4.	N/A	Building heights are prescriptive based on zone. Include Street width/ratios	N/A	Not specified	Maximum heights; Mississippi River Critical Area overlay requires max building height of 40' in proposed western half of site. Street width calculation?	
c. Entries	175	Are building entries required to face public space? (other than parking lots)	Y/N	N/A	Not specified	N/A	Specify metric	N/A	Goal for active ground uses. Specify	N/A	
d. Facades	176	Are entries required at minimum spacing on facades?	30-75 ft	N/A	Not specified	N/A	Specify metric	N/A	Not specified	N/A	
	177	Are non-res ground-floor building facades required to have minimum amounts of clear glass windows?	60% of facades between 3-8 ft above grade	N/A	Not specified	N/A	Specify metric	N/A	Not specified	N/A	
	178	Are retail use windows required to be unshuttered at night?	Y/N	N/A	Not specified	N/A	Specify metric	N/A	Not specified	N/A	
	179	Is the length of blank walls limited?	50 ft	N/A	Not specified	N/A	Specify metric	N/A	Not specified	N/A	
e. Ground-floor uses	180	Are the number of garage openings/service bays on block faces limited?	20% of street frontage	N/A	Not specified	N/A	Specify metric	N/A	Not specified	N/A	
	181	Is a mix of active ground-floor uses in new development required or	100% of mixed use buildings with ground floor retail along	N/A	Not specified, but encouraged/present in scenarios	N/A	Active uses encouraged.	N/A	Goal for mixed uses. Specify standards	N/A	
	182	Must a share of ground-floor dwelling units be elevated above grade?	50% of DU at least 24 inches	N/A	Not specified	N/A	Specify metric	N/A	Not specified	N/A	
7.2 Visitability & universal design											
a. Residential buildings	183	How much of total residential construction complies with ICC/ANSI A117.1/Type C or ND specs for 4+ unit bldgs?	20% of DUs (exemplary: 40%)	N/A	Not specified	N/A	Not specified	N/A	Not specified	N/A	
b. Circulation routes	184	How much of the community outdoor routes of travel within projects, and public rights-of-way, complies with ADA /ABA? Do regulations or incentives achieve more in the future?	100% compliance	N/A	Not specified	N/A	Not specified	N/A	Goal to achieve ADA compliance	N/A	
7.3 Green performance											
a. Green certification	185	How many buildings are LEED or otherwise green certified?		N/A	All buildings in Scenario 3 required to be LEED certified; not	N/A	City buildings (?)	N/A	Goal for LEED-NC	N/A	
	186	What building types, what programs, what levels?	incentives for LEED standards for new development and	N/A	All buildings in Scenario 3 required to be LEED certified; not	N/A	City buildings (?)	N/A	Minimum threshold for building	N/A	
	187	Is green building certification required or incented?	One bldg or 10% of sq ft (exemplary: 90%)	N/A	All buildings in Scenario 3 required to be LEED certified; not	N/A	City buildings (?)	N/A	Saint Paul building policy for buildings	N/A	
b. Energy efficiency	188	Is new construction/major renovation required/incented to achieve energy savings beyond code minimums?	10% beyond code (exemplary: 30% see specs)	N/A	Not specified	N/A	City buildings (?)	N/A	Meet energy targets for MN state and St. Paul Green Energy	N/A	
c. Water efficiency	189	Is new construction/major renovation required/incented to achieve water savings beyond code minimums?	20% above baseline (exemplary: 50%, see specs)	N/A	Not specified	N/A	Not specified		Goal to achieve high-efficiency water savings through gray	N/A	
7.4 Reuse & historic preservation											
a. Reuse	190	Are incentives offered for building reuse?	50% of whole bldg or 20% of total project stock, see ND specs (exemplary: 75% and	N/A	Not specifically, but retention or adaptive use of all existing structures is encouraged in every	N/A	Not specified	N/A	Goal to reuse existing buildings or components.	N/A	No
b. Historic preservation	191	Are historic-designated buildings present in the community?	Y/N	N/A	N	N/A	N/A	N/A	N/A	N/A	Not at this time.
	192	If so, are such buildings protected by local or state/federal requirements for rehabilitation or reuse?	Y/N	N/A	N/A	N/A	N/A	N/A	Protect historic sites	N/A	NA
	193	Are incentives offered for historic building rehabilitation?	Y/N	N/A	N	N/A	N/A	N/A	N/A	N/A	Yes, strong state and local tax credits are available.
*r8. Economic Development											
8.1 Local Workforce											
		Is there support for the following:	Y/N								
	194	Local hiring for development projects		Unclear	N/A	N/A	Not specified	N/A	Goal for living wage jobs on site. Provide incentives for local	N/A	No requirements, but City encourages it.
	195	Living wages	Based on MIT living wage calculator		Goal for family sustaining wage \$15.15 starting/\$12.83 with benefits. Retail and service jobs do not typically pay this.	N/A	Not specified	N/A	Goal for living wage jobs on site-- see calculation	N/A	Required for projects receiving city funding.
	196	Community workers/benefits agreements			Not specified	N/A	Not specified	N/A	Provide worker benefit agreements	N/A	No requirements, but City encourages it.

