Above the Falls
Policy Review and Implementation Study
(ATF-PRIS)

REPORT 4

Topical Research
TABLE OF CONTENTS

1. Introduction

2. Land
   Topography
   Soil Conditions
   Soil Contamination

3. Freight Transportation
   Barge
   Railroad
   Truck

4. Businesses
   Business Survey
   Employment

5. Industrial Policy
   Industrial Land Inventory
   Green and Sustainable Industry
   Industrial Jobs

6. Transit Service

7. Subareas
   Policy context
   Locational characteristics for Land Use sectors (w/ maps)

8. Utilities

9. Comparison Areas/Case Studies

10. Park Impacts

11. Community Impacts

12. Redevelopment and the River

13. Implementation
Chapter 1. Introduction

ABOVE THE FALLS POLICY REVIEW AND IMPLEMENTATION STUDY

The Above the Falls Policy Review and Implementation Study responds to the direction of the Minneapolis City Council, and these dual impulses. It will address questions about the redevelopment vision of the ATF Plan through an evaluation of its policy basis. It will inform a City Council decision process that will result in modifications to, or reaffirmation of, the land use and development guidance of the ATF Plan. And it will undertake implementation activities in furtherance of the plan.

The Study will have two or three phases, with Phase II being undertaken only if directed by the Minneapolis City Council.

- **Phase I: Analysis.** Review and augment the analytical basis for evaluating the land use and development recommendations of the ATF Plan. Product will include a recommendation concerning plan modification.

- **Phase II: Plan Revision.** If so directed after the completion of Phase I, a plan revision will be undertaken by staff to modify the plan’s land use and development guidance.

- **Phase III: Implementation Actions.** Following affirmation or modification of the ATF Plan, staff will undertake actions to advance plan implementation.

The project is being managed by city staff with broad public and stakeholder engagement. Key stakeholders include the Minneapolis Park and Recreation Board (MPRB), Friends of the Mississippi River, Above the Falls Citizen Advisory Committee (AFCAC), the emerging Mississippi Riverfront Corporation (MRC), neighborhood and business organizations, and property owners. A cross-functional City-MPRB collaboration is serving as a technical advisory committee to the project. Initial presentations to stakeholders began in December 2009, and January 2010.

Note that, while there are strongly divergent views on the guidance of the ATF Plan, the outcome of this study is not pre-determined. It may result in modifications to the plan’s future land use map or other policy guidance, or it may not. In either case, it will contemplate implementation strategies that may provide more certainty to property owners about the timing of redevelopment.

SCAN AND INFORMATION DEVELOPMENT

This report, subtitled “Scan and Information Development,” is the first to be produced as part of the ATF Policy Review and Implementation Study. Its purpose is to assess the adequacy of existing information and analysis to support a decision concerning modification of the ATF Plan. To that end, it presents three types of information.

First, it sharpens our understanding of the geographic context through the mapping of property-based information.

Second, it reviews existing plans and analysis that bear on the two key questions:

- The policy merits of the proposed land use transition from industrial to residential
- The feasibility of attracting and fostering the proposed redevelopment in a realistic future market given site assembly and infrastructure challenges

Third, it offers several instructive case studies from comparable cities and regions.
The report concludes with recommendations concerning whether further information should be developed in order to support a well-informed decision about ATF Plan modification, and what the nature of that information would be.
Chapter 2. Land

TOPOGRAPHY

The topography of the upper riverfront is varied. Some features that stand out are the following, as indicated on the accompanying maps.

- **Bluff conditions.** The east bank has bluffs of 30’ or more at water’s edge for the entire upper riverfront, with the exception of the stretch from Plymouth Avenue to the BN rail bridge, which encompasses the Grain Belt complex, and the Graco and Scherer Brothers sites. The west side of the river shows bluffs of 20’ to 30’ from Plymouth Avenue to Lowry Avenue. Bluff conditions pose challenges for access and viewsheds to the river.

- **Flood plains.** Where a bluff is absent, the “soft edge” of the riverfront can accommodate changes in water levels and serve as flood plains for the river. Flood plains are not good sites for new development. They can, however, be attractively accommodated within parkland and open space. The Scherer site, which is still in an active flood plain, has continued to have flooding issues—a reality being addressed by park planners looking at the design of the riverfront park.

- **Slopes.** Most of the land on the east side of the riverfront is flat. Where there are bluffs on the east bank of the river, the ground is typically fairly flat between the top of the bluff to Marshall Street. On the west side of the river, the land is fairly flat from Plymouth Avenue to 26th Avenue. North of 26th Avenue the grades become progressively steeper up to around 36th Avenue, where the grades start to diminish up to the North Mississippi Regional Park. Steep grades pose challenges for development, adding to their cost and complexity—particularly for industrial development where large single-level buildings are the prototypical development type. The sloped ground can also add interest for office and residential development types, because they allow for good views of the waterfront and opposite river bank. The flatter grades, with closer river access, explain the historic development of industrial facilities on the west side of the river, and the southern portion of the east bank, because it was well suited to saw mills when the timber of the state was first being harvested at the beginning of the 20th Century.

Development guidance for subareas may involve a more detailed look at topographical conditions.
Above the Falls Contour Map

Legend
- 10 Foot Elevation Contours
- Industrial District
- Above the Falls Study Area
- Railroad
- Roads
- Mississippi River

Map created July 2011 by CFED staff with City data
SOIL CONDITIONS AND HISTORIC WETLANDS

New development requires stable soils—or, if absent, investment in foundation systems that compensate for the instability—which increase development costs. The upper riverfront has a variety of soil conditions due to a) its surface water features, including historic wetlands and the Mississippi River itself, b) widely varying depth to bedrock, and c) and its historic development patterns.

Soil conditions range from stable sand and aggregate at one end of the spectrum, to clays and quicksands at the other. These soils have been mapped to depths of 10 to 20 feet under City streets in historical records that were created when the sewer infrastructure was first constructed in the area. While these documents do not cover every property in the area, they nevertheless provide an excellent overview of areas likely to be structurally adequate vs inadequate in the upper riverfront.

The following are findings related to soil conditions and historic wetlands.

- **Wetlands.** Historically, some limited wet areas existed on both banks. The area around Xcel’s Riverside Plant on the east bank and the central industrial area on the west bank have been filled and graded in years past, so no longer are considered wetlands or flood areas. Many of the largest wet areas inland have been transformed over time into large rail yards for the major rail lines serving this area. See below for a map of historic wetlands.

- **Streams.** Shingle Creek flows into the Mississippi River at a location to the north of the Camden Bridge. Historically, a small stream flowed into the Mississippi River near the intersection of Marshall and Lowry. This has been converted to a large utilitarian outflow point for stormwater at present, but there may be a way to better accommodate this function in the design of the area. The presence of the new Mississippi Watershed Management Organization at this location suggests a possible interpretive element to this particular feature.

- **Depth to Bedrock.** The current path of the Mississippi River is different from its historic path, which carved out a deep valley in the bedrock. This underground valley crosses from the east side of the river to the west side of the river north of downtown Minneapolis, before traversing the Heritage Park development, Bassett Creek Valley, and the City’s Chain of Lakes in South Minneapolis. This is an important feature today because the soils that have filled in this underground valley are typically clays and other wetland soils that do not support development without additional structural investment. See below for a map of depth to bedrock. Conversely, we’ve learned that there are areas on the west side of the river where the limestone bedrock comes essentially to the surface—which is great from a structural perspective, but may impact development where an underground level is desirable.

- **Soil types.** A look at the soils along this stretch reveals some of its history – elements like ash and sawdust reveal industrial byproducts that were used as fill in years past. Apart from contamination (discussed below) and some questionable areas of fill, soils on the west side of the river are relatively stable and suitable for development—with the possible exception of area south of West Broadway. The east bank, particularly the middle section, includes more problematic soils. This can cause problems and add costs related to water infiltration, as has been the case in the Grain Belt Office Building. And it can add structural costs, as the Mississippi Watershed Management Organization has experienced in the development of its new headquarters building.

In general, as development plans move forward, a more detailed site analysis of soil conditions will be helpful to avoid a project coming to a halt when this information is belatedly discovered.
Map 9: Aggregation of Historically Mapped Water Features, Springs, Wet Soils, and Depressional Areas
Above the Falls Subareas: Soil Conditions

Washington Avenue North, 2nd Street North, & Pacific Avenue North
1 No data
2 Plots unknown
   Sand, gravel, clay, black loam
3 Plots unknown
   Sand
4 No data
5 Plots unknown
   Sand, ash, clay fill, sand, fill;
   black dirt, sandy clay
6 Plots unknown
   Sand, clay, gravel, black dirt
7 Plots unknown
   Black dirt and sand
8 Plots unknown
   Sand, gravel, clay, and stones;
   Clay & boulders, gravel & stone;
   Clay, limestone, sandstone
9 Plots unknown
   Gravel, sand, boulders
10 Plots unknown
   Sand, gravel, stone, & boulders;
   red clay, loam

Marshall Street Northeast
11 Plat S-M-43, S-M-44, & S-M-45
   Sand, gravel, clay
12 Plats S-M-40, S-M-41, & S-M-42
   Sand, gravel, clay, quicksand,
   black dirt
13 Plats S-M-39 & S-M-40
   Gravel, clay, quicksand, water
   sand, black dirt
14 Plats S-M-38 & S-M-38
   Sand and gravel, clay, water
   quicksand
15 Plats S-M-36, S-M-37, & S-M-38
16 Plat S-M-36
   Sandy loam, sand, gravel, clay,
   quicksand, and water
17 Plat S-M-35
   Sawdust, sand, black loam,
   white sand and blue clay
18 Plats S-M-34 & S-M-35
   Sawdust, conglomerate, limestone
   sand, and sandstone

Legend

- Soil Conditions

Map created 2011 by CPED staff
with Mpls, MetroGIS and MnDOT data
SOIL CONTAMINATION

Older urban industrial sites are likely to have a range of contaminants, as historically there were few enforced standards for how to handle the disposal of toxic substances. As a result, site cleanup is a consideration in any analysis of the feasibility of redevelopment.

The Residual Land Value analysis done by BAE as part of Report 3 looked at developer costs and returns given clean, buildable land. Site cleanup represents an additional cost that would need to be borne by the developer or by the public sector. Some research was done to estimate the cost of brownfield cleanup. Having said that, the extent of brownfield cleanup varies by property, and the extent of cleanup needed is inherently variable and unpredictable. Even after site specific testing has occurred, surprises are possible, which can dramatically increase costs.

One source of information is the grant records of the locally available brownfield cleanup grant programs through Hennepin County and Minnesota DEED. Around 80 projects were funded in Minneapolis between 2007 and 2009, and these provide insights into the anticipated scope and cost of comparable projects. Some observations from these data include:

- Larger projects typically had two phases of funding—one for site assessment and one for remediation. The first phase informs the scope and cost of the second.
- Assessment grants tended to be smaller and more uniform in size. They average around $37,000 each, ranging from $10,000 to $100,000 per project (though the projects at the top end of the range appear to be outliers). There is not much correlation to the size of the site in terms of acres.
- Remediation grants tend to be larger and more variable, which is logical due to the wide variety of conditions being addressed - from lead paint removal in a structure to large scale removal of contaminated soil. The average cost per acre was around $386,000, ranging widely from $13,000 to $2 million per acre.
- There is typically a higher cost for cleaning up to residential redevelopment standards as opposed to industrial ones, although this may not be evident from these data. Per acre cleanup costs did not vary much by development type. However, it may be noted that a majority of the lowest cost/acre projects were intended for industrial use, and many of the highest per acre cost ones (seven of the top ten) were intended for residential.

These findings were compared to other data sources. Site cleanup in the City’s North Washington Jobs Park averaged over $300,000/acre. Environmental cleanup in the Menomonee River Valley (a similar industrial area in Wisconsin) averaged around $300,000 per acre. Wisconsin’s state brownfields office uses a more conservative rule of thumb of $100,000/acre, but notes that that is an average that includes areas with much less urban density and contamination compared to Minneapolis.

This analysis suggests that the redevelopment of existing industrial land may require an average of $300,000 per acre or more in cleanup costs. Site preparation costs of that magnitude are difficult to add to a development pro forma. And if borne by local government, may offset the positive fiscal impacts of development for a decade or more.

Currently, new developments on brownfield sites pursue funding at the County and State level. So they are not directly covered by the developer or City government. Even in this scenario, environmental cleanup adds administrative costs and delays the timing of new development. Moreover, there is no guarantee that brownfields cleanup programs will be funded in perpetuity.

This information can be used at an aggregated level to estimate the costs of brownfield cleanup. With a more focused analysis, it is possible comparable sites in the database could provide a more refined sense of the magnitude of the estimate - though still, a more detailed environmental assessment will be needed.
Above the Falls MPCA Sites

Legend

MPCA Sites:
- Air Permit
- CERCLIS Site
- Construction Stormwater Permit
- Hazardous Waste, Site of Minimal Risk
- Industrial Stormwater Permit
- Landfill, Closed
- Landfill, Open
- Leak Site
- Multiple Activities
- State Assessment Site
- Unpermitted Dump Site
- Voluntary Investigation & Cleanup (VIC)

Symbols:
- Railroad
- Study Area
- Industrial District
- City Boundary
- Water

Minneapolis
City of Lakes

1,300 950 0 1,300 Feet
Chapter 3. Freight Transportation

BARGE TRANSPORT

Barge transport is useful for low value, high volume bulk commodities, where speed of delivery is not important. It can also move fragile commodities safer than freight rail because the travel is smoother, resulting in less “spoilage” in shipments. A “Jumbo Barge” is the current standard barge size. It is 35’ wide by almost 200’ long. Barge transport is a competitor to rail transport for bulk materials where origins and destinations have sufficient correspondence to the alignment of river systems. Private businesses will make freight transport decisions based on economics, time frame and reliability.

History of Barging in Minneapolis

In 1927, the City of Minneapolis built a municipal barge terminal in the Bohemian Flats area near the Washington Avenue Bridge. This was made possible by the construction of Lock and Dam #1 in 1917 just upriver from Fort Snelling. The upper Mississippi was served at that time by a 6 foot navigation channel, which was shallower than the 9 foot channel that was maintained between Cairo, Illinois and the Gulf of Mexico. The barge terminal at Bohemian Flats was less than ideal, given that it was at the bottom of the river gorge and not served by rail. Because of their belief in the economic importance of water transport, City leadership advocated for both a deeper navigation channel on the Upper Mississippi, and another set of Locks and Dams that would allow the establishment of a large flat harbor above St. Anthony Falls.

A 9 foot channel was approved by congress in 1930, and was substantially implemented by 1940, along with the associated improvements to the existing lock and dam system. And in the 1937 reauthorization of the 9 foot channel, Congress passed legislation authorizing the Upper Mississippi Harbor Development—that is, the development of the additional locks and dams to surmount St. Anthony Falls and reach the upper riverfront. This was authorized despite lack of support from the Army Corp of Engineers, who found the project uneconomical. The authorization came with some cost sharing by the City of Minneapolis related to modifications to bridge and utility structures. (10 of the 11 bridges north of the Washington Avenue bridge had to be raised or altered.) The City’s contribution to the project was $6.6 million by its conclusion in 1963. Federal costs were in the range of $30 million.

Construction delays and escalating costs, along with lowering costs of rail transport, resulted in questions and reductions in public support during the two and a half decades it took to realize the upper harbor project. But City leadership maintained steady support. This included Hubert Humphrey as Mayor of Minneapolis from 1945 to 1949, and as US Senator after that.

