Rethinking Urban Redevelopment in Saint Paul, Minnesota: A Cost-Benefit Analysis of The Bridges of Saint Paul

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Abstract:
The Bridges of Saint Paul is a $1.5 billion development project proposed for the City of Saint Paul by the JLT Group, Inc. The Bridges project is a multi-use development consisting of office and retail space, condominiums, lodging, public space, and entertainment options. The project’s diverse offerings and large size have led to predictions of widespread and large impacts on the Twin Cities region. In considering the project, however, the City of Saint Paul made no attempt to weigh and consider interests in a systematic way. This study offers a method to weigh competing effects through a cost-benefit analysis. The analysis provides policy-makers in the city with a blueprint for consideration of future urban development projects for the proposed site and the Twin Cities region.

Keywords: Urban Renewal, Urban Revitalization, West Side St. Paul, Twin Cities

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1. Introduction/Motivation

In November 2003, Saint Paul-based developer Jerry Trooien unveiled his vision for the city of Saint Paul in the form of a $1.5 billion urban redevelopment project for the city’s West Side. Immediately, the project, dubbed the Bridges of Saint Paul, led to fierce debate and controversy. After several years in limbo, in October 2006 the Saint Paul Planning Commission rejected Trooien’s request to change zoning ordinances in the proposed area, leading Trooien’s firm the JLT Group, Inc. to temporarily table the project. The Planning Commission’s decision came as a surprise as just a week earlier the Zoning Commission had advised the Planning Commission to approve zoning changes. Both the Planning Commission and the Zoning Commission arrived at their decision after reviewing briefs from neighborhood, conservation, and business groups. In addition, both commissions had access to several “Economic Impact” studies. Surprisingly, nonpartisan and unbiased studies on the overall impact of social welfare were not requested or offered. In fact, the most powerful tool for studying the overall impact of a project on the people of a region, cost-benefit analysis, was ignored. In ignoring cost-benefit analysis the Planning Commission was forced to consider competing claims across different sectors and time without a clear method to assign weights. Considering the difficulty of this task, it seems possible that the Planning Commission may have rejected a projected that would have positively contributed to social welfare in the Twin Cities. In light of a cost-benefit analysis, then, did the City of Saint Paul make the right decision?

In conducting a cost-benefit analysis, this study attempts to evaluate several controversial topics of urban renewal programs: from cost to gentrification to tourism.
This study will touch on a variety of topics due to the nature of the Bridges proposal. As proposed, Bridges contains residential, office, retail, hospitality, and entertainment space. Accordingly, to properly examine all possible costs and benefits of this complex project, the details of the proposal must first be examined.

The Bridges project is the largest proposed urban development project in Saint Paul in decades. The JLT Group estimates the project’s cost at $1.5 billion. The proposed project would occupy 33 acres of land adjacent to Saint Paul’s Central Business District (CBD) in an area known as the West Side Flats. The “Bridges” project, as proposed, would contain 1,150 residential units, 450,000 square feet of retail space, 335,000 square feet of office space, an AMC multi-screen cinema complex, a Westin Hotel, and the “Mythica”—a tourist attraction with interactive exhibits on world mythology. The majority of the project would be privately financed; however, to complete the project the JLT Group has asked the city of Saint Paul to change current zoning laws, which prohibit buildings over 14 stories, provide $122 million in Tax Increment Financing (TIF is a type of subsidy which is repaid with increased property tax revenue from a project if tax revenues are indeed increased), and acquire 3 acres of land using eminent domain.

The concept of Bridges arose due to several market trends affecting cities in general and Saint Paul’s West Side Flats area in particular. Historically, the West Side Flats area has housed rail yards, warehouses, manufacturing plants, and other heavy industry. Recently, however, as Saint Paul, and the United States, moves to a post-industrial service economy, manufacturing plants and warehouses have become vacant and fallen into disrepair. Some have been torn down and replaced by bars, restaurants,
financial institutions, and offices. Currently, this process is at a mid-way point with vacant land, abandoned warehouses, manufacturing plants, new office buildings, and banks all sitting side-by-side. Vacant land and buildings represent a negative externality as they are aesthetically unappealing, harm city pride, and may create health, fire, and crime risks. Therefore, some policy to speed transition seems justified. Whether Bridges is the appropriate policy tool, however, remains to be seen.

