IRVING AND FAIRMOUNT BROWNFIELDS REVITALIZATION PLAN

DULUTH, MN 2016-2017
THE CHALLENGE

The rise of industry, its brownfield legacy, and eventual decline.
BROWNFIELDS + FLOODS

Compounding of economic and environmental factors.
THE OPPORTUNITY

Restoration of economic and community vigor based on health equity and climatic resilience.

RESTORE ECONOMIC VIBRANCY

DESIGN FOR HEALTH

BUILD CLIMATIC RESILIENCE

VIBRANCY  HEALTH  RESILIENCE
Final catalyst sites identified within patchwork of brownfield and superfund sites.
THE STRATEGY

A combination of Minnesota Brownfields Indicator analysis, EPA planning framework, and community engagement.

MINNESOTA BROWNFIELDS
HEALTH INDICATOR ANALYSIS

Mapping challenges and opportunities from a sustainability + public health perspective with a Minnesota Brownfields tool.

- ENVIRONMENTAL RESILIENCE
- HEALTH + SAFETY
- SOCIAL COHESION + ENGAGEMENT
- COMMUNITY INSTITUTIONS
- CONTEXT + CONNECTIVITY
- ECONOMIC STABILITY

EPA BROWNFIELDS
AREA WIDE PLANNING FRAMEWORK

Help communities confront local brownfield challenges and benefit underserved or economically disadvantaged communities.

- COMMUNITY PARTNERSHIPS
- BROWNFIELD SITE PRIORITIZATION
- CONDITIONS ANALYSIS + MARKET STUDY

BROWNFIELD AREA-WIDE PLAN
BROWNFIELD IMPLEMENTATION PLAN

COMMUNITY ENGAGEMENT
NEIGHBORHOOD ANALYSIS

Health Indicator strengths and opportunities.
A neighborhood and brownfield revitalization plan for Irving and Fairmount neighborhoods in Duluth, MN.
CATALYST SITE 1: HIGHWAY UNDERPASS

A multi-functional community space.

1 ENHANCED CONNECTION
Improved connection underneath the I-35W bridge provides safer, enlivened pedestrian experience as well as additional community space for programming.

2 VISUAL IMPROVEMENTS
Relatively inexpensive treatments to existing conditions such as paint and lighting provide a safer and enhanced experience.

3 STREETSCAPE
New paving on the roadway and modular paving in pedestrian main provide areas for community programming.

4 PROGRAMMING
Novel types of open spaces such as underpass parks provide new opportunities for community events and programming.
CATALYST SITE 2: KEENE CREEK GATEWAY

A redevelopment and riparian corridor.

1 COMMERCIAL DEVELOPMENT
New commercial development will provide opportunity for neighborhood services and support emerging recreational opportunities in the St. Louis River Corridor, and establish a gateway for both Irving and Fairmount.

2 SENIOR HOUSING
New senior housing will help long time residents stay in the neighborhood and provide jobs.

3 COMMUNITY SPACE
Potential for public/private community space in multifamily building along Cross City Trail.

4 LIGHTING
Potential for enhanced solar-based street lighting.

5 REDEVELOPMENT
Redevelopment of potential brownfield will allow for more housing and productive green spaces while cleaning brightened areas.
CATALYST SITE 3: GRAND AVENUE REDEVELOPMENT

Redevelopment and community green belt.

1 NEW HOUSING
Higher density residential with mix of affordability near transit along Grand Avenue.

2 OPEN SPACE
New open access areas that serve multiple purposes (e.g. community gardens, green connections to trails, etc) and present opportunity for phytoremediation.

3 REDEVELOPMENT
Redevelopment of potential brownfield will allow for more housing and productive green spaces while cleaning blighted areas.

4 NEW HOUSING
Medium density housing provides transition to adjacent low density housing stock and allows for types of housing not readily available in study area.

5 CCT
Connections to Cross City Trail.
CATALYST SITE 4: CROSS CITY CONNECTION

Redevelopment and connection to Cross City trail network.

1. NEW HOUSING
   - Higher density residential with mix of affordability.

2. GREEN SPACE
   - Vegetated green space that mitigates runoff and maintains residential buffers, as well as provides extended habitat.

3. REDEVELOPMENT
   - Redevelopment of potential brownfield will allow for more housing and productive green spaces while cleaning blighted areas.

4. NEW HOUSING
   - Medium density housing provides transition to adjacent low density housing stock and allows for types of housing not readily available to area.

5. CCT
   - Connections to Cross City Trail.
A NETWORK OF SITES

Brownfields as catalysts for redevelopment.

1 SOLAR ARRAY
Solar array provides neighborhood power for street lighting and community institutions.

2 COMMUNITY GARDEN
Community garden provides fresh food to residents in the area.

3 PHYTOREMEDIATION
Phases of phytoremediation gradually clean up vacant parcels while providing lush vegetation in the neighborhood.