The upper lock was dedicated in 1963, at a time when river shipments on the Upper Mississippi had been increasing. There was local disagreement at that time concerning the need for a public port north of St Anthony Falls. Some argued that private businesses would create sufficient barge terminals to satisfy the demand for barge freight to Minneapolis. But while barging was generally increasing on the Upper Mississippi, in Minnesota there was additional competition between barge terminals as the newly accessible upper harbor area in Minneapolis competed with the recently opened Minnesota River channel. Consequently fewer private barge terminals were constructed than were expected.

In 1965 the Minneapolis City Council established the Minneapolis Industrial Development Commission with a mandate to establish a public river terminal. And by 1968 the first phase of the “Port of Minneapolis” had been completed, and the operations at Bohemian Flats had been relocated to the new facility. By 1968, some private terminal facilities had also been developed, including terminals for Northern States Power’s Riverside Plan, American Iron and Supply Company, Scherer Brothers Lumber Company, JL Shiely Company, and a grain handling facility.
According to Minnesota Department of Transportation staff, shipping volumes were high for a time because coal went downriver from the Riverside plant to other power plants situated on the river. This changed when the power plants got their own rail service in the mid-70s. For a time, grain shipments were brought to the upper riverfront by train and shipped out by barge, but these operations were relocated to Savage after Continental Grain wanted to expand but was unable to do so at its Minneapolis location.

The City’s terminal was improved a number of times through the 70s and 80s, and expanded over that period to its current size. It has been managed by six companies. River Services is the current manager of the Upper Harbor Terminal, and has operated the terminal since 1991.

**Current Barging Activity**

There are currently three barging terminals in operation on the City’s upper riverfront.

1. **Northern Metal Recycling, 2800 Pacific Street.** At the location of the former American Iron recycling business, Northern Metal Recycling utilizes its terminal for export of recycled metals.

2. **Aggregate Industries, Pacific Street and 26th Avenue.** At the location of the former JL Shiely business, the Aggregate Industries facility is primarily utilized for the receipt of sand and gravel for utilization in the construction industry. The cost effectiveness of this business is presumably related to the proximity of Gray Cloud Island, where the materials are mined. Gray Cloud Island is just south of St Paul, a mile downriver from where Interstate 494 crosses the Mississippi River. Based on a reported conversation with MNDOT staff, there may be an estimated 10 to 15 years remaining in the supply of aggregate at Gray Cloud Island.

3. **The Upper Harbor Terminal, owned by the City of Minneapolis and operated by River Services.** The current City contract with River Services runs through 2014. A variety of commodities are received at the UHT. Almost all materials are received rather than shipped at the terminal. River Services reportedly stopped loading barges out of Minneapolis around five years ago in order to reduce costs. The terminal is served by a Canadian Pacific spur rail line that is also used by Twin City & Western Railroad (TC&W). However, most of the commodities that arrive by barge at the UHT are shipped out on trucks. In 2009, 91% (by tonnage) of all commodities shipped out of the UHT went via trucks with only 5% using the rail spur.

Barge transport to the upper riverfront is limited by the size of the lock and dam system. The three locks between Minneapolis and St Paul can accommodate only two-barge assemblages. This is in contrast to all of the other locks on the Mississippi River, which can accommodate assemblages of 9 barges at one time. Over the past five years, the amount of commodities passed through the Upper Locks at St Anthony Falls has declined by 47% based on overall tonnage. This compares to a 12% overall reduction for the entire Mississippi River Port System, which includes 5 ports: Winona, Red Wing, Savage, St Paul, and Minneapolis. In 2010, a total of 663,935 tons of commodities were shipped through the Upper Locks at St Anthony Falls. Questions remain whether the drop in barging traffic is due to a lack of competitveness of this location as a shipping option, and its uncertain future, or whether better market positioning, and site improvements might serve to increase volumes. Both may be true.

**The Mississippi River System**

The river navigational system serving Minnesota is maintained by the U.S. Army Corps of Engineers. The Corps dredges the navigation channels and operates the 29 locks on the Upper Mississippi River. The Locks serve both the commercial operators and recreational boaters. The commercial barge operators on the river pay for half of the cost of major Federal lock construction with a fuel user tax which is now 20 cents per gallon.
Annual Minnesota Port Tonnage

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<td>Minneapolis</td>
<td>663,935</td>
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<td>781,155</td>
<td>795,372</td>
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<td>851,692</td>
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<td>12,920,019</td>
<td>12,302,203</td>
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Source: Minnesota’s River Terminals, MnDOT 2009, with 2010 data from Army Corps

The annual cost to the Corps of operating and maintaining the three locks and dams between Minneapolis and St Paul averages $3.72 million. This includes the maintenance of the navigation channel for the same reach of the river.

The Corps and other state and federal authorities have recently raised the alert about the potential for the upward spread of Asian carp, a large invasive species that has the potential to severely damage northern Minnesota’s recreational fishing industry. Permanently closing the Minneapolis lock and dam system may become necessary to keep it from spreading further. While the fish are large enough to jump over many barriers, they would not be able to clear the St Anthony Falls if the lock was closed. The urgency of this discussion has increased recently by DNA testing of nearby waters which shows the presence of Asian carp.

Economic Value of Barging

Barge transport has value for the businesses that utilize it. The best information we have on the value of these services can be derived from a 2004 MNDOT study entitled “Modal Shifts from the Mississippi River & Duluth/Superior to Land Transportation.” This study estimated the value of barge services to the Minneapolis upper riverfront by evaluating the cost of unloading barges in St Paul instead of Minneapolis, and trucking the material from St Paul to its various destinations. This provides a starting point for understanding the economic importance of barge services to Minneapolis terminals (once scaled to current shipping volumes and adjusted for inflation). The actual impact on businesses will be lower than this estimate by some amount, because businesses could respond to discontinuance of barge services to Minneapolis in a variety of ways—of which offloading barge shipments in St Paul is just one possibility.

- **Cost of the modal shift.** The study was based on volumes of barge shipments between 1995 and 1999, which were much higher than current volumes. If the calculated costs are adjusted to reflect current volumes, and inflation is taken into account, the study estimates that discontinuing service to Minneapolis barge terminals would cost affected businesses $1.6 million annually. It would generate an additional public cost (in road maintenance, etc, due to truck transport) of $440,000 annually, and add some congestion to Interstate 94 through downtown Minneapolis. These costs should be seen as a ceiling, because they assume that all businesses will offload in St Paul and ship by truck from their. They don’t allow for businesses to make business adjustments related to choice of supplier or freight transport.

- **Business adjustments.** In the real world, the discontinuance of Minneapolis barge services would cause each affected business to review their business practices with respect to the materials they received by barge. Supplier and freight transport options would be reviewed to find the lowest cost substitute for the discontinued service. For example, a company that had been receiving bale twine through the City’s Upper Harbor Terminal may not choose to unload the twine in St Paul and truck it the extra distance. It may instead contract for rail transport all the way from the source. Or it may find that switching to another supplier has become the most economical option. More significant adjustments are also possible over time, including acquisition or sale of facilities, adjustments to business lines, etc.
- **Opportunity costs.** The attendant costs to businesses and the public are one way of estimating the economic value of barging services. But note that this estimated value should be compared to the value of alternative enterprises or development that could make use of the same riverfront land. In the case of the Upper Harbor Terminal, that land is 48 acres, and represents nearly a mile of river frontage. It has value for other purposes. Being in the urban core, practically any intensive development that is viable would have economic and environmental value compared with developing in a lower density manner in the urban fringe. More intensive development would save transportation costs and associated externalities, and require less street and utility infrastructure per household. It is very possible that the economic value of alternative development scenarios for the UHT and other riverfront barging properties are greater than the economic value of barge transport north of St. Anthony Falls.

**Upper Harbor Terminal**

Many varying claims have been made regarding the value and potential of the Upper Harbor Terminal. The 48 acres of City owned land include almost a mile of Mississippi River frontage. The Terminal currently employs around 15 individuals, and it provides access to barging services for 15 to 20 companies. It provides an important function to the businesses it serves, and is modestly profitable. It is, however, far from what was originally intended in terms of volume of business and revenue. This is partly related to its structural disadvantage in comparison with all other barge terminals on the Mississippi River—that is, the size constraints of the locks between St Paul and Minneapolis—which suggests that it will never be as large and profitable as downstream terminals. On the other hand, given the rising cost of petroleum and the low environmental impact of barge transport in general, there may be an overall increase in Mississippi River barge transport in the future. And this may increase the demand for UHT services as it would other terminals.

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<th>Material</th>
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</tr>
<tr>
<td>Urea</td>
<td>12,233.04</td>
<td>0.00</td>
<td>15,157.64</td>
<td>2,139.36</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Total Tons In** | **157,386.39**
**Total Tons Out**| **220,788.25**
**Total Tons**    | **378,174.64**
There are few if any business relationships between the Upper Harbor Terminal and nearby industrial businesses. This is because, aside from the two heavy industrial facilities that have their own private barging terminals, the small to medium sized industrial facilities on the upper riverfront would seldom need bulk commodities on the scale that justifies transport by barge. Closer ties between upper riverfront businesses and the UHT are unlikely to be built through industrial redevelopment (to the extent that it is pursued on the upper riverfront), because City industrial policy favors job-intensive production facilities over land-intensive users or distributors of bulk materials. These observations cast doubt on recent suggestions that the Terminal could serve as an economic engine to foster growth in an adjacent job-intensive industrial district.

This research supports the conclusion of the Above the Falls plan that the UHT facility can be closed at some point to pursue a higher value future that makes better use of the City’s riverfront. This proposed course of action was accepted by the Metropolitan Council and MNDOT after City Council adoption of the plan. According to MNDOT staff, this was based on a subsequent analysis that concluded that closure of the UHT would have “no significant impact” on highway congestion. And barge terminals in St Paul are considered to have ample capacity to receive the shipments that currently go to Minneapolis.

Although City policy calls for the eventual closure of the Upper Harbor Terminal, there is reason to proceed cautiously. The property is extensive, and if it were not in active use it would need to be maintained by the City of Minneapolis. Securing the site in the first year of closure would cost an estimated $365,000, and the ongoing annual holding costs are estimated to be $75,000 per year.

The current lease of the site by River Services, by contrast, generates revenues to the City of Minneapolis, and absolves the City of all maintenance responsibilities and expenditures. This suggests that closure of the terminal should be timed to coincide with redevelopment of the site—and that there is a public interest in the viability of barging services in the interim.

**RAILROAD**

The main sources for this section are MNDOT rail staff Tim Spencer, Dave Christianson, Janelle Collier.

The two highest freight rail users in the area are Burlington Northern Santa Fe (BNSF) and Canadian Pacific (CP). The BNSF mainline runs north-south along the east side of the study area. It runs freight trains, as well as Amtrak, and Northstar passenger service, resulting in 40 to 60 trains per day. Shoreham Yard serves as a major BN rail yard. The CP mainline runs east-west across the northern end of the study area, crossing the Mississippi River just south of the Camden Bridge.

Both railroad companies have spur lines that serve the upper riverfront. The CP spur extends along the west side of the river from the CP rail bridge to the Star Tribune printing facility. The CP spur is also used by the Twin City & Western Railroad (TC&W), a Class III private railroad. The BN spur extends along the east side of the river, crossing at a rail bridge a couple of blocks north of West Broadway. This convergence of rail facilities offers upper river businesses multiple options for rail freight transport.
Based on this study’s business survey and anecdotal evidence, few industrial businesses on the east side of the Upper Riverfront use freight rail. West side usage is also very light.

Decisions with respect to mode of transportation are individually made by the businesses based on cost. The multiple rail lines in the upper riverfront area provide a competitive advantage for area businesses. A business may play off rail companies to compete for pricing even if they are located on one company's track. For example, a business could contract with CP or Minnesota Commercial on BNSF tracks. A rail option can also be used to bargain for lower trucking prices.

Rail traffic is growing regionally and nationally. 2009 was the highest volume year ever. During the last gas price spike small shipping companies went out of business, consolidated, or moved to rail. Congestion in the metropolitan area further advantages rail transport. In some cases, because of this congestion, goods will be trucked away from the Cities, loaded to freight rail, and be shipped to the Cities by rail.

Rail companies are not required to report their tonnage like the barges (lock & dam data). MnDOT uses “weigh-bill” samples (approx 3% of weigh-bills) to get an idea of the freight rail traffic. This is not an accurate or reliable sample. A metro-wide freight rail study is underway, commissioned by MNDOT and the Metropolitan Council, but it will not be complete until sometime in 2012. The report will include recommendations for system improvements.

With the rail study pending, this report will defer most recommendations for rail improvements until that is complete. At present, a few observations can be made:

- While current volumes are relatively low in the upper riverfront, rail has significant potential for future growth that is already being realized. While not suitable for all goods, it may increasingly be an attractive option as gas prices rise.
- The rail network should be robust. Changes that decrease mainline connectivity and redundancy should be approached with caution.
- The spur lines in the upper riverfront carry low volumes, but are nonetheless an asset to area businesses. They are, however, less critical for performance of the overall network. While maintaining the option of these can be a selling point for various industrial sites, they should be managed in a way to otherwise be compatible with existing and planned future growth and redevelopment.

**TRUCK**

Truck traffic in the Above the Falls area is connected to the regional transportation network via Interstate I-94 with local access at West Broadway, Dowling Avenue, and 49th Avenue N. The route from I-94 to Shoreham Yards (via Dowling Ave-2nd St. N-Lowry Ave.-University Ave-23rd Ave. NE-30th Ave. NE) is designated as part of the National Highway System as an Intermodal Connector.

The local street network also includes truck routes on Washington Avenue, 2nd Street N, Broadway Avenue, Lowry Avenue and Marshall Street NE.

The major north-south truck routes are I-94 on the west bank and University Avenue on the east bank. Interstate 94 is one of the highest freight routes in general in the region, though volumes are higher north of I-694 than south of it. Over the past ten years, the truck traffic volumes on I-94 have increased, especially near the northern end of the study area. It is possible there is a link between the decline in UHT usage and increased truck traffic, though many other factors are likely at work as well.

On the other hand, there has been a substantial decline in truck traffic on University Avenue, from volumes that were fairly low to begin with. Given that the road runs through residential and commercial areas, this is not necessarily a problem. It is unclear why this change has happened, though it may be due to redevelopment and change on the east bank.

<table>
<thead>
<tr>
<th>Route Name</th>
<th>Location</th>
<th>1998</th>
<th>2009</th>
<th>△ 1998 - 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-94</td>
<td>N OF 49th AV N IN MPLS</td>
<td>4,550</td>
<td>5,400</td>
<td>19%</td>
</tr>
<tr>
<td>I-94</td>
<td>N OF DOWLING AV N IN MPLS</td>
<td>4,800</td>
<td>5,300</td>
<td>10%</td>
</tr>
<tr>
<td>I-94</td>
<td>S OF LOWRY AV</td>
<td>4,900</td>
<td>5,500</td>
<td>12%</td>
</tr>
<tr>
<td>I-94</td>
<td>N OF PLYMOUTH AV BRIDGE IN MPLS</td>
<td>4,800</td>
<td>4,800</td>
<td>0%</td>
</tr>
<tr>
<td>University Ave</td>
<td>S OF 37th AV NE</td>
<td>660</td>
<td>530</td>
<td>-20%</td>
</tr>
<tr>
<td>University Ave</td>
<td>N OF LOWRY AV NE</td>
<td>660</td>
<td>485</td>
<td>-27%</td>
</tr>
<tr>
<td>University Ave</td>
<td>N OF E BROADWAY ST</td>
<td>560</td>
<td>455</td>
<td>-19%</td>
</tr>
</tbody>
</table>

At present, there generally is adequate capacity for trucks throughout the highway system, though overall system congestion may pose the challenges as it does to other vehicle traffic. Concerns have been raised regarding the volumes and safety of intersections along Marshall Street and Lowry Avenue NE. These are County routes and therefore improvements are likely to happen through them.