The site proposed for Bridges has caused neighborhood groups to express opposition due to the perceived threat of neighborhood change. Due to the historic presence of heavy industry, the West Side Flats area has historically attracted new immigrants. These waves of immigrants have firmly established the West Side as a working-class, ethnic neighborhood. In the first half of the century, the area hosted Irish and Jews immigrants. Currently, the West Side Flats is home to a vibrant Latino community. Recently, with the proliferation of banks and office buildings on the West Side, along with the Bridges proposal, community members have begun to express concerns over gentrification. Neighborhood groups and advocates have expressed concern that rising rents and new affluent, white in-migrants will cause a loss of diversity in the area. Currently, the racial make-up of the whole West Side area is 49 percent White, 33 percent Hispanic, 8 percent Asian, 6 percent Black, 2 percent American Indian, and 3 percent Multiracial. The West Side Flats’ racial makeup is 19 percent White, 40 percent Hispanic, 23 percent Asian, 11 percent Black, 2 percent American Indian, and 4 percent multiracial. Residents fear that Bridges may be the seed that pushes out current residents and destroys the cultural heritage of Saint Paul’s historic barrio.
Concern over the Bridges project also centers around the effects on existing upscale commercial establishments. The central Twin Cities area already has several established upscale commercial areas—such as Grand Ave in St. Paul, Uptown Minneapolis, Downtown Minneapolis, and Edina’s Galleria to name a few. Much of this development has been spurred by local government policy. With these areas well established, the Twin Cities area may be reaching a point of market saturation for upscale retail and entertainment. As a result, the Bridges project may merely increase vacancies in other areas of the Twin Cities or other areas of the Saint Paul CBD at a cost of $1.5 billion.

River conservation groups have also expressed concern over the Bridges impact on the Saint Paul skyline. The area currently hosts several buildings under 10 stories. The tallest building proposed for the development, however, is 30 stories. Conservation groups fear that the increased building height will block views of the Mississippi River Valley from public spaces in and around St. Paul’s CBD.

Despite the numerous interests at stake, no attempt has been made to clearly define and compare all relevant interests. In fact, the decision of the Planning Commission was based on the somewhat ambiguous concepts of “neighborhood character” and “economic impacts.” For instance, preserving “neighborhood character” may mean preserving the prevalence of single-family homes or it could mean preserving the Latino character of the area or it could mean preserving the working-class character of the area. Similarly, “economic impacts” has a variety of interpretations including the effects of the project on income, profits, employment, wages, taxes, or output in Saint Paul, the Twin Cities, the United States, or the world. Furthermore, no attempt has been
made to quantify these concepts in a way that would enable the public or policy-makers to make a comparison between neighborhood character and economic impacts. Given the level of ambiguity of concepts and the inability to compare and evaluate them, it seems any policy decision including that of the Planning Commission is completely arbitrary.

To avoid an arbitrary decision-making process, a method to compare all possible effects of a policy in a meaningful way is needed. This method is called cost-benefit analysis. Cost-benefit analysis allows us to evaluate the overall impact of a policy on social well-being by evaluating each possible impact in terms of a monetary value and aggregating them. Cost-benefit analysis is able to monetize effects of a policy by observing the behavior and preferences of all citizens using market information. Cost-benefit analysis, because it uses the preferences of citizens, provides a neutral perspective and reflects the values only of society members.

This study is a cost-benefit analysis of the Bridges project from the perspective of the Twin Cities region. The Twin Cities region was chosen as opposed to the world or St. Paul for several reasons. A study from the perspective of the world is too broad and likely of little importance to policy-makers in St. Paul. A study from the perspective of just the City of St. Paul, on the other hand, is too narrow. Too often policy-makers analyze policy from a narrow scope such as one municipality in a metropolitan area. This often leads to a zero-sum game between cities, which may not lead to the best outcome for any residents. For example, it is certainly not in the interest of any Twin Cities residents for St. Paul to thrive while surrounding areas decay. Indeed, cities as areas are successful due to agglomeration effects. The goal of policy in the region, therefore, should be to increase efficiency, i.e. social welfare, in the entire region. For this reason,
this analysis takes into account the effects on social welfare of the entire Minneapolis-St.
Paul Metropolitan Statistical Area as defined by the US Census Bureau.