8.2 Workforce Development										
	197	What is the highschool graduation rate? 85%	N/A	N/A	N/A	N/A	N/A	N/A Specify goals as indicated	74% in 2013 in Saint Paul, MN.	
		Are workforce development and training supported through the following measures:	N/A	N/A	N/A	Not specified	N/A	Not specified	N/A	
	198	higher education facilities located within 10 km or can be reached by 45 min commute for 50% of HH Y/N	Y- any opportunity to connect	N/A	N/A	Y	N/A	Y- University of MN. Ensure adequate transportation access	Yes, many universities and colleges in the St. Paul/Minneapolis area.	Yes, many universities and colleges in the St. Paul/Minneapolis area.
	199	- Civic space or subsidized space for workforce development training	N/A	N/A	N/A	Not specified	N/A	Not specified	N/A	Unlikely
	200	- Support for skills development programs delivered to at least 2 vulnerable stakeholders groups or to employers/employees in professions or sectors where wages are below living wage? Y/N	N/A	N/A	N/A	N/A	N/A	Not specified	N/A	Unlikely in the area - programs like this exist in other parts of the city.
8.3 Economic Enhancement and Resiliency										
	201	Plan in place to address: - Strategies to target industry and/or business development? Y/N	In progress	N/A	N/A	N/A	N/A	Link to sustainability?	N/A	Yes - Ford Jobs Strategy work group is preparing strategies to recruit
	202	- Incentives for local purchasing for local government and businesses? Y/N	N/A	N/A	N/A	N/A	N/A	Goal for infrastructure	N/A	Not sure
	203	- Equal opportunity? 1 job per person; 80% population above median	N/A	N/A	N/A	N/A	N/A	Not specified	N/A	?
*9. Health and Safety										
9.1 Health/Pollution exposures										
	204	Has a health-risk assessment been conducted for target area with a special emphasis on vulnerable populations? Y/N; CalEnviroScreen assesses to air quality toxins, pesticides, drinking water, toxic releases from facilities,	Traffic study underway (montreal/cretin connectors)	N/A	N/A	N/A	Report identified areas of soil and groundwater impact above	N	N/A	No
	205	Is a plan in place to improve number and types of exposures to pollution burdens, particularly for sensitive Y/N	N/A	N/A	N/A	Y-district development will depend on	N/A	MPCA for stormwater pollution protection, reduce	N/A	Nothing planned
9.2 Access to health care										
	206	Does a civic space exist with staff dedicated to offering multilingual support services for low-income and at-risk community members access adequate health care? Y/N	N/A	Not specified	N/A	N	N/A	Not specified	N/A	No
9.3 Emergency Response Services										
	207	Is an emergency response plan in place that adequately addresses at-risk demographics as defined by NAACP? Y/N	Not specified	Not specified	N/A	N	N/A	Not specified	N/A	I don't think so.
9.4 Public safety										
	208	Has an informal/formal assessment of community safety been conducted? Crimescore below 50%; exemplary below 75%	N/A	Not specified	N/A	N/A	N/A	Not specified	N/A	Neighborhood crime is low and we do not expect that to change as a
	209	Do plans and design principles address safety issues identified in the community assessment? Y/N	N/A	Not specified	N/A	No	N/A	Not specified	N/A	Plans will address safety of people in relation to public infrastructure like streets, sidewalks and lighting.
9.5 Healthy Housing										
		Is there support for maximizing the health of low income/affordable housing units in the form of:	N	Not specified	N/A		N/A	Not specified	N/A	County manages this.
	210	- Enforcement from state or local code or public health officials to address indoor air quality, drinking water quality, toxins, pests and other hazards in affordable housing units? Y/N	N/A	Not specified	N/A	N	N/A	N	N/A	State of MN manages this.
	211	- Financial assistance, in the forms of grants or subsidized loans, available to remediate indoor air pollution problems in low-income homes or affordable rental units Y/N	N/A	Not specified	N/A	N	N/A	N	N/A	State of MN manages this.
10. Public Art										
10.1 Art in the community										
	212	Provide a broad range of arts and cultural resources and activities that encourage participation and creative self-expression Y/N	Strong desire for public and local art features in the site.	Not specified	Y, potential for this in some community areas outlined in open space guidelines	N/A	N/A	Not specified	N/A	City is encouraging arts group to put together a Ford site public art strategy. City's new public art ordinance will require 1% of infrastructure budget for site to be spent on public art.