There are County plans for improvements to Lowry (already implemented on the west bank) that show a much wider cross section, necessitating the removal of commercial and residential buildings along the street. At present, the City does not support this measure, and has advocated for an amendment to County plans to focus just on key intersection improvements. At present, the project has no timeline or budget for this.
There are also tentative plans for making Marshall Street more like a parkway (while still most likely accommodating trucks), as envisioned in the ATF plan. As with Lowry, there is no budget or timeline for this project.
Above the Falls Heavy Commercial Vehicle Traffic

Legend
Daily Truck Counts (2009)
- 5 - 630
- 631 - 1600
- 1601 - 3950
- 3951 - 6500
- 6501 - 11400
- Above the Falls Study Area
- Industrial District
- Railroad
- Roads
- Mississippi River

Map created January 2011 by CPED staff
with MetroGIS and MnDOT data
Chapter 4. Businesses

BUSINESS SURVEY

The type, condition, and plans of the existing business community are critical information. Business types, including clusters of similar businesses, were investigated in the first phases of this analysis.

To build on this, the City conducted a survey of businesses located in the Above the Falls study area. These surveys were mailed to all known businesses in the study area via regular mail, and also made available at the project website. Additionally, Business Development staff conducted a series of in-person site visits to targeted businesses which included covering the questions in the survey.

Of approximately 230 that were mailed out (not counting the ones that bounced back from invalid business addresses), 46 businesses responded - around a 20% response rate. While the responses were voluntary and hence the survey cannot be considered scientifically valid, the results are still illuminating. The following are some of the key findings.

- Approximately half the respondents were from industrial businesses, including manufacturing (28%), and wholesale trade (20%). Over a quarter were from service based businesses, with many of those being professional services, and the remaining quarter was made up of various other industries.

<table>
<thead>
<tr>
<th>2-digit NAICS Code</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 Utilities</td>
<td>1</td>
</tr>
<tr>
<td>23 Construction</td>
<td>4</td>
</tr>
<tr>
<td>31-33 Manufacturing</td>
<td>15</td>
</tr>
<tr>
<td>42 Wholesale Trade</td>
<td>8</td>
</tr>
<tr>
<td>48-49 Transportation and Warehousing</td>
<td>1</td>
</tr>
<tr>
<td>51 Information</td>
<td>1</td>
</tr>
<tr>
<td>54 Professional, Scientific, and Technical Services</td>
<td>6</td>
</tr>
<tr>
<td>62 Health Care and Social Assistance</td>
<td>1</td>
</tr>
<tr>
<td>71 Arts, Entertainment, and Recreation</td>
<td>2</td>
</tr>
<tr>
<td>72 Accommodation and Food Services</td>
<td>2</td>
</tr>
<tr>
<td>81 Other Services (except Public Administration)</td>
<td>7</td>
</tr>
</tbody>
</table>

- The most important factors cited for the value of this location were access to Interstate 94, central location/proximity to Downtown, and proximity to customers/market. Generally speaking, convenient access and centralized location are key advantages - with nearly half of respondents indicating they had a key customer or supplier within one mile of their location. There was less agreement on disadvantages of the area, but some of the more frequently named ones included tax rates, challenges with site configuration, and crime.
Almost all respondents indicated they saw themselves staying in the same location for the next five years, and maintaining or growing existing operations, with only a couple indicating they would scale back or move. Of those indicating they were staying, 31 said their operation would be similar in size, and 11 said it was likely to grow.

In terms of employment, the average number of employees was 30 and the average entry level wage was $16/hour. Most indicated they had no trouble finding workers, and a number said their employees included Minneapolis residents.

In relation to the planning process, it was notable that only about half (24) said they were familiar with the Above the Falls plans for the area. Of those familiar with it, eight indicated the plan had in someway impacted decisions at their company.

The survey supports a view of the area as a competitive location for a broad range of businesses including industrial facilities—and that many felt it would remain a desirable location, at least in the short to medium term.
This complements other data that shows a significant concentration of industrial uses in the area. While these are not in general “growth industries” at present in the regional economy, the locational assets—particularly the central location and convenient access to transportation options—may mean that there are still opportunities for business growth if the area.

**EMPLOYMENT**

The Above the Falls study area is home to approximately 300 businesses with a total employment of over 5,100. Of these employees, 30% are employed in manufacturing, 20% in wholesale trade, and 34% in services. (Source: ESRI Business Analyst) This is similar to the survey respondents, which suggests they may be somewhat representative on certain factors.

The chart below indicates that many in the study area are employed in manufacturing, trade, and construction jobs (note: this may not include all job categories and employers). These sectors are traditionally good sources of relatively high paying blue-collar jobs that do not require advanced education. This is clearly a resource for residents of the low- to moderate-income neighborhoods that flank the river along both sides. Efforts to strengthen the connection between these employers and area residents could increase benefits to both parties.

<table>
<thead>
<tr>
<th></th>
<th>Businesses</th>
<th></th>
<th>Employees</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing &amp; Hunting</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mining</td>
<td>1</td>
<td>0.3%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Utilities</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Construction</td>
<td>26</td>
<td>8.6%</td>
<td>453</td>
<td>8.8%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>39</td>
<td>12.9%</td>
<td>1,546</td>
<td>30.1%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>37</td>
<td>12.3%</td>
<td>1,011</td>
<td>19.7%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>37</td>
<td>12.3%</td>
<td>279</td>
<td>5.4%</td>
</tr>
<tr>
<td>Transportation &amp; Warehousing</td>
<td>7</td>
<td>2.3%</td>
<td>91</td>
<td>1.8%</td>
</tr>
<tr>
<td>Information</td>
<td>10</td>
<td>3.3%</td>
<td>51</td>
<td>1.0%</td>
</tr>
<tr>
<td>Finance &amp; Insurance</td>
<td>6</td>
<td>2.0%</td>
<td>58</td>
<td>1.1%</td>
</tr>
<tr>
<td>Real Estate, Rental &amp; Leasing</td>
<td>9</td>
<td>3.0%</td>
<td>37</td>
<td>0.7%</td>
</tr>
<tr>
<td>Professional, Scientific &amp; Tech Services</td>
<td>38</td>
<td>12.6%</td>
<td>411</td>
<td>8.0%</td>
</tr>
<tr>
<td>Management of Companies &amp; Enterprises</td>
<td>1</td>
<td>0.3%</td>
<td>45</td>
<td>0.9%</td>
</tr>
<tr>
<td>Administrative &amp; Support &amp; Waste Management</td>
<td>9</td>
<td>3.0%</td>
<td>85</td>
<td>1.7%</td>
</tr>
<tr>
<td>Educational Services</td>
<td>3</td>
<td>1.0%</td>
<td>99</td>
<td>1.9%</td>
</tr>
<tr>
<td>Health Care &amp; Social Assistance</td>
<td>7</td>
<td>2.3%</td>
<td>89</td>
<td>1.7%</td>
</tr>
<tr>
<td>Arts, Entertainment &amp; Recreation</td>
<td>5</td>
<td>1.7%</td>
<td>100</td>
<td>1.9%</td>
</tr>
<tr>
<td>Accommodation &amp; Food Services</td>
<td>18</td>
<td>6.0%</td>
<td>338</td>
<td>6.6%</td>
</tr>
<tr>
<td>Other Services (except Public Administration)</td>
<td>32</td>
<td>10.6%</td>
<td>391</td>
<td>7.6%</td>
</tr>
<tr>
<td>Public Administration</td>
<td>1</td>
<td>0.3%</td>
<td>14</td>
<td>0.3%</td>
</tr>
<tr>
<td>Unclassified Establishments</td>
<td>16</td>
<td>5.3%</td>
<td>37</td>
<td>0.7%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>302</td>
<td>100.0%</td>
<td>5,135</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Chapter 5. Industrial Policy

INDUSTRIAL LAND INVENTORY

The amount and availability of industrial land both in this area and citywide has been a topic of concern recently. The ability to grow the city's employment and tax base depends in part on the availability of viable development sites for new and expanding businesses. For industrial in particular, the sites often need to be fairly sizable and buffered from neighborhood residential areas.

The Industrial Land Use and Employment Policy Plan (2006) calculated the decline in overall inventory of industrially zoned sites due to rezoning related to small area plans. The chart below shows where these declines are happening – resulting in a net loss of over 1,300 acres (32%) guided for industrial.

<table>
<thead>
<tr>
<th>Study Areas</th>
<th>Industrial Zoned Acres</th>
<th>Change</th>
<th>Absolute</th>
<th>Relative</th>
</tr>
</thead>
<tbody>
<tr>
<td>City-Wide</td>
<td>Before: 3,986</td>
<td>After: 2,677</td>
<td>1,308</td>
<td>32%</td>
</tr>
<tr>
<td>I - Humboldt</td>
<td>207</td>
<td>207</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>II - Near North/Upper River</td>
<td>1,828</td>
<td>1,047</td>
<td>-781</td>
<td>-43%</td>
</tr>
<tr>
<td>III - Mid-City and SEMI</td>
<td>1,193</td>
<td>1,007</td>
<td>-186</td>
<td>-16%</td>
</tr>
<tr>
<td>IV - Hiawatha/Midtown Corridor</td>
<td>449</td>
<td>290</td>
<td>-159</td>
<td>-35%</td>
</tr>
<tr>
<td>Total</td>
<td>3,677</td>
<td>2,551</td>
<td>-1,126</td>
<td>-31%</td>
</tr>
</tbody>
</table>

1 = 2004
Source: Maxfield Research.

Since then, several studies have attempted to classify and quantify the availability of viable industrial sites citywide. This can be challenging to do, as there is very little truly "vacant" land in the city (i.e. with no uses whatsoever), and classifying an industrial property with a large parking/storage area as underutilized can be tricky, since outdoor loading and storage may be a critical part of an industry's operations (unlike surface parking for residential/commercial, which can frequently be replaced with enclosed parking and/or access to other modes).

This study added to the analysis with an analysis of how industrial sites classified as vacant (i.e. without a building on them) are being utilized. The result is in the chart below.

<table>
<thead>
<tr>
<th></th>
<th>ALL PARCELS</th>
<th>IN INDUSTRIAL DISTRICTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># parcels</td>
<td>total acres</td>
</tr>
<tr>
<td>Assessor Vacant/Unknown Parcels</td>
<td>858</td>
<td>1,029.3</td>
</tr>
<tr>
<td>Developed (Comm/Res/Indust)</td>
<td>46</td>
<td>51.4</td>
</tr>
<tr>
<td>Park</td>
<td>18</td>
<td>20.6</td>
</tr>
<tr>
<td>Railroad</td>
<td>250</td>
<td>640.4</td>
</tr>
<tr>
<td>Right-of-way</td>
<td>46</td>
<td>22.4</td>
</tr>
<tr>
<td>Utility</td>
<td>10</td>
<td>2.5</td>
</tr>
<tr>
<td>Parking/Storage</td>
<td>356</td>
<td>183.7</td>
</tr>
<tr>
<td>Vacant Land</td>
<td>132</td>
<td>108.4</td>
</tr>
<tr>
<td>Irregular Shape</td>
<td>13</td>
<td>3.4</td>
</tr>
<tr>
<td>Landlocked</td>
<td>40</td>
<td>35.9</td>
</tr>
<tr>
<td>Pond</td>
<td>5</td>
<td>11.4</td>
</tr>
<tr>
<td>Port Terminal</td>
<td>3</td>
<td>21.9</td>
</tr>
<tr>
<td>Residential Site</td>
<td>6</td>
<td>0.6</td>
</tr>
<tr>
<td>Other</td>
<td>65</td>
<td>35.1</td>
</tr>
</tbody>
</table>
According to the Assessor, there are 858 parcels totaling over 1,000 acres that are vacant and zoned industrial. However, only 315 (700 acres) are in designated industrial employment districts, with the rest classified as potentially transitioning to other uses.

Furthermore, of those sites, most are being used for railroad operations, right-of-way, parking and storage, and other uses. And looking closer at those that remain, a substantial number are landlocked (i.e. no public road access), irregularly shaped, or otherwise unavailable for stand-alone redevelopment. In the end there are only 16 sites averaging just one acre in size that may be considered developable - and that is too small for many new industrial uses.

This should not be taken to mean that industrial redevelopment is impossible. However, it brings into focus the fact that the City of Minneapolis is a fully developed City. New industrial development is likely to require the acquisition, and demolition or repurposing, of an existing facility. And it may require assembling multiple sites over time. This can add time, complexity, and expense to transactions that reduce the competitiveness of Minneapolis sites relative to suburban greenfield locations. These constraints are similar to that faced by new residential and office development as well, so that a market premium is required for urban development in order to compete with suburban and exurban locations. Because there is currently little or no rent premium for Minneapolis industrial space, even with locational attributes like in the upper riverfront, attracting new industrial development will continue to be difficult in the short to medium term.

The aforementioned challenges do not pertain to businesses that simply want to locate in an existing facility. However, much of the city’s inventory of industrial buildings is aging and lacking in modern features (such as high ceiling clearances) that would make them competitive with newer buildings elsewhere. On the other hand, this makes the area attractive for businesses that are looking for affordable space and don’t need a state of the art facility. These tend to be lower end uses and not particularly job intensive. While there is a place for this in the economy, it is unlikely to be the cornerstone of an overall economic development strategy.

Heavy industrial businesses face additional challenges. Although they tend not to be job-intensive businesses of the kind emphasized by City policy, they serve important economic functions either locally or regionally. In some cases, their relocation would further important objectives, such as the attraction and expansion of other businesses, or creating space for new riverfront amenities. But heavy industrial businesses require more intensive zoning that is in short supply. Lack of viable sites means that relocating businesses may be very difficult, and is likely to be quite costly. The Above the Falls plan budgeted a total of $40 million for all such activities throughout the study area. Even taking into account inflation in the intervening time, this number appears inadequate. A conversation with one key property owner suggested the city might spend more than that on acquiring a single property against their will. Eminent domain authority has in the past been an important tool for reaching a settlement w/ property owners, but that tool is no longer available to municipalities for redevelopment purposes.

There are occasions where the relocation of a difficult-to-locate business, or the attraction of a strategically positioned business, would be of particular importance. For this reason, this analysis suggests the City consider engaging in a citywide industrial site pipeline, including site acquisition, assembly, and remediation. Given the existing resource constraints the program may have to be somewhat modest, but the creation of a number of high quality sites over a five year period may allow the City to compete for some important business opportunities, or solve some particularly important relocation objectives.

GREEN AND SUSTAINABLE INDUSTRY

The mix of industries in the upper riverfront includes a number of recycling businesses. These businesses process and reclaim metal, concrete, yard waste/compostable items, paper, used goods (antiques), and others. In some cases, other area industries use these materials to produce goods, including metalwork and machining, construction trades, printing and publishing, and others. Additionally, some local businesses specialize in green/sustainable products and services.
These types of businesses contribute to a sustainable production economy. While not always high value or aesthetically pleasing, they are an important part of an urban vision for a “green” future.

The City has already prioritized the support and development of green jobs. The definition of this includes:

- Manufactures “green green” or clean tech products (example: Innovent Air Handling Equipment)
- Provides a “green” service (example: numerous architectural firms)
- Tied to a “green” process or Output (example: Re-Alliance)
- Green mission or green footprint (example: Seward Co-op)

The City’s strategy for supporting green jobs includes both assisting with building the market for green products and services and marketing the city as a place to retain, expand, and attract green businesses and jobs. The identified key market segments are green building products, renewable energy, and transportation products.