2. Literature Review

Currently, two “economic impact analyses” dominate the literature on the Bridges Project: “The Bridges of St. Paul Economic Impacts” prepared for the City of St. Paul by the McComb Group, Ltd. and the “Economic Impact Analysis” of the Bridges project by Dr. Tom Musil of the University of St. Thomas. Dr. Tom Musil’s analysis uses an input-output model to attempt to quantify the increase in output, value-added to property, and employment resulting from the Bridges project. His results conclude that the Bridges project will have increase output by about $791 million\(^1\) in the Twin Cities Metropolitan Area, about $470 million\(^2\) in Ramsey County (which includes Saint Paul and some of its northern suburbs), and about $453 million\(^3\) in the City of Saint Paul (p. 3). In addition, Musil finds that the project will add 1500 construction jobs and 1130 construction related jobs annually to the economy during the two year construction period (p. 3). Musil predicts the Bridges project will become the Twin Cities second largest tourist attraction behind the Mall of America (p. 7). Due to the large increase in output, employment, and tourism, Musil recommends Saint Paul undertake the project.

Similarly, a study conducted by the McComb Group, Ltd. uses market research on demand for condominiums, retail, and office space to estimate Bridges’ impact on retail

\(^1\) $790,911,500.00  
\(^2\) $469,862,800.00  
\(^3\) $454,524,200.00
sales, property values, public service costs, as well as its fiscal impact on the city of St. Paul. The study concludes that Bridges has potential retail sales of $351 million and will offer 3,320 jobs by 2015 (pp. xi-xii). The McComb study also indicates an increase in residential property tax revenue of $381.2 million by 2015 (p. xii). They also estimate that $60 million in retail sales will be transferred from existing St. Paul businesses and that Bridges will lead to an additional $986,200 in additional public service costs by 2015 (pp. xvi-xvii).

Both studies, however, serve as a poor proxy for determining Bridges effect on social welfare in the Twin Cities. Both studies were conducted by experts in the field of real estate not economics. As a result, both studies focus on increased sales, property values, employment and tourism while ignoring costs resulting from congestion, substitution effects, neighborhood change, and loss of existing structures. Furthermore, both studies rely on “multiplier effects” to increase anticipated benefits without providing a source or justification. Both studies also ignore potential benefits not related directly to sales, such as city recentralization. Furthermore, both studies acknowledge the possibility of future costs and benefits, but make no attempt at inter-temporal comparisons. In order to properly account for all gains and losses, future and present, a proper cost-benefit analysis must be conducted. Therefore, current literature on cost-benefit analysis must be examined to construct a proper methodology for examining the Bridges project.

Both the McComb and Musil studies tout increased employment as a significant benefit of the Bridges project, but economic literature suggests that employment effects are much more ambiguous. In their seminal work on cost-benefit analysis, Boardman et
al. (2006) note that in economies with low numbers of unemployed workers (under 5%) a project is likely to draw workers that are between jobs rather than in surplus. As a result, the project will not cause a reduction in unemployment and new jobs should not be counted as a benefit (p. 99). In this analysis, therefore, the current number of surplus workers should be taken into account in determining the magnitude of employment benefits.

Far from being a benefit, some have suggested that the employment effects of Bridges may be a cost. The shift from a manufacturing to service economy has been well documented in recent literature. This shift has often been accompanied by a fall in wages throughout the economy and unemployment of those formerly in manufacturing jobs. The Bridges project proposes to displace workers in manufacturing and auto service with jobs in housekeeping, retail, and foodservice. If jobs loss due to Bridges is large enough to cause unemployment in certain sectors or a fall in wages, an analysis should count employment effects as a net cost.

