

# SCIENCE IN ACTION

Kingsbury Bay-Grassy Point Habitat Restoration: A Health Impact Assessment

## **About HIAs**

A health impact assessment (HIA) is a systematic process that uses data, analytical methods, and input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population. The HIA examines who will be impacted and provides recommendations for monitoring and managing those effects.

## About the Kingsbury Bay-Grassy Point HIA

This U.S. Environmental Protection Agency (EPA)-led HIA was performed on a Great Lakes Area of Concern (AOC) habitat restoration project being implemented by the Minnesota Department of Natural Resources (MNDNR) at two sites in the St. Louis River AOC – Kingsbury Bay and Grassy Point. The purpose of this HIA was to provide information about the potential public health impacts of the proposed MNDNR habitat restoration work itself and the subsequent park improvement activities to be carried out at these sites by the City of Duluth and to provide recommendations aimed at managing the potential public health impacts of the project.

#### **The HIA Process**

This HIA used the systematic six step process: screening, scoping, assessment, recommendations, reporting, and monitoring and evaluation. A mixed-method approach was used in this HIA, including analysis of pre-existing and publicly-available data, mapping and spatial analyses, literature review, modeling and ecosystem services mapping, stakeholder engagement and participatory mapping, statistical and graphical analysis, and measurable (quantitative) and relative (qualitative) characterization of impacts.

Based on input from stakeholders, including community members, scientific experts, and decision-makers, the HIA Project Team identified pathways through which the proposed project could potentially impact health: Water Habitat and Quality; Equipment Operation, Traffic, and Transport; Air Quality; Noise and Light Pollution; Crime and Personal Safety; Recreation, Aesthetics, and Engagement with Nature; and Social and Cultural.



St. Louis River

**Main HIA Findings and Recommendations** The HIA demonstrated that the proposed habitat restoration and park improvements work could have both positive and negative impacts on health through a number of health determinants (i.e., factors known to impact human health directly or indirectly; Figure 1).

The majority of the potential negative health impacts associated with the project are expected to be of short duration; these include air quality, noise, and traffic impacts from equipment operation, traffic, and transport, as well as reduced access or impaired user experiences at the sites or nearby recreational sites during the construction phases of the project.

In the long-term, there is the potential for increased traffic as a result of this work and other park improvements in the area, which could increase exposure to traffic-related accidents and air quality impacts; however, the habitat restoration and park improvements projects are expected to have a net positive impact on public health and community wellbeing overall through improved water quality and aquatic habitat, reductions in crime as a result of the beautification and maintenance of the created green spaces, increased opportunity for recreation and physical activity, and space for engagement with nature, social interaction, spiritual reflection, and access to cultural resources (such as wild rice).

Recommendations for enhancing the potential positive health impacts and reducing the potential negative health impacts of the Kingsbury Bay-Grassy Point Habitat Restoration Project were provided for consideration by MNDNR and the City of Duluth.



1

#### The Impact of the HIA

This HIA brought together the community, stakeholders, and decision-makers at the local, state, regional, and federal levels to promote health, equity, and sustainability.

Water Habitat and Quality. Short-term: (-) during habitat restoration construction, disturbance of plant and animal life, including fish populations; other potential impacts during construction (sediment disturbance, leaks/spills, and erosion/ runoff) minimized, as access to sites and surrounding waters will be restricted; no impact to water quality expected during park construction due to short timeframe. Long-term: (+) habitat restoration will decrease contaminant sediment concentrations and bioavailability at Grassy Point and improve water, sediment, and habitat guality; create and restore aquatic habitat, including for wild rice; and remove invasive species; park amenities create opportunities to access aquatic habitat and if well-maintained, benefit health; fish consumption and swimming advisories limit exposure to potential pollutants; placement of the proposed stormwater garden could improve water quality

Social and Cultural. <u>Short-term</u>: (—) lack of access or impaired social, cultural, and spiritual experiences at these sites during construction; (+) community input and communication of project plans and activities important. <u>Long-term</u>: (+) creation of space for social interaction and recreation, trails connecting individuals to community resources and the parks to existing trail systems, signage of park amenities, and enhanced safety improves social cohesion and social capital; provides opportunity for wild rice generation (a culturally important and highly nutritious food source) and spiritual reflection; also provides opportunity for signage explaining cultural resources (including wild rice) and area history

## **Recreation, Aesthetics, and Engagement with**

Nature. <u>Short-term</u>: (—) lack of access or impaired experiences at Grassy Point, Indian Point Campground, and Western Waterfront Trail during construction. <u>Long-term</u>: (+) habitat restoration provides opportunity for recreation; park amenities facilitate recreation (e.g., fishing, swimming, canoeing/kayaking, bird watching, picnicking, walking/hiking, biking) and physical activity; may also provide opportunity for increased fish consumption; creation of aquatic habitat and beautified natural areas improves aesthetics and provides space for engagement with nature, including bird watching; park improvements beautify the area; maintenance of park environment and infrastructure essential to continued benefits

# Where to Learn More

The Kingsbury Bay-Grassy Point HIA Report and Summary Report are located at <u>https://www.epa.gov/health</u>research/epa-health-impact-assessment-case-studies.

## Equipment Operation, Traffic, and Transport.

**Short-term:** (**—**) increases at/near project sites and along local roadways increases the risk of accidents and related injury, deteriorated road conditions, stress due to changes in travel conditions, and potential exposure to particulates and contaminants during equipment operation and material transport. **Long-term:** (**—**) possible increases in vehicle traffic after parks are open to visitors increases the risk of accidents and related injury, deteriorated road conditions, and stress due to changes in travel conditions

Air Quality. Short-term: (-) construction equipment and truck/vehicle traffic increases the risk of exposure to air pollutants during construction. Long-term: (+) vegetative features created have the ability to filter air pollutants and particulates and reduce localized surface and air temperatures; **Potential Health Impacts** (+) development of these sites as parks Potential to affect the risk of eliminates the potential for more severe air waterborne, respiratory, and pollution that would accompany industrial heat-related illness; skin and development at the sites were they not eye ailments; hearing/ auditory impairment; chronic parks open to visitors (possible given the disease; injury and improvements and other park investment premature death; stress and efforts planned in the area) increases the risk stress-related conditions; of exposure to air pollutants nutrition; and overall health

## Noise and Light Pollution. Short-term:

(---) increased noise from construction equipment and truck/vehicle traffic at/near project sites and along roadways during construction; if nighttime dredging needed, lighting impacts to individuals and animals at/near project sites and along roadways possible. Long-term: (----) noise from increased park visitor traffic; light pollution effects possible for properties neighboring Kingsbury Bay if lighting used in parking area

**Crime and Personal Safety.** <u>Short-term</u>: (\_\_\_) increased truck and vehicle traffic impacts pedestrian and bicycle safety. <u>Long-term</u>: (+) beautified natural areas and maintenance of park environment and infrastructure deters crime; safe access to parks important to realizing their full benefits; improvements in personal safety expected at sites with infrastructure improvements and deterred crime; (\_\_\_) increased vehicle traffic impacts pedestrian and bicycle safety

Figure 1. Potential public health impacts of habitation restoration and subsequent park improvements.

and well-being

.CONTACT: Joel Hoffman, <u>hoffman,joel@epa.gov</u> U.S. EPA Office of Research and Development (218) 529-5000



2