Looking at the existing strength of the upper riverfront industrial areas in green industry and the City’s goals for green industry, the area could be a key contributor to this strategy. If upper riverfront industrial areas could be branded as a “green industrial park” it could be a focus area of the City’s approach (while still maintaining a commitment to supporting green activities citywide).

Components of a green industrial strategy for the upper riverfront could include:

- Recognition of existing green businesses and their contributions to the economy
- Support for further greening of operations and sites, ranging from improved energy efficiency to onsite stormwater management
- Identifying opportunity sites for redevelopment with new and/or expanded industries with a green focus
- Connections between planning for waterfront parks and trails and adjacent industries, incorporating best practices for managing stormwater runoff, reducing contamination, etc., in ways that are attractive, sustainable, and benefit both industries and parks.
- Creating a compelling location and story to attract funding and investment from sources supporting the green cause (e.g. foundations) that could provide support for further improvements and innovation

Beyond this, there may be the potential to move towards the concept of an “eco industrial park.” This is defined as is a community of businesses in which businesses cooperate with each other and with the local community in an attempt to reduce waste and pollution, efficiently share resources (such as information, materials, water, energy, infrastructure, and natural resources), and help achieve sustainable development, with the intention of increasing economic gains and improving environmental quality. This would be a long term goal rather than a short term strategy, but it has the potential to change this area to a national model for urban industry and office.

**INDUSTRIAL JOBS**

One of the chief goals for the City associated with industrial development is the growth of jobs, particularly well-paying ones that benefit Minneapolis residents.

The industrial uses in the upper riverfront vary greatly in job density, from some fairly job-rich locations in the North Washington Jobs Park and some industrial campuses, to some very low job levels in warehousing and
distribution operations, and in some heavy industrial businesses. The goal for job creation, as articulated in both the Above the Falls Plan and the Industrial Land Use and Employment Policy Plan, is to encourage the development of higher job intensity businesses, to make the best use of land and to incorporate as many jobs as possible.

Another important element of the job picture is how local residents are connected to new and existing job opportunities. Business-focused strategies may involve how and where the businesses advertise their openings, offering public incentives related to local hiring, or setting targets for local employment in exchange for City development assistance. Resident-focused strategies include job training programs that help local residents get the skills and experience they need to qualify for jobs.

This plan does not suggest a change in these efforts. It does however underscore the importance of such efforts if employment goals are to be realized. This is important in ensuring that nearby communities benefit from the proximity of industrial employers.
Chapter 6. Transit Service

EXISTING CONDITIONS

Existing transit service for the upper riverfront is fairly modest. This is consistent with the relatively low density of adjacent residential areas, and the relatively low job intensity of much of the industrial.

The local transit routes serving the area include:

- Route 11 – This route travels primarily north-south from the City of Columbia Heights to Downtown Minneapolis to South Minneapolis. It runs along California St NE and 2nd St NE in the vicinity of the study area. This route has around 47 trips on a typical weekday.

- Route 32 – This route travels primarily east-west from Robbinsville through Minneapolis to Roseville. It runs along Lowry Avenue, 2nd Street N, and Marshall Street NE in the vicinity of the study area. This route has around 22 trips on a typical weekday.

- Route 22 – This route travels primarily north-south from Brooklyn Center to Downtown Minneapolis to the VA Medical Center on Hiawatha LRT. It runs along Lyndale Avenue N in the vicinity of the study area. This route has upwards of 60 trips on a typical weekday.

Numerous express routes run along Interstate 94, but do not typically have local stops in this area. There are high frequency bus routes running north-south through Northeast and North Minneapolis (for instance Route 10 on Central Avenue NE and Route 5 on Fremont and Emerson). However, both of these are at least a mile from the riverfront, so probably not an attractive option for those living or working on the riverfront. Even Route 22, a closer option, is around half a mile from the riverfront.
IMPACT ON DEVELOPMENT

Existing transit provides poor service to areas where new development is contemplated. Strong transit service is important in marketing new development, and also an integral component to creating development that is sustainable from an environmental perspective.

The Above the Falls Plan was created with the assumption that there would be significant new density. This has been upheld by our subsequent analysis, which suggests (for residential uses at least) that more dense development is necessary to ensure that projects approach cost feasibility. Improved transit service is required to support higher density development. But new development faces the challenge that high quality transit service will not be present at the outset. Further and ongoing communication with Metro Transit will be important for understanding how better transit service might be phased in as redevelopment occurs, and what forms the improved service might take.
Chapter 7. Subareas

POLICY CONTEXT

Much of the focus of this analysis is on the implications for geographic recommendations – what will stay, what will change. The Above the Falls vision presents a concept for large scale transformation of much of the riverfront. This analysis has suggested that some of this may change, based on issues related to feasibility, context, overall value to the city as a whole, and other factors. The draft recommendations are described below, along with a vision for how this area could contribute to the area.

LOCATIONAL CHARACTERISTICS FOR LAND USE SECTORS

Five Industrial Areas

Policy Affirmed

- Found no basis for reconsidering land use guidance for these areas.
- Consider designation of Graco/Scherer area as Industrial Employment District.

Key findings

- Subareas have all primary locational characteristics for industrial development, including:
  - Access to regional highway network
  - Large parcels
  - Buffered from residential uses
  - Flat topography
  - Access to rail
  - Center of region/ proximity to downtown
- Vacancy rate appears low despite high sector-wide vacancy rates.
- Subareas include two significant manufacturing headquarters.
- Most subareas include multiple options for freight transportation, an important characteristic for industrial uses

Vision

- Thriving, job intensive industries that provide employment to surrounding areas and are models for green and sustainable development, operations, and site design
Greater Grain Belt Area

Policy Affirmed

- Found no basis for reconsidering land use guidance.

Key findings

- Already a successful mixed use area
- Historically important/designated structures form an anchor of the area.
- Historic buildings have been largely renovated and occupied
- Market viability for office and housing demonstrated by recent and planned developments
- Nearby park improvements have been completed

Key findings

- Vital activity center with a range of housing, commercial, and supporting uses, in a beautiful historic riverfront context.
Lowry Marshall Neighborhood Commercial Node

Policy Affirmed

- Found no basis for reconsidering land use guidance.

Key findings

- Commercial guidance adjacent to park space offers unique opportunity for mix of riverfront amenities including retail, restaurants and park elements.
- New signature bridge should contribute to market viability.
- MWMO headquarters can provide interpretive and educational link to the riverfront and its functions.
- Waiting on Lowry Avenue reconstruction by County to determine tone and context for redevelopment at this location.

Vision

- Lively and interesting river-oriented commercial hub, with a unique educational element related to the river and watersheds.
West Broadway – Commercial Corridor/Industrial Employment District

Policy Affirmed

- Commercial Corridor, Industrial Employment District designations support policy intent for higher density non-retail commercial development.

- Consider implementation strategies for building corporate office cluster, which could include subarea along riverfront

Key findings

- Area has key locational characteristics for office development, such as
  - Access to regional highway network
  - Freeway visibility
  - Proximity to downtown
  - Nearby amenities—Commercial, Mississippi River, trails
  - Transit service

- Market viability for office headquarters development demonstrated by Coloplast development

Vision

- High profile office headquarters district, providing great jobs and an important linkage from the Broadway commercial corridor to the river.
East Side Parks

Policy Affirmed

- Found no basis for reconsidering land use guidance

- Consider development of neighborhood edge of parks, and of nearby property, to achieve plan objectives.

Key findings

- Maintenance of parkland is key challenge

- The capture of future tax revenues from development is a key resource for financing near term improvements to advance riverfront objectives

- Additional development can improve the safety and activity level of adjacent parkland, but should be limited to what can enhance the character and appeal to this area – including river-oriented amenities.

- Beautiful green riverfront park along a landscaped parkway. Interspersed with selected riverfront amenities, such as restaurants and marinas, and providing context for a lively mix of residential and commercial development.
Lowry to 26th Ave Riverfront Industrial Area

Consider policy modification to long-term industrial

Key findings

- Has all primary locational characteristics for industrial development
- Industrial Employment District adjacency can be problematic for residential development
- Has a concentration of facilities that are highly challenging to relocate
  - Northern Metal Recycling—I3 use, barge user, intensive site investment
  - Cemstone/Aggregate Industries/Lafarge—I3 use, supplier adjacency
  - City of Minneapolis Transfer Station—I3 use
  - Centerpoint Energy peak shaving plant—estimated $15 million relocation cost

Should still pursue public amenities

- Public riverfront with parks and trails
- Strengthened connections to the river
North of Xcel Industrial Area

Consider policy modification to long-term industrial

Key findings

- Has all primary locational characteristics for industrial development
- Residential development would be disconnected from existing neighborhoods
- Includes areas that are difficult to develop due to poor soils and contamination
- Market viability for commercial business recently demonstrated

Vision

- Lush green business park with public riverfront edge, home to a few high value office/industrial campuses and numerous public amenities
Northwest Quadrant

More analysis is required

- Higher intensity development would yield benefits, but a feasible implementation path is not certain.
- Deepen implementation research related to organizational and financial strategies, cost and timeline for context building investments.

Key findings

- While most current businesses retain market viability, key locational characteristics for industrial development are lacking.
- Lowest job densities in study area.
- Publicly held port property represents unique opportunity.
- Higher intensity redevelopment has potential to yield greater long-term benefits to adjacent communities, tax base, and enlivenment of new parks.

Issues for redevelopment

- Steep grades.
- Small parcels.
- Isolated parcels.
- Development opportunity: Upper Harbor Terminal.

Vision

- Report will include a description of the implementation paths needed for three possible futures:
  - Incremental improvements to the existing mix of uses – improving the area without any large scale changes/investments, minimal public intervention;
- Investment to attract higher value industrial and/or other commercial redevelopment – maintaining the site as an employment center, but repositioning it for more value-added, job intensive uses potentially through some public intervention; and

- Investment to transform the study area into a residential/mixed-use district – as described in the existing ATF plan, seeing a complete redevelopment of the area through significant public intervention.
The following tables represent a summary of some of the key research findings that relate to the Northwest Quadrant.

### Economic Findings for Northwest Quadrant

<table>
<thead>
<tr>
<th>Redevelopment Scenarios</th>
<th>Industrial</th>
<th>Office Cluster</th>
<th>Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Year Market Forecast</td>
<td>$</td>
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<tr>
<td>Competitiveness</td>
<td></td>
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<td>Financial Feasibility</td>
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<tr>
<td>Fiscal Impact</td>
<td>$</td>
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<tr>
<td>Public Cost of Context Setting</td>
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</table>

### Other Findings for Northwest Quadrant

<table>
<thead>
<tr>
<th>Redevelopment Scenarios</th>
<th>Industrial</th>
<th>Office Cluster</th>
<th>Residential</th>
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<tbody>
<tr>
<td>10 Year Market Forecast</td>
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<td>Competitiveness</td>
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<td>Financial Feasibility</td>
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<td>Fiscal Impact</td>
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<tr>
<td>Public Cost of Context Setting</td>
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</tbody>
</table>
Riverview Homes Subarea

More analysis is required

- Higher intensity development would yield benefits, but a feasible implementation path is not certain
- Deepen research on organizational and financial strategies, cost/timeline for context building investments

Key findings

- Has all primary locational characteristics for industrial and office development
- May support additional residential development
- Downtown proximity strengthens market for higher density development
- Higher density development has potential to yield greater long-term benefits to tax base, and enlivenment of new parks

Vision

- A mix of development types, but with a strong green park/trail buffer wrapping around Riverview Homes and linking to both the riverfront parkway and the new 26th Avenue bikeway extension.
Above the Falls Subareas
Summary of Recommendations by Area

<table>
<thead>
<tr>
<th>Geographical Subarea</th>
<th>Subarea #</th>
<th>Recommendation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Washington Jobs Park</td>
<td>1 &amp; 2</td>
<td>Policy affirmed. Should remain</td>
<td>May be model for industrial redevelopment in other upper riverfront areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>guided industrial.</td>
<td></td>
</tr>
<tr>
<td>Upper River Industrial District</td>
<td>6</td>
<td>Policy affirmed. Should remain</td>
<td>New MPRB-proposed connection to riverfront through this area should build from 26th Avenue greenway.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>guided industrial.</td>
<td></td>
</tr>
<tr>
<td>Xcel Riverside Plant</td>
<td>12</td>
<td>Policy affirmed. Should remain</td>
<td>Will need to continue to explore options for trail connections around the site</td>
</tr>
<tr>
<td></td>
<td></td>
<td>guided industrial.</td>
<td></td>
</tr>
<tr>
<td>Graco/Scherer Area</td>
<td>18</td>
<td>Policy affirmed. Should remain</td>
<td>Identified as &quot;Business Park&quot; in ATF Plan, and labeled &quot;Transitional Industrial&quot; in the comprehensive plan. MPRB plans new park on key riverfront parcel.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>designated Industrial Employment</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>District designation</td>
<td></td>
</tr>
<tr>
<td>Greater Grain Belt Area</td>
<td>16 &amp; 17</td>
<td>Policy affirmed. Should remain</td>
<td>Currently the most active focus of City and private sector development efforts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>designated Activity Center.</td>
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<td></td>
<td></td>
<td>Consider expanded boundaries</td>
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<td></td>
<td></td>
<td>to match ATF Plan.</td>
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<tr>
<td></td>
<td></td>
<td>designated Neighborhood Commercial Node.</td>
<td></td>
</tr>
<tr>
<td>West Broadway Commercial Corridor</td>
<td>3</td>
<td>Policy affirmed. Should remain</td>
<td>Research supports West Broadway Alive vision of higher density office cluster on West Broadway between Washington Avenue and the river.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>designated commercial corridor.</td>
<td></td>
</tr>
<tr>
<td>Marshall Avenue Eastside Parks</td>
<td>13 &amp; 15</td>
<td>Policy affirmed. Should remain</td>
<td>Additional development density along or near Marshall Avenue could improve feasibility of new park.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>guided for parks. Consider</td>
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<td></td>
<td></td>
<td>allowing development on Marshall side of area.</td>
<td></td>
</tr>
<tr>
<td>Lowry to 26th Riverfront Area</td>
<td>5</td>
<td>Consider policy modification to</td>
<td>Industrial guidance would not preclude long-range goal of acquiring riverfront easements or property for trails and parks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>industrial guidance, possibly as</td>
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<tr>
<td></td>
<td></td>
<td>expansion of adjacent Upper River Employment District.</td>
<td></td>
</tr>
<tr>
<td>North of Xcel Industrial Area</td>
<td>11</td>
<td>Consider policy modification to</td>
<td>Additional development is limited in parts by soil conditions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>industrial guidance, possibly as</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>expansion of adjacent Shoreham Yards Employment District.</td>
<td></td>
</tr>
<tr>
<td>Northwest Quadrant, Upper Harbor Terminal Area</td>
<td>7, 8, 9 &amp; 10</td>
<td>More analysis is required. Higher intensity development is desirable, but feasibility of implementation is still being investigated.</td>
<td>UHT represents is a great development opportunity, but development plan and timing need to be coordinated with development of adjacent properties. Site assembly is required for pursuit of ambitious redevelopment scenarios.</td>
</tr>
<tr>
<td>North of Broadway Riverfront Area</td>
<td>4</td>
<td>More analysis is required. Higher intensity development is desirable, but feasibility of implementation is still being investigated.</td>
<td>Goals include strengthening the viability of Riverview Townhomes development. Strategies related to transitions and buffers may be considered in addition to land use guidance.</td>
</tr>
</tbody>
</table>
Chapter 8. Utilities

The adequacy of the utility infrastructure along the upper riverfront has important implications for redevelopment, and in some redevelopment scenarios it will need improvements. Utility infrastructure was researched for the following systems:

- Electricity
- Natural gas
- Water
- Sanitary sewer
- Stormwater sewer

**ELECTRICITY**

Information is being developed. Brian Broucek (630-4530) w/ Xcel Energy has been the primary contact person.