The McComb Group and Musil cite increased expenditures by tourist as a potential benefit of the Bridges project. As Stynes explains in his work “Economic Impacts of Tourism,” however, the magnitude of the benefit of tourism are likely overstated. According to Stynes, sales impacts from tourism can be misleading as “sales may go largely to buy parts from outside the region (p. 16).” Instead of merely counting all expenditures as a benefit, this analysis must isolate increases in income or value added, which are “the best measures of the economic gain to the region from tourism (p. 16).”
Tourism, however, may offer other benefits besides income or value added. The Twin Cities largest tourist attraction, the Mall of America, offers insight into potential benefits of tourism. According to Alex Schwartz’s case study of urban revitalization in downtown Minneapolis, the Minneapolis retail community expressed fear of retail substitution effects during the construction of the Mall of America, which offered nearly the same amount of retail space as downtown Minneapolis (p. 197). In its first year the mall had more than $600 million in sales. The $600 million sales, however, did not cripple the existing retail market as anticipated. The regional retail market remained intact, in part, because 30% to 40% of Mall of America customers were tourists (p. 197). Therefore, tourist expenditures made both a downtown and mega-mall retail viable. This viability offers a benefit to those that derive a benefit in the form of pride in both having the nation’s largest indoor shopping mall and a viable downtown pedestrian mall. If Tourism can make both Bridges and current upscale retail districts viable, this analysis should take into account the existence and option benefits to consumers.

Neighborhood groups have identified several costs associated with Bridges, one being gentrification. Groups fear that increasing rents and property taxes will result in displacement of current West Side residents. If displaced, residents will then have to bear relocation costs and society may have to suffer the loss of historic cultural institutions. Vigdor (2002), however, argues that gentrification of the type that would result from Bridges, where no existing housing is destroyed, does not result in displacement. Vigdor argues that original residents of gentrifying areas are often compensated for higher rents and taxes through several mechanisms: better access to jobs, better public services, and improved neighborhood quality (pp. 145-148). Vigdor’s work also shows that income
growth of original residents often outpaces the growth in housing costs (p. 164). As a result, Vigdor’s case study of Boston suggest that residents of gentrifying residents are *more likely* to remain in their neighborhood than residents of non-gentrifying areas (p. 161). In-migrants, however, may threaten long-time residents in another way. Cicin-Sain (1980) argues that a cost of gentrification of ethnic and/or racial enclaves, such as the West Side, is the loss of political representation associated with numerical concentration (Cicin-Sain 1980, p. 60).

Cicin-Sain also identifies several benefits not included in the current Bridges literature. With white-collar residents moving closer to the CBD, it is likely that transportation costs are reduced for these residents (p. 61). This benefit is acquired in terms of both time and energy savings.

In his book *Urban Renewal*, John Weicher (1972) also attempts to clearly define the costs and benefits of projects such as Bridges. For Weicher, the costs of urban revitalization include the costs of the actual project, such as surveying and planning, land clearing, infrastructure improvements, and administrative costs. Weicher also identifies several benefits of urban revitalization: more efficient land use, increased values of nearby property, and value of new construction (pp. 28-37). However, new construction, such as that proposed by Bridges, “should only be included [in a cost-benefit analysis] if [new buildings] represent a clear gain to the economy, and have no possible offsetting cost (p.37).” As Rothenberg (1967) points out, this may not be the case if working under full-employment and competitive capital market and construction market assumptions. Under these assumptions, new buildings merely represent a shit of labor, capital, and construction resources and should not be counted as a benefit (Rothenberg 1967, p. 137).
3. Methodology

Benefits:

Tourism:

The amenities offered by Bridges, including a riverfront promenade and the Mythica, and its aesthetic quality will likely lead to an increase in tourism. The magnitude of the benefit resulting from tourism depends on the number of tourists that visit annually and their total expenditure. The number of tourists that will visit Bridges, however, is unknown. Unfortunately, creating a prediction is problematic: riverfront promenade and the Mythica have yet to be built and no data exists on tourist attendance for similar destinations. The most similar locations are likely the Science Museum and Children’s museum, which host approximately 779,000 and 400,000 visitors annually (McComb 2004, p. 6-2), but no data exists on proportion of those visitors that are tourists from outside the Twin Cities region. Given the uncertainty, this study assumes that Bridges can expect between 0 and 500,000 annual visitors, of which 0 percent to 100 percent may represent a person-trip from outside the Twin Cities.