Appendix III

Case Example Detail: Vauban, Freiburg, Germany

In 2006, the City of Freiburg, Germany completed the redevelopment of “Quartier Vauban”, a former French military barrack site, which housed troops during the Second World War. Following the Chernobyl nuclear disaster and historic, large-scale protests in the nearby village of Why, the City of Freiburg, today dubbed Germany’s “Green City”, decided to adopt environmentally-sound policies including low-energy consumption housing standards. In redeveloping Quartier Vauban, the City hoped to create an environmentally sustainable district that embodied social, cultural and economic goals and public input. Project Group Vauban, Freiburg City Council and Forum Vauban, a citizen’s association,¹⁸ worked together to implement the following main objectives in the plan for the neighborhood:

- “Balance of working and living areas,
- balance of social groups,
- use and reuse of ecological building material,
- solar energy,
- rainwater infiltration,
- public green space and neighborhood center,
- building diversity,
- pedestrian, cyclist and public transportation prioritization, and
- Incentives for car-free living.”¹⁹

Today, Vauban is a flourishing community of about 5,500 residents, providing 600 jobs as well as citizen-organized housing for students, low-income and single-parent households. The 640-acre neighborhood is connected to the City of Freiburg with multiple tram stops situated throughout the district. Cars are only permitted on arterial roads, with the remaining streets prioritizing pedestrians and cyclists; cars are effectively forbidden, as are parking spaces and garages, and 70% of Vauban families do not own a car.²⁰ The complete streets of Vauban also feature rain gardens, bioswales and other green

¹⁸ “Best Practice Case: Freiburg-Vauban (& Rieselfeld).”

https://www.tue.nl/fileadmin/content/onderzoek/Eindhoven_Energy_Institute_EEI/EnergyDays/Serie_1_2008_2010/2010_02_11/Frey_Part3-1.pdf

¹⁹ “An Introduction to Vauban District.” Vauban.de. 2013. <http://vauban.de/en/topics/history/276-an-introduction-to-vauban-district>.

²⁰ Rosenthal, Elisabeth. “In German Suburb, Life Goes On Without Cars.” New York Times, May 11, 2009. http://www.nytimes.com/2009/05/12/science/earth/12suburb.html?_r=1.

stormwater infrastructure. Green fingers and corridors connect the neighborhood and its inhabitants to the adjacent Dorfbach River, farmland and the Black Forest.

In addition to smart land use, transportation and planning features in the district, Vauban has impressive energy attributes as well. At least one hundred houses in Vauban are passive, and up to two hundred homes, situated in Vauban's "Solar Settlement", are plus-energy, meaning they produce more energy than they consume. Retrofitted military barracks, housing students and low-income families, feature solar thermal collectors and photovoltaic panels. It is the first community in the world to produce four times more energy than it consumes.²¹

The inhabitants of Vauban exhibit the feeling of community, participating in various social groups and initiatives. The neighborhood has a district center, with a grocery store, offices and other amenities, including a farmer's market, church and kindergarten.

The redevelopment of Quartier Vauban into an environmentally sustainable, inclusive and smart community was primarily implemented and paid for by the City of Freiburg, including other partners and investors. Although this sets Vauban apart from the Ford site, which will likely be purchased by a private developer, Vauban's characteristics are highly replicable in Saint Paul. The Ford site features high connectivity, with multiple bus lines to Saint Paul and Minneapolis adjacent to the site; there is also an opportunity for additional transit lines to be constructed within the new development. Furthermore, the Ford site is bordered by the Mississippi River, and conservation of the riparian ecosystem can be connected to additional green space and natural areas within the site with green fingers and corridors. Potential environmental remediation at the Ford site also presents an opportunity for the implementation of green stormwater infrastructure, including infiltrating soils, rain gardens, bioswales and trees. Although many buildings within Quartier Vauban were rehabilitated, many new energy efficient, affordable and energy-plus buildings were constructed. Dependent on zoning, the same can be done at the Ford site in Saint Paul.

²¹"The Solar Village Is The First Community In The World To Produce 4x More Energy Than It Uses." Collectively Conscious. January 29, 2015. <http://collectivelyconscious.net/articles/the-solar-village-is-the-first-community-in-the-world-to-produce-4x-more-energy-than-it-uses/>

Appendix IV
Additional Resources

- [*Citizen's Guide to LEED for Neighborhood Development*](#). NRDC et al., 2011.
- [*Local Government Guide to LEED for Neighborhood Development*](#). USGBC et al., 2011.
- [*Technical Guidance Manual for Sustainable Neighborhoods*](#). USGBC et al., 2012.
- *Twin Cities Mixed-income Housing Case Studies*. MZ Strategies, LLC. October 2015.
- *Minnesota's Tomorrow: Equity is the Superior Growth Model*. [*National Equity Atlas*](#). PolicyLink. 2014.