The ultimate goal of the Ford Site Sustainable Redevelopment Report is to establish performance thresholds for site redevelopment... inspiring policy makers and developers to make this site a national model for sustainable brown-field redevelopment.

Sustainable redevelopment of the 135-acre Ford site is a high priority for the City, regional and state agencies, the Ford Site Planning citizen task force, and much of the public.

A redeveloped Ford site can demonstrate that residents, employers, workers, and visitors can enjoy all the amenities and comforts of modern living while using much less energy, producing clean energy on site, reducing waste, reducing and treating storm-water runoff, restoring a natural ecosystem, and providing an infrastructure system that reduces vehicle trips and encourages walking, biking, and transit.

The report identifies key components of sustainable redevelopment for the Ford site, outlining goals, strategies and performance thresholds for each.

The District Sustainability Standards have eleven components:

1.0 Building Energy
2.0 Transportation & Public Realm Network
3.0 Materials
4.0 Water & Wastewater
5.0 Solid Waste
6.0 Stormwater & Groundwater
7.0 Soil
8.0 Vegetation & Habitat
9.0 Recreation & Public Space
10.0 Night Sky Radiation
11.0 Urban Heat Island

1.0 Building Energy

Sustainability Goals

- To maximize the use of renewable energy for buildings and infrastructure.
- To reduce operating energy use in all buildings and infrastructure.
- To maximize energy self-sufficiency.

Minimum Performance Thresholds

1.1 Meet energy use and greenhouse gas (GHG) emission targets* specified in Minnesota 2030 program to be required for State buildings through Buildings, Benchmarks & Beyond (B3) Guidelines and consistent with Saint Paul’s Green Building Policy:

- 60% reduction by 2010
- 70% reduction by 2015
- 80% reduction by 2020
- 90% reduction by 2025
- 100% reduction by 2030

Ultimate Condition

⇒ Zero net energy and zero greenhouse gas emissions*.

⇒ Greenhouse gas (GHG) emissions can be calculated based on operating energy, as well as on many other contributing factors measured by the Minnesota Building Carbon Calculator, including water, wastewater, assets, embedded in materials, transportation, vegetation, and soil. Energy use can be measured per square foot, per person, per hour of operation, per product output relative to equivalent industrial processes, or a combination of these.

2.0 Transportation & Public Realm Network

Sustainability Goals

- To create a transportation infrastructure that balances modal choice between walking, biking, and vehicular movement.
- To reduce average vehicle miles driven by persons living, working and visiting the site.
- To increase average walking and biking miles per year for persons living or working on the site.
- To reduce energy use and Green House Gas (GHG) emissions related to high vehicle miles driven (VMD).
- To reduce adverse human health affects (such as asthma) related to air pollution.
- To maximize the diverse human benefits (such as childhood obesity reduction and lower family transportation costs) of safe and pleasurable pedestrian and multi-modal access to and from (on-site & off-site) transit stops, daily services, institutions, parks and public spaces.

Minimum Performance Thresholds

2.1 Provide mix of office, industrial, residential, and commercial uses on site that complement the existing mix of uses and services in the area.

2.2 Minimum residential density (du/acre) greater than 20 du/acre (Density to be calculated using LEED-ND computational method outlined NPD Credit 2).

2.3 Minimum Non-Residential floor area ratio (FAR) greater than 1.50 (Non-Res. FAR to be calculated using LEED-ND computational method outlined NPD Credit 2).

2.4 Internal street connectivity (intersections/ square mile according to LEED-ND definition) equal to or greater than the highest connectivity found in adjacent neighborhoods, computed for adjoining area of same size and shape as site.


2.6 Zero dead ends and zero cul-de-sacs except to serve the rear of buildings.

2.7 95% of streets lined on both sides with sidewalks minimum 54” wide. (Per A.D.A. requirements)

2.8 Provide designated bike lanes on streets at least every ½ mile.

2.9 50% of all residential and non-residential building entries within ¼ mile of vehicle sharing site or transit services.