The benefit from the expenditures of these tourists is likely to be small. As pointed out by Stynes, the most sales revenue from tourism leaves the region to pay for inputs from outside the region (p. 16). For this analysis, therefore, it is assumed that all sales represent a benefit of zero (0). The only economic impact of tourism, therefore, is income. This analysis also assumes full employment (discussed in a future section); thus,
the only income effect is that from rents and profits of proprietors. A multiplier of 1 is assumed given the uncertainty of multipliers and leakage due to taxes, savings, and the likelihood that a many of the owners of shops and restaurants around Bridges will be from outside of the Twin Cities area (Stynes, p. 16). Therefore, the final model for the benefit from tourist expenditures on retail and restaurants will be:

\[
\text{Tourism Benefit} = (\text{Expenditures on Eating and Drinking}) \times (\text{Gross Profit Margin of Restaurants}) + (\text{Expenditures on Retail}) \times (\text{Gross Profit Margin of Retailers})
\]

Another benefit of tourism will be the viability of amenities, specifically the Mythica. The demand schedule for museums in the Twin Cities, however, is not known. Without knowing the demand schedule for museums, the consumer surplus acquired from another museum cannot be quantified. While this benefit cannot be quantified, its existence can be accounted for in the final analysis by indicating the magnitude of this benefit that would be necessary to change the sign of overall net benefits.

Employment:

Macroeconomic data suggests that the Twin Cities is operating at or near full employment. The concept of full employment is uncontroversial. Determining the rate of unemployment that indicates full employment, however, is quite controversial. Several macroeconomic indicators from the Twin Cities, however, do suggest the area is operating at or near full employment. The first is the unemployment rate, which is currently 4.2% in the Twin Cities Metropolitan Area (MN DEED, “Unemployment Statistics”). 4.2% is below both the state and national average. According to leading
economists Abel and Bernanke (2005), the natural rate of unemployment in the United States is likely around 4.5% to 5.5% (Abel & Bernanke 2005, 99; 451). Furthermore, job vacancy rates are very high compared to unemployment; as of December 2006 there were 6.4 job vacancies for every 10 unemployed persons (MN DEED, “Job Vacancy Survey”). A high rate of job vacancies implies a high number of workers are between jobs rather than in surplus. Also, some may be suffering structural unemployment from a skills mismatch, which will not be ameliorated with an increase in jobs. And finally, the number of minimum wage jobs has fallen dramatically, from one in five in 1998 to one in 12 in 2006, indicating that very little structural unemployment associated with a wage floor is present (Meyers & Crosby 2007). Given the data, this analysis assumes that the Twin Cities is operating at or very near full employment and that the benefit of additional jobs is negligible.

Given that the economy is at full employment, new jobs from a project are not a benefit; however, some have argued that they represent a cost from downgrade in employment. A downgrade in employment comes from either increased unemployment or decreased wages resulting from the destruction of skilled manufacturing jobs in favor of lower-paying service jobs. A downgrade effect will come only if those in skilled manufacturing jobs are unable to find similar work in other places. However, number of jobs lost from Bridges development is around 220 compared to the thousands of jobs in each affected industry (MN DEED, “OES Data Tool”). Therefore, this analysis assumes that most displaced workers will eventually find employment of a similar nature at a similar wage. Therefore, the employment effects of the Bridges project are neither a cost nor benefit to the Twin Cities.
Increased Property Values:

As articulated by Weicher (1972) and Rothenberg (1967), one benefit of urban revitalization programs is increased values of surrounding property. This analysis assumes that full-employment and competitive markets for capital and construction. To further simplify the analysis, this study assumes that the destruction of the buildings on the east side of the development does not affect the supply of buildings for industrial use. This assumption seems valid as there are only a few buildings compared to the thousands available for industry throughout the Twin Cities. Therefore, the only effect on social welfare from rising property values of the Bridges project will be the spillover effect. It is important to note that the benefit to surrounding property may be negative—it may represent a cost. If Bridges leads to greater nuisances such as increased pedestrian and street traffic or noise, the value of surrounding properties may fall.

The magnitude of this benefit is uncertain. It is impossible to ascertain with certainty how the real estate market will react to a project that does not yet exist. To estimate the magnitude of the benefit, therefore, this study will use data from projects that appear most similar in type, time, and location. To estimate this benefit, data from recent urban redevelopment projects in both Minneapolis and St. Paul, notably the 1999 construction of The Science Museum of Minnesota in downtown St. Paul and the construction of the 2001 Block E retail and entertainment complex in downtown Minneapolis, has been used.