4 GREEN BLVD
Restored and enhanced tree canopy and potential stormwater treatment along main boulevards and street arteries.

5 NATIVE PRAIRIE
Native plant panels installed in vacant parcels provides pollinator and wildlife habitat, as well as flowers and visual displays in the neighborhood.
IMPLEMENTATION PLAN
Path for moving forward

Irving and Fairmount Brownfields Revitalization Plan
MASTER IMPLEMENTATION MATRIX (DRAFT) - September 27, 2017

<table>
<thead>
<tr>
<th>Map Key</th>
<th>Neighborhood</th>
<th>Action Item</th>
<th>Type</th>
<th>Implementation Strategy</th>
<th>Project Partners</th>
<th>Possible Funding Sources</th>
<th>Likely Project Challenges/Complexities</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Irving</td>
<td>Redevelop catalyst site K3 - Red-Ruth business park</td>
<td>Brownfield Development</td>
<td>SEE DETAILED DEVELOPMENT RECOMMENDATIONS</td>
<td>City: PUB, ED Others: property owners</td>
<td>Developer Equity</td>
<td>- Gap Financing</td>
</tr>
<tr>
<td>8</td>
<td>Irving</td>
<td>Redevelop property at northeast corner of Grand Ave and Raleigh St</td>
<td>Brownfield Development</td>
<td>As Grand Ave evolves over time into a more visible mixed-use corridor, properties further north of the gateway area should be considered for more intensive development that could include a mixture of housing and/or commercial uses that are connected to the adjacent neighborhoods</td>
<td>City: PUB, ED Others: property owners</td>
<td>Developer Equity</td>
<td>- Gap Financing</td>
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<tr>
<td>9</td>
<td>Irving</td>
<td>Develop vacant properties along east side of Grand Avenue at Red-Ruth St and 67th Ave W</td>
<td>Brownfield Development</td>
<td>As Grand Ave evolves over time into a more visible mixed-use corridor, properties further south of the gateway area should be considered for more intensive development that could include a mixture of housing and/or commercial uses that are connected to the adjacent neighborhoods</td>
<td>City: PUB, ED Others: property owners</td>
<td>Developer Equity</td>
<td>- Gap Financing</td>
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<td>10</td>
<td>Irving</td>
<td>Promote Industrial development south of BNSF tracks and east of Stryker Bay</td>
<td>Development</td>
<td>There are several vacant areas in the study area that are adjacent to the BNSF/MUP superfund site that would be appropriate for industrial development in the short- and midterm. These areas should be explored for uses that could support employment without significant infrastructure investments, such as new water lines, new sanitary sewer mains, and other new utilities. These areas may be appropriate to accommodate the expansion of nearby existing operations or even the attraction of new users given their rail, highway, and waterway accessibility</td>
<td>City: ED Others: property owners</td>
<td>Developer Equity</td>
<td>- Gap Financing</td>
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<tr>
<td>11</td>
<td>Irving</td>
<td>Redevelop the lands underneath MN Power's transmission lines</td>
<td>Development</td>
<td>When MN Power fully decommissions the high-tension power lines that run through the study area, redevelop the vacated easements into more productive land uses</td>
<td>City: PUB, ED Others: MN Power</td>
<td>Developer Equity</td>
<td>- Gap Financing</td>
</tr>
</tbody>
</table>

- Gap Financing
- Scope of remediation
- Potential ownership issues/site acquisition
- Identify and obtain developer partner
- Site design
- Gap Financing
- Phasing - larger sites may limit pool of developers
- Gap Financing
- Owner's property owners
- Gap Financing
- Owner's property owners
- Gap Financing
IMPLEMENTATION STRATEGIES FOR A SUSTAINABLE DULUTH

HOUSING

ECONOMIC DEVELOPMENT

ENERGY & CONSERVATION

TRANSPORTATION

OPEN SPACE

PLANNING INITIATIVES THAT FEED INTO THE 5 FOCUS AREAS OF THE COMPREHENSIVE PLAN UPDATE

IRVING AND FAIRMOUNT BROWNFIELDS REVITALIZATION PLAN (IFBRP)

BROWNFIELD HEALTH INDICATOR TOOL

SMART GROWTH PRINCIPLES

<table>
<thead>
<tr>
<th>Housing</th>
<th>Transportation</th>
<th>Economic Development</th>
<th>Open Space</th>
<th>Energy &amp; Conservation</th>
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<tbody>
<tr>
<td>Incentivize and fund a range of diverse housing types</td>
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<td>Integrate multi-modal approaches to transportation investments</td>
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<td>Prioritize and redevelop underutilized parcels</td>
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<td>Protect and enhance open space and greenway connection</td>
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<tr>
<td>Encourage employment growth near transit connections</td>
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