Ultimate Condition

⇒ Decrease average vehicle miles driven to 4,000 or less per driving resident per year, a 50% reduction in carbon per mile traveled.

3.0 Materials

Sustainability Goal

⇒ To reduce embodied energy use, GHG emissions and other environmental impacts associated with building, infrastructure, and landscape materials.

Minimum Performance Threshold

3.1 Life-cycle performance of all buildings at least 10% better than the average building using Athena EcoCalculator in six of the eight output areas, or comply with State of Minnesota B3 Guidelines, Materials and Waste, section M.1 – Life Cycle Assessment of Building Assemblies.


3.3 At least 30 percent of the total value of materials used in site infrastructure are composed of pre- and post-consumer content.

Ultimate Condition

⇒ Life-cycle performance of all buildings at least 30% better than the average building using Athena EcoCalculator in seven of the eight output areas.


⇒ At least 50 percent of the total value of materials used in site infrastructure are composed of pre- and post-consumer content.

4.0 Water & Wastewater

Sustainability Goals

- To reduce potable water consumption in all buildings and landscapes.
- To reduce wastewater leaving the site to treatment plants from all buildings and landscapes by increasing onsite wastewater reuse.

Minimum Performance Thresholds


4.2 Predicted water use for landscaping must be at least 50% less than a traditionally irrigated site (consistent with Saint Paul Green Building Policy).

4.3 Fifty percent (50%) less black and/or gray water leaving the site than an average or typical development, during design phase and long-term operations.

Ultimate Condition

⇒ No more than five percent (5%) of the total daily water requirement/person imported to site.

⇒ No gray water leaving the site, and ten percent (10%) or less black water leaving the site during design phase and long-term operations.


As published May 2, 2011 in the Ford Site Sustainable Redevelopment Report: Summary of Sustainability Goals for the Ford Site
Ultimate Condition
⇒ Zero construction, residential, commercial and industry solid waste leaving the site.

6.0 Stormwater & Groundwater

Sustainability Goals
• To maximize surface and ground water pollution.
• To minimize negative impacts of development on the hydrological cycle by treating stormwater close to where it falls and recharging groundwater through infiltration as local soils and subsurface conditions allow.
• To not exceed natural erosion and sedimentation levels in streams and lakes.
• To protect plant, invertebrate, and animal life in lakes and streams.
• To utilize stormwater runoff as a resource rather than as a waste product.
• To pre-treat all water flowing to Hidden Falls and maintain a more constant flow volume.

Minimum Performance Thresholds
6.1 Comply with current local regulations for stormwater runoff volume and rate control (City of St. Paul, Minnesota Pollution Control Agency (MPCA), Capitol Region Watershed District (CRWD), Saint Paul River Corridor Overlay District).
6.2 Reduce runoff volume by at least 90% on an annual basis by infiltration (50%) and evaporation or re-use (40%) or provide a corresponding water quality benefit.
6.3 Reduce pollutants for which the water is impacted to 10% less than levels identified in Total Maximum Daily Load (TMDL) study for that portion of the Mississippi River.
6.4 Maintain minimum cover (e.g. >3’) above street bed and follow Minnesota Pollution Control Agency (MPCA), Capitol Region Watershed District (CRWD), and Saint Paul River Corridor Overlay District guidelines on infiltrating.
6.5 Produce and implement a Stormwater Pollution Protection Plan per MPCA guidelines for use pre, during and post construction.

Ultimate Condition
⇒ Zero discharge of untreated stormwater from site.
⇒ Re-direct low flows on adjacent properties away from untreated storm sewers and onto the Ford site for treatment in site’s stormwater treatment areas.