The Science Museum and Block E were chosen for several reasons. First, data for these projects was readily available due to their recent construction. Second,
location of both projects was similar to that of Bridges, both Block E and the Science Museum are located within the CBD of their respective cities. Third, both offer amenities similar to those of Bridges. Block E offers a 15-screen, 3,600-seat cinema complex, 150,100 square feet of entertainment and retail space, a 256 room Le Meridien Hotel. The Science Museum of Minnesota is a 370,000 square foot facility on the shore of the Mississippi River that offers permanent and temporary exhibits covering a variety of subjects. By comparison, the Bridges proposal offers 450,000 square feet of retail and entertainment including cinema complex, 300,000 square feet of world cultural attractions, 335,000 square feet of office space, 1,150 residential units, and a 250-room Westin Hotel. The Science Museum is also similar to Bridges in that it converted several acres of the Mississippi shoreline for public use.

In order to estimate the potential benefit of Bridges, this analysis runs several regressions using data from Block E and the Science Museum. The basic model is:

\[
\ln(\text{Land Value}) = \beta_0 + \beta_1 D_{\text{DOWNTOWN}} + \beta_2 D_{\text{TIME}} + \beta_3 D_{\text{DOWNTOWN}} \times D_{\text{TIME}}
\]

Where:

a.) Land Value is the value of a parcel of land and

b.) \(D_{\text{DOWNTOWN}}=1\) if land parcel is in downtown area (the area likely affected by both Block E and Science Museum developments) and 0 otherwise and

c.) \(D_{\text{TIME}}=1\) if land value is from the time period after the project has been completed and opened to the public and 0 otherwise.

The model uses some 400,000 data points from pre and post-construction time periods provided by both Hennepin and Ramsey Counties.
The model uses the natural log of land values to capture percent change. Percent change is the desired dependent variable as the overall size of areas and overall value of land varies between all three projects. The model gives an expected percent change in land value, which will then be applied to the West Side—the area that will be affected if Bridges is undertaken.

The estimate created from the model may be subject to some bias. First, this model assumes that the only systematic difference in land values comes from location and time-period. If this is not the case, the results will suffer bias. The direction of bias, under or overestimation, will depend on whether land values in the area affected are systematically over or undervalued compared to the rest of the city. Second, despite their similarities, Block E and the Science Museum have several differences with Bridges that may cause underestimation. The size of the Bridges project outweighs the combination of both Block E and the Science Museum. Bridges offers nearly three times the amount of retail and entertainment space as Block E. Furthermore, Bridges offers office space and condominiums, neither of which is offered by the other projects. Finally, it is impossible to know exactly what constitutes the area affected by development. In this analysis, district within the city was used as a proxy for affected area. Districts are often self-contained due to natural and man-made barriers such as rivers or freeways. In reality, however, all districts are still accessible by others. Therefore, some simultaneous causality bias will cause systematic underestimation for the estimate.

Reduced Transportation Costs:
As identified by Cincin-Sain, development projects such as Bridges, which replace low or medium-density buildings or vacant land with high-density residential living, may reduce transportation costs in a city. Indeed, worries of urban sprawl have been a prominent concern for city planners for the last half-century. A reduction in the amount of time spent in transportation is a benefit that Bridges may offer as it will relocate residents from across the Twin Cities metropolitan area directly across from the St. Paul Central Business District.

To quantify this benefit this analysis makes several assumptions concerning the households that will occupy the residential units in Bridges. Because of the uncertainty surrounding the households that will occupy Bridges, this study assumes that they are randomly drawn from a sample of all households in the Twin Cities and that their behavior once relocated to St. Paul will resemble that of other St. Paul residents. It also assumes that since condominiums are typically marketed towards professionals, Bridges residents will make 500 commutes per year. This study also assumes that average commute times and number of residences in the Bridges project remain constant for perpetuity. These assumptions lead to the model:

\[
\text{Time saved/year} = (\text{average commute time for Twin Cities area} - \text{average commute time for the City of St. Paul}) \times \text{(number of residences)} \times \text{(average number of workers per household in the Twin Cities area)} \times (500 \text{ commutes per year}) \times \text{(median wage of workers in the Twin Cities area)}
\]