**NATURAL GAS**

The natural gas facilities that serve the study area are adequate for the existing development, but would require expansion in some areas in the case of more intensive development. David Henningsgaard with CenterPoint Energy has been the primary contact person.

There is a 20”, high pressure gas line (175 psi) that runs through the study area from north to south. It enters the study area from the north on the east side of the river. It crosses the Mississippi River south of the Lowry Avenue Bridge, traverses the North Washington Industrial area southbound, and exits the study area on an alignment toward downtown Minneapolis. A second branch of the line crosses Interstate 94 westbound into the neighborhoods of north Minneapolis. This line is tapped in several locations to support lower pressure local gas networks throughout the study area.

CenterPoint Energy operates a peak shaving facility in the vicinity of Pacific and 26th Avenues. This is an important component of utility infrastructure that must be located along the gas main. There is some flexibility to the precise location of the facility, and one or more alternative locations within the City’s Industrial Employment Districts may work for this purpose. However, it would cost an estimated $15 million to do the relocation, if a suitable alternative property were acquired.

Development in the study area is directly served by local gas mains that are smaller diameter and lower pressure—predominantly 10 psi, but occasionally 75 psi. The existing lower pressure network reaches development on all existing blocks. It is likely to accommodate most redevelopment without major upgrades. The exception is in the area on the west side of the river north of Lowry Avenue. In that area there are low pressure gas mains that follow Washington Avenue and 2nd Street from Lowry Avenue north to 42nd Avenue. But the distance between the mains and the river is up to 800 feet, and new development could occupy parts of that area, supported by the construction of new streets. Local gas mains would need to be extended into these streets to support the new development, and other system improvements may be required as well.

The cost of providing the new gas infrastructure would most likely be borne by CenterPoint Energy. The developer of a residential subdivision is preliminarily responsible for the cost of the gas supply, but a credit of 150 feet of gas main is allowed per residential dwelling unit. With respect to commercial development, usually there is no cost involved in extending gas service, but it again depends upon the specifics of the development, with higher density
development and development that utilizes gas as a primary energy source being more likely to be exempted from the capital costs of extending gas service.

CenterPoint Energy staff provided maps that illustrate the gas network through the entire study area. They are in the project file.

**WATER**

The water supply infrastructure that serves the study area is adequate for existing development, but may require expansion in the case of new or intensified development. Craig Allison, with the City’s Public Works Department, (612-673-3280, craig.allison@ci.minneapolis.mn.us) has been the primary contact person with respect to water infrastructure.

The source of water for the City’s water supply infrastructure is the Mississippi River. It is drawn from the river on the east side of the river just north of the city boundary, which is just outside the project study area. The river water is treated at that location and put into the City’s water main infrastructure.

A 36” distribution main runs through the study area from north to south on both the east and the west sides of the river. On the west side it is for the most part located in 2nd Street, and on the east side it is in several streets including, from north to south, Marshall Street, Columbia Avenue, Randolph Street, Grand Street, and Main Street. For most of this distance, it is located in the second street from the Mississippi River, so it is never a great distance from the location of potential new development along the River.

The 36” mains carry sufficient water supply to accommodate any future development scenarios.

The great majority of the other north-south streets in the study area have water mains that provide local service. Most of these are sized between 6” and 12” in diameter. (8” local mains are today’s standard.) Local water mains are on at least two sides of practically every existing block, and would accommodate most redevelopment scenarios that are contemplated. Local water mains are not present in most of the area of the City’s upper harbor terminal north of Lowry Avenue, and would have to be installed to support new development in that area.

Funding must be identified for the provision of water mains in new areas. The estimated cost of installing a main in a new street is approximately $150 per lineal foot, or $100K for a 660 foot block.

City staff provided maps that illustrate the water network through the entire study area. They are in the project file.

**SEWER**

Information is being developed. John Studtmann (673-2986, john.studtmann@ci.minneapolis.mn.us) with Public Works Sewer Design is the primary contact person for generating the data. Kelly Moriarity (673-3617, kelly.moriarity@ci.minneapolis.mn.us) is the primary contact for data interpretation.
Chapter 9. Comparison Areas

**CASE STUDIES**

The concept of redevelopment of an industrial riverfront is hardly unique to the Above the Falls area. In the past, cities were frequently built up along rivers, which were typically used as a means of transportation. Heavy industrial uses were often in proximity to "working rivers" as were eventually rail lines and even (in later years) interstate highways.

As land use patterns have changed and people have come to value rivers more for their scenic and environmental value rather than purely utilitarian transport, transformation of the waterfront has been a priority in many cities. These areas are often in or close to the heart of a city or region, increasing their profile and importance. Some have remained employment centers with a focus on office and industrial. Others have transformed with a mix of commercial, residential, entertainment, and other uses. Many have incorporated open space and parks along or connecting to the waterfront.

Below is a selection of case studies chosen due to some similarity of characteristics of the upper riverfront area. It should be noted that Downtown/CBD stories seem to be the most common, but these are deemphasized here, as the upper riverfront does not have the characteristics of a downtown area. At the end of the chapter are some summary statements and conclusions drawn from the case studies.

**Wilmington, Delaware: Downtown Development on the Christina River**

The area along Wilmington’s Christina River was considered an "industrial wasteland" – former uses included leather tanning, shipbuilding, rail yards, steel milling and other heavy industrial production. However, this was transformed in part due to an ambitious private sector initiative to acquire underutilized land.

Throughout the 1970's and 1980's, 86 acres of riverfront industrial land were purchased by developers for $1.2 million (the land is now worth much more. However, pollution from former heavy industry limited developer interest.

In 1995, the General Assembly established the Riverfront Development Corporation of Delaware (RDC) to create economic vitality along Wilmington’s Christina River. Guided by The Vision for the Rivers (1994), the report generated by the Governor’s Task Force on the Future of the Brandywine & Christina Rivers, the RDC embarked on its mission of transforming an industrial wasteland into a thriving destination rich in history and filled with recreational, cultural, retail and culinary attractions.

The enumerated goals of the Vision were to improve water quality; preserve historical, cultural and community attributes of the river corridors; protect and enhance wildlife; increase recreational opportunities; and promote sustainable economic growth through compatible economic uses.

The RDC joined forces with the Delaware Department of Natural Resources and Environmental Control and the city of Wilmington. Together they developed a brownfield program to remediate the land and put it back into productive use.

Public improvements included modifications to Martin Luther King Jr. Boulevard to reestablish broken connections to the waterfront. It also included a new streetscape, with street trees, brick sidewalks, and new lighting. These improvements were completed and funded through Wilmington Initiatives, a multimodal project done through the regional planning council, utilizing state and federal funds.
Along with public funds that generated extensive private investment and tax revenues, site investigation and restoration initiatives resulted in environmental improvements on every acre of the redevelopment project. Infrastructure enhancements beautified and improved access to the area. And, while creating a tourism hub for northern Delaware, Riverfront Wilmington has evolved as an important employment center for the city.

Development included two art centers, an expanding outlet shopping mall, restaurants, four office buildings, two buildings, a 1.3-mile riverwalk, cultural amenities and the creation of an urban wildlife refuge on 200 acres; also a minor league ballpark and some new residential (under construction).

As of 2007, 3000 people worked on the riverfront. An economic impact study conducted by the University of Delaware and released in June indicates that Riverfront development has generated about $67 million in revenue for the city, county and state since 1996. The city’s return on investment has been steadily increasing to an estimated 35 percent a year, or $5.9 million in revenue for 2006. There’s been a dramatic shift in who is doing the funding, too. In fiscal 1996, 100 percent of the investment was from public funds. By fiscal 2007, 91 percent came from private sources.

Private developers have invested approximately $1 billion dollars in the city of Wilmington over the past five years, and the signs of revitalization are everywhere you look.
**Milwaukee, Wisconsin: Menomonie River Valley**

The Menomonie River Valley area was historically industrial, including farm machinery, rail cars, electric motors and cranes, agricultural and meat processing.

By the late 1990s, the Valley was marked by abandoned, contaminated land and vacant industrial buildings. Bridges into the Valley were demolished as businesses left and the Valley was isolated from the surrounding city. The neighborhoods adjacent to the Valley most strongly felt the impacts of the Valley’s decline; residents suffered from limited access to jobs and recreation opportunities, high levels of asthma and obesity, and poor air quality.

In 1998, the City of Milwaukee, the Menomonee Valley Business Association and the Milwaukee Metropolitan Sewerage District prepared a land use plan for the Menomonee Valley, a road map for its redevelopment. At the time, the State of Wisconsin was laying the groundwork for the Hank Aaron State Trail. As a result of these planning efforts, Menomonee Valley Partners was formed as a nonprofit organization, a public-private partnership to facilitate business, neighborhood, and public partners in efforts to revitalize the Valley.

The City was able to acquire much of the land for the redevelopment area since much was empty. A few businesses had to be bought out and relocated.

The plan focused on retaining existing industries, attracting desirable new industrial and business development, promoting compatible mixed use development in selected locations, and maintaining and protecting adjacent neighborhoods and business areas; initial efforts were focused on four high-priority development areas to help stimulate new investment and development.

The plan recognized that extensive environmental testing, remediation, and infrastructure improvements were needed before any significant new development can be undertaken. This project utilized a wide range of local, state, and federal financing tools. The plan includes phasing for future elements of redevelopment as part of Action Agenda.

A public-private partnership (Menomonie Valley Partners) was formed to initiate and carry out the redevelopment activity, including marshaling resources and organizing redevelopment activities.

In the past 10 years, 27 companies have moved to or expanded in the Valley, 4,200 jobs have been created, 45 acres of native plants, seven miles of trails, and a nationally recognized shared stormwater treatment system have been established. In addition, 10 million people visit the Valley’s recreation and entertainment destinations each year. More than 250 organizations and 450 individuals have given pro bono time by serving on boards, committees, and working teams, while thousands of individuals have volunteered at Valley events.

In the Menomonee Valley the seven year revitalization/redevelopment program reclaimed more than 120 acres of blighted property and transformed it into a vibrant industrial center and public park. The redevelopment has created more than $120 million of natural resource value, a projected 1,200 sustainable wage jobs, and has added $1 million to the City’s annual tax base.

Redevelopment included the relocation of some targeted uses, including those with large sand, salt, and gravel storage piles; identified others (cement) for potential removal in future phase.

Other features of the redevelopment included: business improvement district offers support for business community, new natural areas which accommodated contaminated fill on site while creating topography suitable for regional trail connection, and innovative shared stormwater treatment elements. The project has been recognized by the Sierra Club as “One of the 10 Best Developments in the Nation.”
Pittsburgh, Pennsylvania: Redevelopment of Riverfront Districts

Pittsburgh’s industrial riverfront developed at the confluence of 3 rivers, and was formerly lined by steel mills and rail yards.

Since 1994, the City of Pittsburgh has made riverfront land acquisition a top priority. As a result, the City now controls nearly 16 miles of its 35 miles of riverfront. Approximately twelve miles of riverfront are under full city control while another four miles are partially controlled (a narrow strip of intervening property exists between city land and the river).

Through its Urban Redevelopment Authority, Pittsburgh has become a national model for cities trying to stimulate economic development through aggressive land assembly and innovative, public-private financing.

The Urban Redevelopment Authority of Pittsburgh (URA) is the City of Pittsburgh’s economic development agency, committed to creating jobs, expanding the City’s tax base and improving the vitality of businesses and neighborhoods. The URA achieves this mission by assembling, preparing and conveying sites for major mixed-use developments; and by providing a portfolio of programs that include financing for business location, relocation and expansion, housing construction and rehabilitation, and home purchases and improvements.

Guidance is divided by categories of “districts” – Central (business and entertainment hub), Community (mixed use urban neighborhood), Industry (employment), and Green (parks, esp. in natural bluff areas). Each has a series of land use and design policies, and access and recreation goals. These projects were connected by goal of a continuous riverfront greenway, the Three Rivers Heritage Trail.

The area includes the Port of Pittsburgh, a large inland port facility

The city used a riverfront overlay district to provide additional land use guidance on top of baseline zoning (which remains unchanged). There was a focus on maintaining open space along the river and the potential for public access.

The Vision Plan for Pittsburgh’s Riverfronts (2002) was developed by Riverlife, a public private partnership devoted to riverfront revitalization, and presented a vision for a riverfront park system with design guidelines for adjacent development. The plan incorporates the river with attempts to “activate the water sheet itself with diverse uses while remaining cognizant of potential conflicts among them.”

To date, 70% of Three Rivers Park is complete, representing over $4 billion in investment along Pittsburgh’s riverbanks. The Park is a grand urban waterfront park along the Allegheny, Monongahela and Ohio Rivers in downtown Pittsburgh that provides a continuous link between existing and future riverfront destinations, as well as exciting new park spaces, amenities and commercial destinations

Land acquisition accomplished using TIF and the Pittsburgh Development Fund, a program implemented by the Urban Redevelopment Authority that is largely funded by state and federal grants.
Chattanooga, Tennessee: Downtown Development on the Tennessee River

Though only the fourth-largest city in Tennessee at 155,500 residents, Chattanooga has served as a model in urban waterfront revitalization since the city began its process twenty years ago.

A former industrial center, Chattanooga’s land along the Tennessee River was once so polluted that it bordered on uninhabitable. This same land is now its primary tourist attraction.

In the spring of 2005 Chattanooga capped an ambitious urban redevelopment program with the completion of a three-year initiative, dubbed the 21st Century Waterfront Plan. This was a $120- million, 129-acre project that used the Tennessee River as the primary resource to revive the city’s downtown. Objectives central to the plan include: creating green and walkable spaces, focusing on conservation and history, and supporting tourism and the arts.

The return to the river is now complete; the river banks are now lined with an aquarium, art museum, children’s museum, carousel, theaters, green space, public art, and pedestrian bridge and promenades. Chattanooga’s main innovation was capitalizing on public-private sector partnerships that planned, funded, and implemented the project.

Chattanooga planners use of public investment as a catalyst for private development, creating smart and attractive urban design along the waterfront with city and state dollars that encouraged private investment. For example, while the three museums, public space and public art was funded by the government, the River Pier Landing received huge support from private developers, for retail as well as residential projects. This has made Chattanooga a model of urban revitalization for cities nationwide.

Chattanooga’s success can also be attributed to its ability to integrate ongoing civic input into a vision that was guided by professionals who used urban design to spur the waterfront’s long-term revitalization. Some of the riverfront’s urban design challenges included filling the river, constructing a major city pier, narrowing a busy roadway, reconnecting the waterfront to downtown, and redesigning its public spaces so that the waterfront would become a pedestrian-friendly district.

The largest obstruction to Chattanooga’s vision of reconnecting with the river was the Riverfront Parkway, a roadway that cut between the Tennessee Aquarium and the riverfront. As a state highway, the Parkway couldn’t be changed by local officials. "After proposing several scenarios, we finally asked the state to give Riverfront Parkway to the city, and TDOT agreed to that request. Suddenly, with the removal of that obstacle, our community had a ‘blue sky’ opportunity to transform our waterfront.”