7.0 Soil

Sustainability Goals
• To protect and restore soil structure, stability, and biological health to optimize plant health and species richness and optimize water infiltration and filtration.
• To reduce soil loss and minimize disturbance of existing quality soil.
• To maximize on-site reuse of existing soils.
• To address less impacted soil conditions on site.

Minimum Performance Thresholds
7.1 Meet MPCA soil cleanup criteria with land use restrictions.
7.2 Meet State of Minnesota B3 Guidelines for soil management:
• Organic matter >1.5% by dry weight
• Bulk density <1.5 mg/mL
• Aerobic porosity (% large pore volume) >2%
• Infiltration rate >0.25 in/hr site wide, >1 in/hr in stormwater treatment areas
• Soil pH 6.8-5.5
• Cation exchange capacity > 5 meg/100g
• Potassium > 124 lbs/acre
• Phosphorus > than 44 lbs/acre
• Mycorrhizae — Minimum 2 species in soil that are naturally found in Minnesota
• Soluble sulfur content < 60 ppm
• Stormwater Pollution Prevention Plan (SWPPP) - create and implement
• Hydric and mesic soils profile >10% of open space
• Organic horizon > 4 inches throughout

Ultimate Condition
⇒ Meet thresholds 7.1 & 7.2, and in addition;
⇒ Meet Minnesota Pollution Control Agency (MPCA) soil cleanup criteria with no land use restrictions.
⇒ Provide on-site composting location and provide composted material for on-site public and private gardening, landscaping and soil restoration.
⇒ Hydric and mesic soils—profile > 20% of proposed open space.
⇒ Organic horizon > 6 inches.
⇒ Minimum 4 species of mycorrhizal in soil that are naturally found in Minnesota.

8.0 Vegetation & Habitat

Sustainability Goals
• To maximize biodiversity of the site and provide maximum possible contribution to local landscape ecology.
• To reduce destruction and removal of existing vegetation.
• To increase vegetation on site with new plantings.
• To provide wildlife habitat.
• To maximize ecological services on site and for the surrounding area.

Minimum Performance Thresholds
8.1 Comply with applicable codes, regulations and standards, including B3 guidelines, St. Paul zoning and land use regulations, and City of St. Paul River Corridor Overlay District.
8.2 Greater than fifty percent (50%) aerial tree cover over all impervious surfaces on site except roofs.
8.3 Greater than fifty percent (50%) of buildings include vegetated roofs.
8.4 Greater than twenty percent (20%) of site open space covered with vegetation.
8.5 Greater than seventy five percent (75%) native species in new landscaping, including keystone species (at minimum) Burr Oak, Hickory/Walnut & Big Blue Stem.
8.6 Minimum plant species diversity greater than eighty percent (80%) species of native vascular flora – herbaceous perennials. No invasive species on the site. Use ten percent (10%) or less species of native Deciduous Trees and > 3 species of native Coniferous Trees, but not greater than ten percent (10%) of any one tree genus, so as to avoid catastrophic tree loss e.g. Dutch Elm Disease, Emerald Ash Borer.
8.7 Do not disturb habitat or natural resources determined significant by Minnesota DNR Natural Heritage Program or by local, state or federal government; maintain or install appropriate buffer widths around significant habitats that comprise part of a development.

Ultimate Condition
⇒ 70% aerial tree cover over non-roof impervious surfaces, and 50% of buildings include vegetated roofs.
⇒ 100% native tree, shrub, perennial and vine plantings compositions.
⇒ A species-rich, resilient, urban forest with ≥ 50% of tree population exceeding 20 inch Diameter at Breast Height (DBH) and 20% exceeding 30 inch DBH.
⇒ Diverse ecosystem that supports at least the presence of key species as follows:
  Amphibians (3 species); interior forest birds (10 species); interior grassland birds (3 species); bats (2 species); reptile (2 species).
⇒ Sustainable Redevelopment Report at the link below to see complete information about the categories, strategies for sustainable design, green finding resources, and next steps to achieve this ambitious vision.