The benefit calculated for city recentralization will be an underestimation. First, Bridges units and amenities are geared at upper income individuals. Thus, using the
median wage of the Twin Cities to calculate the value of the time saved will provide an underestimate, as opportunity cost of time for Bridges residents is likely higher than the Twin Cities median. Second, this method only takes into account commutes to and from work. This analysis, therefore, does not take into account the reduced transportation time for reasons other than work, such as leisure or entertainment. Also, the model assumes commute times remain constant. As population continues to increase, however, congestion and commute time differentials are likely to rise. Finally, due to the high level of uncertainty regarding modes of transportation, this analysis does not take into account the amount of energy saved from reduced transportation distance and time.

Costs:

Gentrification:

This analysis will largely ignore relocation costs associated with gentrification. These costs are ignored because it is unclear that West Side residents will be displaced and forced to relocate. As previously mentioned, the work of Vigdor (2002) suggests that West Side residents may be more likely to remain and will bear less relocation costs than otherwise. Furthermore, in the case of the Bridges project displacement may be minimized due to natural barriers between the residential areas and the commercial/industrial area in which Bridges will be built. Also, many of the rental units closest to the Bridges project, such as those in the Torre de San Miguel and Bluff Park Homes, are subsidized. Therefore, increased rents will be paid by state or federal governments and will not result in relocation.
Costs associated with the loss of cultural bonds resulting from gentrification are also ignored. If residents do not relocate, no loss of cultural bonds will occur. If residents do eventually relocate, it still seems unlikely that cultural bonds will be broken. Latino residents from around the Twin Cities visit the West Side’s most well-known cultural patrimony: El Burrito Mercado, and the Nuestra Señora de Guadalupe Church.

The political ties and representation gained by the concentration of Latino, Asian, and working-class residents, however, may be jeopardized due to gentrification. The West Side is currently part of St. Paul’s Ward 2. Ward 2 also includes areas in downtown, the Summit-Hill Neighborhood, and the West End. These areas typically have more white residents and higher incomes. Summit-Hill, for example, is 93% white and has a median household income of $48,689 (Wilder, “Summit-Hill”). Similarly, the West End is 78% white, although it is more working class with a median household income of $34,363 (Wilder, “West Seventh”). Ward 2, therefore, is a balance between competing racial and economic interests. The influx of several thousands residents that are likely white with incomes in excess of $75,000 could greatly upset the current balance. This cost-benefit analysis, therefore, will take into account the value West Side residents place on their political representation.

The estimate for the cost of loss of political representation will come be made by examining donations of time and money to the West Side Citizens Organization (WSCO). Political representation will only be lost at the local level; therefore, this analysis will only account for preferences for local representation. WSCO is the West Side’s main vehicle for local, grass-roots representation and therefore will serve as a proxy for local political representation.
The estimate is subject to some error. First, not all political representation will be lost. New coalitions and voting blocs may arise that allow West Side residents to maintain some political representation. Second, organizations face a significant free-rider problem and are likely to underestimate the value citizens place on political representation. The magnitudes of these opposing biases are not known; therefore, it is unknown whether final estimate will be an over or underestimation.

Aesthetics:

Some of the criticism has been directed at the Bridges project on the grounds that it would eliminate an important public good—the view of the Mississippi River Valley. Current zoning laws prevent any building over 14 stories from being built in the proposed location. The Comcast building (owned by the firm developing the Bridges project) currently stands at this limit while most of the rest of the land is parking, vacant, or one-story buildings. The Bridges project would fill this space with the 30-story Westin Hotel and condominium complex. River conservation groups have claimed that these buildings would obscure the view of the Mississippi River Valley from public and private spaces. Quantifying this cost is problematic, as the views most obscured would come from public parks on the edge of downtown. These are not goods traded in a market and thus have no associated price. Furthermore, the Bridges proposes to offer a significant aesthetic public benefit. Bridges promises to offer an impressive view of buildings built in Italian-style architecture in place of previously vacant land. Bridges also promises to offer a public riverfront promenade in place of the current rocky shore lined with barges.
Neither of these claims can be fully evaluated due to lack of information. No market information exists for river valley views or for riverfront promenades. Furthermore, while river conservation groups claim that valley views would be significantly blocked; the JLT Group, Inc. insists that this is not the case. Given the uncertainty surrounding this benefit/cost, this study will ignore it altogether.