After reviewing the 21st Century Waterfront Plan, the mayor realized Chattanooga could leverage its experience with public-private partnerships to complete the plan in just three years. The mayor organized a joint fundraising campaign involving the Tennessee Aquarium, the Hunter Museum of American Art, and the Children’s Discovery Museum. It was the most ambitious fundraising campaign in the history of a community known for ambitious fundraising. In just 90 days, private donors had pledged $42 million for the implementation of the plan. The private sector donations were combined with public sources of revenue to create the $120 million fund needed to complete the 21st Century Waterfront Plan.

The Waterfront Plan also included areas for development by private commercial investors. These private investments are projected to top $60 million and create downtown condominiums, loft apartments, and other housing units. Private development will also account for a number of new shopping venues.
Vancouver, Canada: Granville Island

Vancouver, British Columbia, is a model city for the demonstration of redevelopment and revitalization success. In the recent past, the city has transitioned from a primarily “port city,” to a world class destination for tourism, urban living, and entertainment, with one of the fastest growing economies in the West.

Geographically, the central city is surrounded by water, including the Burrard Inlet, the Fraser River, and False Creek cuts into the middle of the developed downtown, and due to its shallow depth, was always the “secondary” body of water. However, today, False Creek is central to the rebirth of Vancouver’s downtown lifestyle. Cooper’s Park, including the Marinaside Crescent seawalk, lines the section of new residential highrises, attracting hundreds of bikers, walkers, and joggers a day.

On the opposite side of the “Creek” is Granville Island, an industrial reclamation and redevelopment project that is heralded as one of the most successful public spaces in the world. The city transformed this brownfield industrial site into a mixed-use development with residences, artist studios, light industry, a marina, and a vast marketplace complete with a farmer’s market, a brewery, restaurants, and indoor and outdoor public space. The success that is Granville Island represents a long range joint planning strategy of the Canadian federal government and the City of Vancouver in the 1970s.

The Granville Island Trust was founded in 1976 to manage the project, and it was improved in 1978. A capital project totaling $19 million improved the physical space with walkways, roads, and play areas. Then artists’ studios and retail began to fill the space, and today it continues to be one of a great public space, both for tourists and Vancouver’s inhabitants.

The island benefits from the character of the former industrial buildings and even retained the preexisting railroad tracks to create pedestrian walkways. The entire False Creek waterfront is united by the Seawalk, a recreational trail that maintains public access to the water at all points. It connects residential neighborhoods, to the University of British Columbia, to the forthcoming Olympic Village.

The establishment of the Seawalk has been crucial to the success of False Creek’s rise to one of the premier urban areas in the world. Vancouver’s strategy for False Creek shows that waterfront redevelopment projects adjacent to downtown areas can succeed if they are well-planned, make the best use of the existing assets of the site, and have a sustained vision for long term implementation.
Granville Island in Vancouver is designed to attract local residents and visitors to meet, explore and experience, all year round, a variety of cultural, recreational, educational, commercial and industrial activities. It is recognized as one of the most successful waterfront developments in North America.

Granville Island is now home to approximately 275 businesses and facilities which employ more than 2,500 people and generate in excess of $130 million in economic activity annually.

Between 1973 and 1982, the federal government invested $24.7 million in Granville Island. The funding in 1973 ($5.7 million) represented the assumption of the Harbour Board’s debt. Funding of $19 million between 1974 and 1982 represented capital improvements to the Island. Since 1983, however, Granville Island has been financially self-sustaining. Funding for capital improvements and operations is covered by revenues from its tenants, which are from the public, private and non-profit sectors.
Portland, Oregon: River District

Portland, Oregon is the largest city in the state and a major city in the Pacific Northwest, located along the Columbia and Willamette Rivers. Although the city is remarkable for its precedents in planning and growth management, it has had its fair share of challenges in sustaining its downtown and its waterfronts.

The Willamette River runs through the city, bisecting the central business district from its western portion. The decline of industry and the presence of national interstates along its banks made development a priority for the city in recent decades.

The popular Pearl District originated in the 1990s, when an elevated portion of NW Lovejoy Street from the Broadway Bridge past NW 10th Avenue was demolished, opening dozens of surrounding blocks (including some brownfield sites) for development, which peaked in the 2000s.

Portland’s Eastbank Esplanade is a well-used riverfront park and trail that provides an innovative form of access and connectivity along and across the Willamette River, despite the presence of the massive Interstate 5 freeway just yards to the East. The Esplanade facilitates North-South movement along the East bank of the river, extends the Willamette Greenway trail that covers both sides of the Willamette for the entirety of downtown Portland, and provides public spaces for recreational activities and community events. Bicyclists, runners, commuters and fishers can be observed enjoying the space year-round.

The South Waterfront District is a mixed use redevelopment district being developed by the same developer that kick started the successful Pearl District development a decade ago. The latter development was aided by public investment in infrastructure and a TIF-funded streetcar line. The South Waterfront is similarly supported with TIF financing and will accompany an extension of the streetcar into land formerly used as shipbuilding yards and warehousing. The new neighborhood will consist of a mix of high-rise residential towers, ground level retail, academic buildings for several local universities, a riverfront trail and a public park.

Portland’s waterfront development projects are geared at creating active uses and aiding in linking Portland’s diverse neighborhoods and districts back to the rivers. The River Renaissance, run through the city’s planning department, is geared at planning and development for all things related to the Willamette river. The waterfront is viewed not as a discrete development project, but as an ongoing, layered approach to making the most of one of the city’s finest assets.

The plans for the River District call for the creation of a high density urban residential neighborhood in partnership with the City of Portland. The area has a mix of multi-family housing, major office facilities, regional attractions, retail businesses, parks and open spaces. Much of this is in a unique partnership with Hoyt Street Properties, a major landowner in the district. Financing comes from: federal, state and local transportation funds, various housing assistance sources and tax increment proceeds from the Downtown Waterfront Urban Renewal District.

Projects are all coordinated through the Portland Development Commission, which oversees community and economic development efforts.

The Office of Healthy Working Rivers, in collaboration with other City programs, government partners, Neighborhood Associations, and stakeholders will be a catalyst for on-the-ground actions that support the City’s river goals.

In January 2009, City Council established the "Rivers Office" to bring a new focus to advancing the City’s river goals of achieving: a clean and healthy river, a prosperous working harbor, increased awareness of the river, a vibrant waterfront, and successful partnerships to implement river projects.

The South Waterfront Central District is a 130-acre neighborhood currently undergoing intensive redevelopment, generating both new jobs and housing. The development agreement establishes the terms and conditions of a
public-private partnership to redevelop a 31-acre area within the North Macadam Urban Renewal Area into a vibrant, sustainable mixed-use Central City neighborhood. Other important elements of the overall Plan are additional open space, greenway, and riverfront amenities with emphasis on the wildlife habitat and access for pedestrian and other recreational uses along the Willamette River. This area offers an unprecedented opportunity to locate corporate offices on substantial parcels of urban land.
Washington, DC: Capitol Riverfront

The Navy Yard was a bustling nautical center during the 19th Century and played an integral role in the development of the area. Surrounding the wharfs was an extensive commercial district, light industrial businesses, and one of the city’s most significant neighborhood communities. As the city and nation evolved, the Navy Yard changed from ship building to production of finished ship products and weapons ammunition. By the mid-1940s the Navy Yard and the expanded Annex area reached peak production with 26,000 employees in 132 buildings on 127 acres of land.

During the last century of the city’s growth, however, the River had deteriorated. The pollution of the river diminished its value as an asset to the city. After WWII, the Navy Yard consolidated its operations to a smaller campus, which slowed the economic and neighborhood activity of the area. Around this same time, the elevated portion of the Southeast-Southwest Freeway was completed, creating a physical barrier for access to the River. The combination of these and several other factors led to the river and the riverfront neighborhoods becoming neglected.

The Capitol Riverfront, the “Front,” is DC’s new neighborhood on the river, a growing district-within-the-District that extends the city’s skyline to the water’s edge. Located just five blocks south of the US Capitol Building, the Front offers the best in city living with the extraordinary advantages of a riverfront setting, distinct industrial heritage, and access to what matters: unique parks and trails, sports and entertainment, exceptional value, and proximity to Capitol Hill. In the Front, DC’s businesses and residents are part of a once-in-a-generation opportunity—shaping a new community on the river.

The Front is already home to a mixed-use community of 35,000 daytime employees in 6.5 million SF of office including the Washington Navy Yard and U.S. Department of Transportation, 2,427 residential units including apartments, condos, co-ops and townhouses with an estimated residential population of over 3,300 people, a 200-room Courtyard by Marriott, and the 41,000 seat Nationals Park.


The project involves adding over 9,000 new apartments, condominiums and lofts, modern office towers, 1,200 hotel rooms, one million square feet of retail amenities including a two future grocery stores, new restaurants, shops, and cafes. Over 33,900,000 square feet of new office, residential, hotel and retail space as well as four new parks are planned over the next 10–15 years.

This location is one of few places in region to “live, work, and play” - plus good transit/highway access. To date total completed and planned: 15 million square feet office, 1 million square feet retail, 8700 residential units, 1100 hotel rooms, $8.9 billion total investment. There are an estimated 3300 residents 30,000 within 1 mile), 35,000 daytime population, and 2 million visitors annually.

Capitol Riverfront, a business improvement district created by the City in 2007, has services including: Clean Teams and Hospitality Ambassadors, public realm improvements, economic development and business attraction efforts, transportation analysis and coordination, marketing, branding and public relations initiatives, community building events, and advocacy and educational outreach for the neighborhood. The BID’s FY2009 budget is approximately $1.5 million and is funded by an assessment that applies to commercial property (including land and parking lots), residences of ten or more units, and hotels.
Under development is a riverfront park system including Riverwalk behind Navy Yard and other elements connecting to the Anacostia River riverfront trail system. Upon build-out over 60% of the area will have been demolished and rebuilt with new office, residential, retail, hotels and parks.

LESIONS LEARNED

Some general observations and lessons learned from the case studies are described below:

- Control of land is important: all major redevelopments involved the acquisition of a sizable area by either a public sector entity or a cooperative private developer.

- Areas that were redeveloped typically were underutilized prior to redevelopment, with relatively few remaining that required relocation.
• Almost all featured a strong, independent redevelopment agency that forged public-private partnerships, identified and secured resources, and facilitated projects in the area.

• Projects generally featured public access along the riverfront, in the form of parks, trails and riverwalks, public uses (museums, stadiums, etc), extension of roads to the river, etc.

• Public investment was needed up front for land acquisition and assembly, cleanup of brownfields, investment in infrastructure, streetscape improvements, and deal-making including marketing and recruitment of developers/tenants/investors. However, in successful cases, this was followed by private sector investment.

• Downtowns are the most common focus of these efforts (and they have many similarities with each other due to the predictable role of the CBD in a region), though there are some examples of other areas; in those cases, the function of the area in terms of its role in the city/entire riverfront is highlighted.

• Partnership efforts appear mainly to be driven by development interests, though environmental concerns are prominently featured in design of open space, development of stormwater features, cleanup of contamination, and highlighting the value of the river.

• Federal and state resources are key, but are brought in within the context of the local partnership and leverage local resources; TIF and bonding appear to be among the most common tools at the local level (with assessments for more robust areas).

IMPLICATIONS FOR ABOVE THE FALLS

Below are some possible implications of these results for planning and implementation in the Above the Falls area.

• The park and open space guidance for the riverfront for the upper riverfront is affirmed. This has been an important element in most of the case studies discussed. The best results seem to be when the vision for these areas is closely integrated with the vision for adjacent redevelopment.

• Widespread transition in land use and character is unlikely without a very focused plan for acquisition, and even then it is likely to be incremental and long term. The Above the Falls industrial area is larger, in better condition, and more actively utilized than most areas described in the case studies.

• Because of the point above, a focus on smaller sub-districts may be necessary with less focus on the overall area, if change is to be effective.

• Regardless of approach, having a strong redevelopment agency that functions as they have in other cities is a vital element. The complexity and duration of the redevelopment process need a key guiding agency to gather resources, form partnerships, and sustain effort.

• There needs to be an effort to identify possible sources of funding for the project in terms of up-front investments; this implies it receives a certain level of priority relative to other possible projects in the city.

• A business improvement district may be valuable once job-generating development has a certain capacity, to help support the area’s further development.
Chapter 10. Park Impacts

The concept of parks as an amenity is a key element to the Above the Falls Plan, and this subsequent work largely does not question that overall assumption. However, some additional research was done to review studies that quantify the impacts on property values, to get a better sense of how this applies in the context of the upper riverfront.

IMPACTS OF PARKS ON PROPERTY VALUES

(Additional information to be added)

"Downtown Minneapolis Park Space Initiative" (City of Minneapolis, 2008)

- This recent study was conducted for nearby Downtown Minneapolis, so is seen to have a fair amount of relevance for the upper riverfront area.

- According to many experts, the premium placed on residential property located very near open space is 20-25%. The figure declines as distance from the park increases, diminishing significantly in various studies beyond 1,000 to 2,500 feet.

- Property investors and brokers in the Minneapolis area suggested that a well-maintained park within two blocks could add a premium of up to 40% to commercial leasing rates.

- Property Value Assumptions

<table>
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<th>Radius from Park Parcel (ft)</th>
<th>Increase in Value Attributable to Park Conversion (Yrs 0-2)</th>
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- Observed property values as a function of distance to the river, for properties in South Minneapolis between 32nd and 42nd Streets.
As can be observed from the preceding, parks have a demonstrated positive impact on nearby property values, but that impact decreases dramatically with distance. In the upper riverfront, the distance from the riverfront to existing neighborhoods varies. But it is substantial in some areas, and particularly on the North Side where Interstate 94 also interrupts the connection between existing communities and the riverfront. These factors would be expected to dampen the value improvements that would attend to riverfront improvements. Residential properties in Northeast Minneapolis would be likely to experience a stronger property value improvement as a result of the new parks and trails.

**OTHER PARK IMPACTS ON NEIGHBORING COMMUNITIES**

Property value impacts are more quantifiable than other benefits that can accrue from parks. But the “softer” benefits to communities that derive from new parkland are no less significant. The proposed upper riverfront park improvements include elements that can add to both the active and passive recreational opportunities that are available in North and Northeast Minneapolis. They would add bicycle and parkway corridors that would enhance the connectivity of these communities to City and regional networks. These improvements contribute to quality of life on many levels—from facilitating activities that build and maintain health to providing opportunities for mental and spiritual refuge.

**IMPACTS OF DEVELOPMENT ON PARKS**

Just as parks have impacts on surrounding development, the development should impact the design of nearby park and trail features. Riverfront parks and trails can serve a regional function, but they can also be designed to benefit and address needs of nearby development. While it would be wrong to create rules or be overly prescriptive, the development guidance for an area, and the design of parks in the area, should have a relationship to one other. For example, where proximate to residential areas, consideration should be given to including active recreation features in the mix of park amenities. Park land surrounded by industrial development might be more minimal. Natural areas might be considered as part of the mix in any scenario.

The character of nearby development will also have an impact on the level of park use. Even for regional park features, nearby users play an important role in animating the parkland with walkers, joggers, bikers, ice cream cone buyers, etc. Higher density development patterns, whether residential or office, will boost the use of nearby parks. And an activated park is generally also a safer park.

<table>
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<tr>
<th>Blocks from River Road</th>
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<th>Blocks from River Road</th>
<th>Land Value/sf</th>
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Chapter 11. Community Impacts

While the preceding chapter considered the impact of parks on surrounding communities, this chapter is concerned with the impact of different development scenarios on surrounding communities. The Above the Falls plan made the case that heavy industry along the riverfront had a dampening effect on property values and livability in nearby areas. And the plan’s proposal for new residential neighborhoods along the riverfront was largely based on the view that this kind of development would help to connect adjacent areas to the river, support additional retail and entertainment amenities, and thereby contribute to community revitalization. Since many of the communities near the riverfront are economically disadvantaged, this is an important consideration—one that is worthy of evaluation. The first section below is a summary of literature that relates to the impact of new development on nearby property values. Following that is a discussion of other potential impacts to nearby communities.

IMPACTS OF NEW DEVELOPMENT ON NEARBY PROPERTY VALUES

This section looks into the impacts of redevelopment on nearby property values, distinguishing between new industrial development and new residential/mixed use redevelopment scenarios. The impact on property values is to some degree a proxy for the overall benefits a new development would have on nearby communities. It is relatively straightforward and measurable, reflecting the perceived value of the new development.

Some of the research on property value impacts is based on brownfields redevelopment as residential development versus industrial development. Where industrial redevelopment is examined, there is some research included on the impacts of jobs on surrounding areas.

"Development and Neighborhood Revitalization: The Effects of Residential Investment on Property Values in Durham, NC" (Thomas A. Newell, Duke University, 2009)

- This study examines the view that residential development creates positive externalities through the study of taxable values in the neighborhood surrounding Durham, North Carolina’s Lyon Park, a low income community.

- In 2008 a sustained neighborhood revitalization effort led by Self Help, a local non-profit, coincided with a county wide tax reassessment, providing a unique ability to quantify the effects of redevelopment on property values in Lyon Park.

- The results find no evidence of positive development externalities reflected in improved real estate values for surrounding properties, challenging many of the arguments used to champion urban revitalization initiatives.

- The existence of positive externalities suggests the use of tax increment financing, subsidies or tax breaks for developers, and the loosening of zoning and permitting standards. On the other hand, if the benefits of development accrue largely to developers and landlords, municipalities may want to consider policies requiring those receiving financial support to make positive contributions to surrounding neighborhoods and properties.

- The most likely reason for negative effects is that increasing the housing stock in an area not experiencing rising demand can lower prices in the neighborhood. If the scale of new investment is not large enough to create significant positive externalities, this price suppression effect trumps the positive spillovers resulting from development.
• A second explanation concerns the desirability of older housing stock. New construction or renovation increases the aesthetic value of a structure. This may decrease the likelihood that nearby undeveloped homes are perceived favorably or call into contrast structural flaws. As a result, both consumers and appraisers lower their value assessments of older homes.

• The results of this regression analysis do not support the hypothesis that new development has benefits for surrounding property owners or municipalities through improvement of neighborhood property values. On the contrary, the Kent Street developments appear to create diseconomies for nearby homes.


• The authors view the effect of development in “transition neighborhoods” as a central concern for city appraisers as well as construction and mortgage loan underwriters. To quantify the effects of neighborhood life cycles on property values, they seek to develop a model for understanding both neighborhood upgrading and structural decline within the city of Cleveland.

• Citing a consensus within economic literature that residential investment is most effective when concentrated within a city block, the authors focus their study on the effect of new development within one to two city blocks.

• Using a data set of over 12,000 homes in the Cleveland area and recent sales price as the dependent variable, the authors identify several statistically significant variables. The number of new construction starts and value of rehabilitation investment within one to two city blocks are both significant, but provide different coefficient signs.

• The authors find that each unit of new construction increases a nearby home’s sale price by nearly $700, supporting the theory of positive externalities from residential investment.

• However, the regression coefficient for rehabilitation investment is strongly negative, challenging this interpretation.

• Argues that in order to create a net gain, investments must be substantial to ensure that the positive externalities outweigh the negative effects of additional competitive supply. Moreover, Simons et al. assert that municipalities should focus residential investment on areas demonstrating rising demand to insure positive results.


• Explores the effects of residential investment size on the magnitude and geographic reach of property value increases within neighborhoods.

• Citing former empirical studies, the authors assume that “new construction and rehabilitation have a positive effect on nearby property values”

• Overall neighborhood values, the size of investment, and the spatial dispersion of development can reduce and hide these effects. To understand the relationship between investment distance or size and positive externalities, the authors study a sample of nearly 8,000 homes in the greater Cleveland area.

• The regression results “overwhelmingly support the notion that residential investments increase nearby property values,” but also suggest that these effects dissipate quickly over a short geographic area. Rehabilitation effects do not create significant increases in property values for homes further than 150
feet from the investment. New construction creates benefits for homes up to 300 feet before dissipating, but spillover effects are far less substantial outside of the initial 150 foot zone.

- The coefficients used to determine the effect of investment size on surrounding property values yield significant and interesting results. They determine that the marginal effect of new construction does not increase with size while the marginal effect of rehabilitation is highly correlated with size.
- The authors implore policy makers to encourage new construction rather than supporting or subsidizing renovation and rehabilitation. They argue that concentrating their efforts on substantial and concentrated projects maximizes positive externalities from residential investment.
- They believe that residential investment is optimal when city planning locates investment sites approximately 150 feet from one another, or right at the edge of the first “ring.” Their interpretation of the results suggests heavy limitations on the geographic reach of development effects.


- The authors study the spillover effects caused by the creation of TIF districts in the Chicago area.
- While most TIF districts focus on areas tagged for industrial or commercial redevelopment, the resulting elimination of blight within these areas is considered likely to increase property value appreciation for nearby residential areas. This benefits landowners, but rising values can negatively affect local renters.
- The authors seek to quantify the effect of establishing TIF districts to determine the proper role for increment financing.
- They attribute the majority of property value appreciation to demand increases created by a growing amenity base.
- Results are mixed and suggest that price appreciation for surrounding residential properties is heavily dependent on the type of development. Mixed-Use developments generate price appreciation, proximity to industrial TIF districts reduces home price appreciation, and proximity to commercial districts had little or no measurable effect on price appreciation.
- They conclude that being near a TIF district has a significant impact on the appreciation of nearby residential units. Due to a high level of variance between the type of TIF district created, policy makers and concerned citizens should avoid uniform criticism or praise of TIF.
- The authors do not find evidence that spillover effects from TIF districts are a leading cause of housing price appreciation and argue that the magnitude of their effects are relatively small.


- This study measures and compares the impact of publicly assisted brownfield redevelopment on nearby residential property values in Milwaukee and Minneapolis.
- It also examines the influence of land use, neighborhood characteristics, and other redevelopment factors on this impact.
• The research approach incorporates a method to quantify nearby property value effects at more than 100 brownfield projects, and stakeholder interviews are used to assess perceived impacts to real estate conditions.

• The results reveal that the spillover effect in terms of raising surrounding property values is significant in both quantity and geographic scope, as redevelopment led to a net increase of 11.4% in nearby housing prices in Milwaukee and 2.7% in Minneapolis.

• It also reveals that project size, value, and the amount of public funding have minor impacts on this effect; factors such as proximity to major roads, distance from rail, and higher incomes have greater positive impacts.


• Studies of brownfields redevelopment indicate that the majority (between 55 and 80 percent) of brownfields projects involve public subsidy. The following discussion relates only to those projects that require this public investment.

• Leveraging Investment. Interpreting the results of eight studies with widely varying results, NEMW concludes that public investments in brownfields leverage total investments at a ratio of approximately $1/public investment to $8/total investment. Brownfields-related subsidies for site assessment, cleanup, and site preparation leverage total investment at a higher ratio of 1 to 20, consistent with Milwaukee studies. The 1 to 20 ratio is the average public cost to make the land “development ready.” Brownfield sites in severely distressed areas require higher subsidy levels, as much as double the ratios indicated here.

• Leveraging Employment. Interpreting results from six studies with widely varying results, NEMW concludes that it takes between $10,000 and $13,000 in public investment to leverage one job. Isolating public costs for brownfields-related site preparation, NEMW concludes that an average $5,700 in public costs leverage one job. For reference, the standard for judging investments by the U.S. Department of Housing and Urban Development and the U.S. Small Business Administration is $35,000 per job.

• Neighborhood Revitalization as Measured by Property Value Increase. Cleanup and redevelopment lead to property value increases on the order of five percent to 15 percent for properties that are up to 3/4 mile from the site. However, there are documented cases where “impact” projects, usually involving change in use from industrial to parks or mixed use, have had much higher impacts, even exceeding 100 percent.

• From the micro/project-specific perspective, public investments in brownfields are generally recouped from local taxes generated by the project within about five years, although tax credits may extend this period. From the macro perspective, the U.S. Conference of Mayors survey found that redeveloped brownfields in 62 surveyed cities could lead to $408 million in annual local tax revenue. Further, the survey found that redeveloping remaining brownfields could generate between $1.3 and $3.8 billion in local taxes.

• Brownfields and greyfields usually have infrastructure in place so there is a cost savings in building and maintaining infrastructure relative to alternative new/sprawl development. The magnitude of this cost savings is uncertain. One analysis pegged the savings at as much as $1/brownfields vs. $10/greenfields. The literature in the area of sprawl vs. new “compact development” suggests smaller increments, where the differential is 10 to 35 percent. Future research may reconcile these findings in that there is likely a significantly greater infrastructure savings attributable to brownfields/greyfields relative to new compact development.
• In some instances, brownfields redevelopment is the catalyst or the linchpin that creates a positive environment for new investment and leads to transformation of entire neighborhoods and districts.

"The Impact of Brownfield Reclamation on Surrounding Land Values and Crime," Stefan D. Watkins Department of Resource Analysis, Saint Mary’s University of Minnesota, Minneapolis, MN 55404

• How have land values and crime patterns changed near brownfields post reclamation?

• This paper used geographic information systems analysis tools and statistical analysis to measure the change in land values and crime occurrences over time. Land value and crime data from 2002 were compared to the same geographic areas in 2005 using paired t-test analyses.

• The goal was to demonstrate whether or not brownfield sites have a measurable difference compared to control sites that did not receive brownfield reclamation investment.

• Post brownfield reclamation shows two of three brown parcel groups near brownfields increased land values at the same rate as comparable control sites.

• The analysis of all former brownfields in Central Minneapolis revealed parcel land values within 1500 ft of brownfield sites showed a statistically significant decline in land value. However, post brownfield reclamation, the Central Minneapolis control neighborhoods showed significant increases in total value and property crime, but the neighborhoods with brownfield reclamation did not.

• It could be argued a larger influence on holding crime stable was not the brownfield reclamation, but rather the fact three of the four neighborhoods with redeveloped brownfields were designated for housing low-income residents, former drug users, and homeless young adults.

• The results from this project indicate brownfield reclamation for low-income housing areas does not necessarily significantly increase the land value of surrounding properties or significantly decrease crime within a three year period.


• The topic of neighborhood improvement is central to residential appraisal. The study empirically investigates how the redevelopment affects the housing values in the vicinity.

• The authors study the effects of an urban redevelopment project on housing property prices during the pre-redevelopment stage, construction stage and post-redevelopment stage.

• The results show that there were significant increases in property prices between before implementation and after completion of the redevelopment project. Property value enhancements well ahead of the actual project completion are also observed.

• It suggests that redevelopment has brought overall improvements to the surrounding properties and the expectation of these advantages was taken into consideration in the pricing of the properties during the construction phase.

• In addition, the changes in housing price gradients reveal that the effects of redevelopment varied with proximity between the properties and the redeveloped site.

• Properties which have the closest proximity with the redevelopment are found to have experienced greater increase in price after redevelopment but less extent of price rise during construction.
● It is important for urban planners to carefully consider the externalities of redevelopment received by properties in different locations, in order to maximize the positive impacts of redevelopment on the neighborhood.


● The purpose of this review is to survey the literature addressing the employment effects of brownfield redevelopment.

● Economic development has emerged as a potential goal of the environmental cleanup process. The evolving literature (1) addresses the redevelopment and job creation that has followed the numerous cases of environmental remediation; (2) continues to debate whether brownfield redevelopment creates new jobs or leads to the spatial reallocation of existing jobs; and (3) documents emerging efforts to tie brownfield redevelopment benefits to local residents and the un- or underemployed.

● The existing literature highlights the difficulties of moving from site cleanup to neighborhood revitalization. The literature is clear: site cleanup alone is typically not enough to stimulate neighborhood regeneration in the most distressed neighborhoods.

● There are tradeoffs between financial feasibility and tackling the most contaminated sites in the most distressed neighborhoods, and the redevelopment in these neighborhoods generally required large government subsidies.

● The literature highlights many positive developments and experiments. Apparent successes involve large scale plans that integrate site cleanup with wider community plans, the growing tendency to link jobs on brownfield sites to local residents, increasingly sophisticated subsidies and incentives, and the importance of design that integrates redevelopment with the existing neighborhood.

● To steer clear of gentrification, redevelopment strategies should focus on attracting employers who will hire local workers.

● The average project in which jobs are created appears to yield about 10 jobs per acre. When jobs are created, the new use is most likely to be industrial and commercial. Residential and recreational developments are both less common and create fewer direct jobs. The median public cost per job created is about $14,000.

● Revitalization will require additional incentives, subsidies, and social programs and even then, it is unrealistic to expect dramatic neighborhood revivals, falling unemployment, rising incomes in the short run.

● In residential and commercial areas, land contamination appears to have influenced the social and economic make up of the surrounding population; industrial areas don't face the same social complications. The implication is that the revitalization of a site in a residential or commercial area will face all the challenges of revitalizing any distressed neighborhood. Redevelopment in an industrial area that remains industrial is less complicated.


● Reviews econometric studies that attempt to measure the impact of employment growth on local unemployment and labor force participation.
General these studies find that many jobs from economic expansion go to in-migrants (new residents) to the metro area, but job growth does lower the unemployment rate and raise the labor force participation rate.

These studies disagree, however, on the share of jobs that go to in-migrants versus the resident unemployed or new entrants to the labor market

25 metropolitan areas from 1972 to 1986 and an analysis of the labor market success of 44,000 adult males in 89 metropolitan areas from 1979 to 1986, Bartik (1991) finds that a one-time shock, i.e. a major investment project, lowers the area's unemployment rate and raises the labor force participation rate for at least eight years after the shock. Advances in worker's occupational status continue after the eight years and the impact on earnings growth and income are greatest for blacks and low-income workers.

Bartik also finds that growth raises property values, but this impact is more likely to be regressive since higher income individuals own property.

While these results are suggestive of what we might expect with a redevelopment on a brownfield site, there are a number of limitations. First, the above studies apply to whole metropolitan areas, not smaller neighborhood areas. The likelihood jobs will be taken by residents who come from outside a neighborhood is much greater than for the case of a large metropolitan area.

When drawing from a metropolitan labor market, firms are likely to find the skill mix they are looking for. This is less likely in a neighborhood.

Second, the "shock" Bartik models is a 1 percent increase in metropolitan employment. This shock is larger than what we could expect from most brownfield redevelopments. In contrast, Bartik's review of the literature argues that incentives can influence firm location decisions and promote local labor demand and is more likely to be cost effective when applied to poorer places. The reason is the reservation wages are lower in high unemployment areas.

Bartik argues that it is not a zero-sum game because the nation benefits when jobs go to high unemployment areas rather than low-unemployment areas.

The opportunity cost of an unemployed worker is lower than the opportunity cost of an already employed worker. Thus there is a greater net gain to the national economy.

CONCLUSIONS

Redevelopment can positively impact property values in adjacent areas. However, there are a number of caveats:

The increased value of new residential development in a neighborhood with a low demand for housing may be completely outweighed by the dampening impact of introducing competition in soft housing market. The net result may be neutral or negative for new development.

The impact is likely to be small – one study estimated that even closely proximate developments may only see a $700 increase in value. Other factors in the neighborhood have much greater effects on value.

The impact may be very localized – one study suggested significant impacts were only visible for properties within 150 feet or less of a new development.

The type of new development makes a difference; with mixed use much more likely than commercial/industrial redevelopment to show a positive effect (though one study suggested mixed use that is predominantly aimed at low income households may not show a positive impact).
• Property value increases may actually be regressive as they tend to accrue to higher income people (who are more likely to own property), and renters can be negatively impacted by this due to increased rents

• The increases may not be due so much to the new development itself but rather to the growing amenity base accompanying the redevelopment plan

Brownfield redevelopment can also be a very cost-effective way of generating new jobs in an area, in terms of leveraging private investment. However, there are caveats:

• Jobs may not directly benefit the residents of a specific geographic area, unless there are programs and other linkages to connect residents with job opportunities

• Financial feasibility is a requirement of many programs that subsidize job-generating uses, and this is more challenging to demonstrate in distressed communities (funded projects tend to be in more stable areas)

• It is unrealistic to expect job creation alone to lead to a dramatic turnaround in a community that has a number of issues

• Some jobs may just be transfers from other locations rather than a net increase; on the positive side, there may still be a benefit if the job moves from an area of lesser need to an area of greater need

• Redevelopment from industrial to industrial tends to be more cost effective than transitioning from industrial to another use; industrial development also creates significantly more jobs per acre or dollar invested

IMPLICATIONS FOR ABOVE THE FALLS

Research shows that redevelopment can have a significant effect on the surrounding area. However, the magnitude of the impact is not so great as to outweigh other factors, and there may be some unforeseen consequences.

A mixed use future for redevelopment has been shown to be marginally better for surrounding areas than a job-based one in terms of property value impacts. However, introducing new housing into a market with plenty of existing supply can have the opposite effect, as the negative impact on housing values of adding to a housing glut outweighs the positive of an improved area

Industrial redevelopment scenarios tend to be more neutral on property value impacts; however the net benefit may well be positive if new jobs are taken into account; this does depend somewhat on how many jobs are available to local residents - suggesting that investment in job linkage/training efforts may be an important component of an industrial scenario.

All research suggests that impacts of any one element are quite likely to be very modest, and warns that there is no “silver bullet” to turn an area around.
Chapter 12. Redevelopment and the River

When planning for the upper riverfront, it is essential to not ignore the most central feature of the area: the river itself. This chapter touches on some of the implications of this location, and how it should shape land use and redevelopment recommendations.

The report "Ecological Riverfront Design" (American Planning Association, 2004) outlines five planning principles for riverfront revival:

- Demonstrate characteristics of the city’s unique relationship to the river
- Know the river ecosystem and plan for a scale larger than the riverfront
- Because rivers are dynamic, minimize new floodplain development
- Provide for public access, connections, and recreational uses
- Celebrate the river’s environmental and cultural history through public education programs, riverfront signage, and events

The sections below will discuss how each of these principles is addressed in these recommendations and the overall plan for the area.

CITY’S RELATIONSHIP TO THE RIVER

The relationship between the Mississippi River and Minneapolis goes back to the city's founding - its location is based on access to Saint Anthony Falls. The Mississippi was a true "working river," used to transport goods and to provide power to industries, many of which grew up along its banks. Though the industrial character of the central riverfront has largely transitioned to mixed use higher density development, the upper riverfront still maintains much of the original industrial heritage.

Of course, the city’s relationship with the river is broader as well. This has been the primary source of water for the area, provided opportunities for recreational activities and fishing, and supported natural systems and habitats. The city also has a long tradition of preserving waterfront areas for public access and enjoyment.

This also suggests that appropriate uses on the riverfront should include those with a special relationship to the river. This can include quite a range, from those that benefit from views (homes and restaurants), recreational access (for residents or workers), direct use of river (boating, marina, and other water uses), commercial traffic (barging operations), etc. Not all of these will be equally valued or appropriate, however, so decisions should include other factors to assess suitability.

The central riverfront provides a model for how these disparate strands can be recognized in a redevelopment scenario. Natural features are maintained as part of public open space. And the area’s industrial past is recognized in the character of the area (even as the uses have transitioned) and in interpretive elements provided.

RIVER ECOSYSTEM

The stretch of river running through the study area is clearly part of a larger system. And what happens in this area in terms of development has larger implications for the riverfront.

According to the MPHA, in 2011 the stretch of the Mississippi River through the upper riverfront was listed as impaired with (1) fecal coliform and (2) polychlorinated biphenyls (PCBs) in fish tissue. Fecal coliform is largely due
to animal waste and septic systems, and is likely associated with agricultural operations and rural development upstream. This pollutant is found at high levels at various locations and water bodies statewide. PCBs are industrial chemicals that were discontinued in the late 1970’s, but still exist in residual amounts in the environment. This pollutant is found at high levels in the Mississippi as far north as St Cloud. Together, these pollutants have implications for recreational use of the river and fish consumption.

At present, the MPCA is conducting a TMDL (total maximum daily load) project related to bacteria for the stretch of the Mississippi River including the upper riverfront. Interventions include compliance for failing septic systems, reduced runoff from feedlot/pasture areas, and overall better stormwater management (e.g. filtration and reducing sediment). This project is expected to conclude by 2012.

The water quality issues immediately downstream from the upper riverfront are comparable, with similar impairments. Farther downstream in St Paul there is the presence of Perfluorooctane Sulfonate (PFOS), an industrial chemical (originally manufactured by 3M) with a range of uses, particularly in metal plating and fire fighting foam. It is unclear if these have any origin in the upper riverfront, especially considering the distance from the area that these appear.

Many of Twin Cities metropolitan area waters are impaired with various pollutants. In Minneapolis, this includes the chain of lakes (with mercury, PFOS, and other contaminants), and Minnehaha Creek and Bassett Creek (dissolved oxygen, chloride, and fecal coliform). This is typical of a heavily developed urban area, and requires a range of approaches to address. Some of these have been effectively mitigated using strategies including stormwater retention and treatment facilities, erosion control, improved street sweeping, education and awareness outreach, and other approaches.
Redevelopment of the upper riverfront area provides several opportunities to improve water quality.

- The preservation of a green edge serves multiple purposes, not in the least the role of a buffer for runoff that impacts water quality, and potential area for stormwater management. As such, these parks function not just as amenities and recreational spaces, but as “green infrastructure” serving system needs.

- Likewise, sustainable site design practices can improve water quality, incorporating best management practices for stormwater. These concepts are discussed in the previous chapter in the context of the desired character of different development types.

- The river corridor is also part of a larger habitat and ecological system for plant and animal life. This includes its role as a major flyway for migratory birds. A continuous green connection along the riverfront is best for this function, preferably with natural areas and vegetation.

A number of questions have been raised regarding the negative impacts of existing uses, in particular older industrial properties that have not had to comply with more recent stormwater management and site design regulations – especially since many of these have a high percentage of impervious surface. This may be true, though at present the river is not measured as impaired for any current industrial pollutants.

Generally speaking, redevelopment to any use will improve water quality due to the site being brought into compliance with current regulations. Point sources from industrial uses are already heavily regulated, so it is more about controlling nonpoint source – i.e. what comes off the site’s surface, rather than out of a stack or pipe.

**MINIMIZE FLOODPLAIN DEVELOPMENT**
Despite the riverfront location, there are few designated floodplains along this stretch of the Mississippi River, with some notable exceptions. Local and state regulations apply that limit what development can be done in active floodplains.

Regardless of designations on flood maps, there is always a potential for changing water levels, including possibly as a result of climate change. With this in mind, it makes sense to plan for "soft edges" with development set back from the riverfront to allow for variability. Changes in water levels can be accommodated through thoughtfully designed parks and open space. The city's shoreland overlay district and critical area overlay place restrictions on how close development can be situated to the riverfront.

The Scherer Brothers site contains one of the largest stretches of floodplain on the upper riverfront. When the site is redeveloped into park and potential other uses, this will have to be taken into account.

PUBLIC ACCESS

As alluded to above, public access to the riverfront for recreational use is a long-standing value for the city. The Above the Falls Plan focused much of its attention on realizing a continuous park and trail system, and determining how adjacent development could help support this vision. The MPRB's recent planning further refines that vision with specific recommendations for projects.

An important thing to note is that access along the riverfront is not sufficient. There also need to be access points into the adjacent neighborhoods. This is especially critical on the west bank, where I-94 and large-scale industrial development separate neighborhoods from the riverfront.

CELEBRATING RIVERFRONT HISTORY AND CULTURE

This recommendation gets beyond the scope of a land use plan into programmatic elements. However, the basis of these will be in developing guidance for appropriate, context sensitive development that sets the stage for this activity and reflects the area's history and culture.

It should be noted that this history should not just include post-settlement European heritage, but also reference the culture of the original native inhabitants of the area and their relationship to the river.
Chapter 13. Implementation

This chapter outlines some general approaches to implementation that have emerged thus far in the analysis. This is not the final recommendations for the process, but a start at identifying the issues involved and the approaches that need to be taken. It is an important goal of this process that land use and development recommendations should not be adopted by the City without a clear sense of the implied commitment of the public sector to help make the recommended changes happen.

LEVELS OF CHANGE

The land use recommendations in the previous chapter reflect several different types of responses to existing land use and policy guidance:

- Preservation and strengthening: For some areas, this report recommends preserving the existing character and land use type. An example would be established industrial areas which are recommended to stay as such, but could improved through investments in the public realm, parks, and in private businesses.

- Enhancement and growth: Recommendations for other areas build off their existing strengths, but suggest additions to the character of the area beyond what is there now. Examples include industrial areas that could be viable locations for office and business park development, and mixed use areas that could be enhanced by new housing and commercial.

- Transformation: The most ambitious of the categories, areas guided for transformation would see an overall change in character to something completely different. An example would be changing an industrial area to a primarily residential one.

Since each of these categories requires different levels and types of involvement, particularly on the part of the public section, each will have its own set of recommendations for implementation. Strategies will need to be customized by the degree and timing of change.

PREPARATION AND STRENGTHENING

The main areas identified for preservation and strengthening are the previously designated industrial employment districts in the study area. The primary objective is to support these employment centers, while improving their contribution to City goals and objectives.

Existing designated industrial areas will continue to be supported, through regular outreach and targeted assistance as needed. When possibilities for infill redevelopment exist, the City may encourage higher value development with higher job density and linkages to the community, including connecting residents with jobs.

As discussed in a previous section, this may also be good places to focus on rebranding the area with a green and sustainable eco industrial park concept.

The level of City commitment to making this change happen will be relatively low, compared to other approaches. Good information and regular communication will still be important, as well as targeted investments. There is still strong reason to support parks development along the riverfront and connections into the neighborhood. However, change is likely to be incremental and gradual, based on opportunities as they arise.

ENHANCEMENT AND GROWTH
The main approach for enhancement and growth areas is to attract new value-added development to targeted areas. This is the mid-range approach - changing an area, but in an incremental way that is largely compatible with existing uses.

As identified in previous chapters, certain employment areas can be improved to attract new development including office headquarters and other higher value, more job dense employment uses. Likewise, mixed use areas along the east bank of the river can be enhanced with river-oriented development that brings people and activity to the riverfront.

Some land assembly may be needed, especially for key targeted sites or larger scale developments (such as a corporate campus). And public realm improvements and parks will set the stage to make the area more attractive for higher value development. Change may still be incremental, but more ambitious individual projects may still need a fair amount of public support at least at the outset.

**TRANSFORMATION**

The concept behind transformational area is to completely change the character and land uses of underutilized areas. This requires the largest commitment from the public sector, including the likelihood of sustained effort and intervention over a number of years.

Successful large-scale redevelopment usually preceded by land acquisition and assembly where there is substantial vacancy, blight, or underutilization. While there are some such areas in ATF, there are also many viable businesses that would expensive and challenging to relocate. As a result, any feasible acquisition strategy likely will need to be long term and opportunistic, relying on willing sellers.

This raises a number of related issues, including what is the interim land use over the time period while land is being assembled; what organizational structure is needed to support this effort; what level of public investment in the implementation process is needed and expected; and what is a realistic time frame for full implementation.

At present, there is no recommendation for transformational change. Such a recommendation is possible in the Northwest Quadrant/Upper Harbor Terminal area, but due to the extensive implications for public investment, additional analysis is underway to provide additional information about the expected scope and magnitude of the investment needed.

**ORGANIZATIONAL FRAMEWORK**

Above the Falls is a long term plan requiring a long term commitment to implementation. Reflecting the area’s existing conditions and market context, it seems very likely that the plan will not be realized without an organizational commitment over the long term. A properly staffed and authorized entity should take the lead on facilitating future development.

In addition to the base analysis done internally as part of the City’s process, more in depth and site-specific work will be needed to identify opportunities, evaluate feasibility, and facilitate development deals. In the past, the City played this role through the MCDCA. However, the MCDCA has largely been dissolved and the City at present does not have staff positioned to reassume a proactive development approach as envisioned in the plan.

Development is unlikely to happen without public investment, but financial capacity limitations mean there is an important role for private development capital. The lead development agency will need to identify and work with potential private development partners, and work to leverage resources.

There is strong potential synergy between parks and adjacent development. Part of the facilitating entity’s role should be to work in close partnership with MPRB, including exploring opportunities for joint solutions (e.g. addressing contamination, shared park/development sites, combined funding options, etc.). For instance,
attractive stormwater features located within parks can make redevelopment in the surrounding area more feasible and affordable for developers.

Guiding public investment in infrastructure will be a piece of the implementation strategy; as there are many competing areas of the City, the most likely strategies will be incremental - improvements linked to redevelopment (possibly TIF or DEED grant funded) and influence on existing Public Works programs (maintenance, bike facilities, etc.). Large scale projects may require special earmarks.

DEVELOPMENT PHASING

Above the Falls is unquestionably a long term plan. To ensure it is implemented, there need to be realistic time frames for redevelopment scenarios, especially more ambitious ones, before committing to them. Time frames will vary greatly by the type and extent of change recommended.

The implementation plan should identify general phasing of recommended actions. Some less-ready areas may be prime targets for up-front public investment to set the stage for future development. Parks development plays an important part in setting the stage for new development, but additional public investments are likely needed.

However, to keep momentum going, there also must be shorter term areas and elements for implementation. Feasibility analyses have demonstrated that some areas are more ready for development than others, namely those closest to areas with existing amenities and stronger market demand. These areas could be targeted for redevelopment activity.

The implementation plan should identify general phasing for the study area, but focus the most attention and detail on what is doable in the near term. Results will help catalyze further action.

ZONING AND LAND USE REGULATIONS

Recommendations for most subareas will not trigger large scale rezoning. Some targeted changes may be necessary, but there is unlikely to be widespread change. However, if the recommendations for a transformational area are adopted, the topic of rezoning becomes far more relevant.

Under any transformational scenario, the lack of development pressure in the area means that existing uses are likely to stay what they are for a significant length of time. Rezoning large swaths of industrial to residential could create a Catch 22 - not allowing industrial areas to continue to grow or expand, but situated in a way that would not be feasible for residential/mixed use development outside of a major public sector intervention. This could result in a further degraded area, depressing property values and creating blight.

Due to these realities, there is a need to allow for continued operation of existing uses in the interim, to ensure there is some productive use and value on the land in the intervening years. This is true even if the property is publicly owned, as there is no benefit from letting it remain vacant and accruing maintenance and security-related costs to the City. Communication regarding timing is essential when providing certainty to tenants regarding how long they can stay in those spaces.

Additionally, for areas programmed for park, there is no obvious zoning category - as land cannot be rezoned to a state that does not allow any development. At present, parks are allowed in all zoning districts. There may be other ways to handle the recommendation for waterfront public access for riverfront parcels through special zoning techniques.

Overall, the long term vision for redevelopment in transformational areas suggests that a nuanced approach to rezoning is needed.