Existing Structures:

The proposed site for the Bridges site is currently filled with several buildings, parking lots, and vacant land. The parking lots and vacant land offer no opportunity costs. The Comcast building, too, offers no opportunity cost as it is owned by the JLT Group and will be integrated into the Bridges project. The structures on the East end of the site, however, house several businesses and pose an opportunity cost that must be considered.

Evaluating the opportunity costs associated with existing structures is straightforward. Building values are a matter of public record and can easily be factored into any cost-benefit analysis.

Demolition and Construction:

The largest cost of the project will be the demolition of current parking lots and buildings and construction of the project. The JLT Group, the firm that would oversee the Bridges construction, estimates this total cost at $1.5 billion. This investment represents a significant opportunity cost. Given competitive capital and construction
markets and full employment, the inputs used in construction of Bridges could be applied in other places in the Twin Cities.

Public Service Costs:

The addition of several thousands residents and visitors to the Bridges area will result in an increase in public service costs. High-density living is associated with needs for more increased infrastructure maintenance and other public services. The McComb Group has estimated the annual cost of these services in their report. Their report, however, uses arbitrary 10-15% adjustment of the per-residence and per-square foot public service costs. This study will use similar methodology of calculating total costs based on their per residence and per square foot calculations of public service costs. This study, however, will make no adjustments, as no literature exists that from which to judge a proper adjustment. Because no adjustments are made, the estimate is an overestimate—high-income commercial and residential units are likely incur fewer public service costs. The final model is:

\[
\text{Total public service costs} = (\text{per residence cost}) \times (\text{number of residences}) \\
+ (\text{per square foot of commercial space cost}) \times (\text{number of commercial square feet})
\]

Discount Rates:

Many of the costs and benefits of the Bridges project will be accrued annually over time. To make a meaningful comparison these costs and benefits should be discounted or both sides will increase infinitely. The use of any social discount rate,
however, is subject to controversy: the lower the discount rate the more favorable the analysis will be to future benefits. Discount rates are calculated by several methods from different capital markets. To avoid controversy, this analysis calculates cost and benefits using both 1% and 5% discount rates, the upper and lower bounds of discount rates from all methods according to Boardman et al (2006).

To simplify discounting and all calculations, this study assumes all costs and benefits occur at the beginning of the year. The JLT Group, Inc. estimates construction time at two years. Therefore, this study assumes all benefits begin at the beginning of the third year and all initial costs occur at time zero, i.e. now.

4. Results

Fig. 1: Estimated Benefits/Costs of Bridges of Saint Paul with 1% Discount Rate

(All values are in 2007 dollars)

<table>
<thead>
<tr>
<th>Benefit/Cost</th>
<th>Magnitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased Income from Tourism</td>
<td>$0 to $426,455,445.55</td>
</tr>
<tr>
<td>Increase in Property Values</td>
<td>$245,679,422.19</td>
</tr>
<tr>
<td>Reduced Transportation Time</td>
<td>$73,547,244.22</td>
</tr>
<tr>
<td>Loss of Political Representation</td>
<td>-$2,659,485.15 to -$3,168,760.40</td>
</tr>
<tr>
<td>Existing Structures</td>
<td>-$3,019,838.27</td>
</tr>
<tr>
<td>Construction</td>
<td>-$1,500,000,000</td>
</tr>
<tr>
<td>Public Service Costs</td>
<td>-$47,700,544.55</td>
</tr>
<tr>
<td><strong>Net Benefit</strong></td>
<td><strong>-$1,234,662,477 to -$807,697,756</strong></td>
</tr>
</tbody>
</table>
Fig. 2: Estimated Benefits/Costs of Bridges of Saint Paul with 5% Discount Rate

(All values are in 2007 dollars)

<table>
<thead>
<tr>
<th>Benefit/Cost</th>
<th>Magnitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased Income from Tourism</td>
<td>$0 to $82,041,904.76</td>
</tr>
<tr>
<td>Increase in Property Values</td>
<td>$236,320,206.11</td>
</tr>
<tr>
<td>Reduced Transportation Time</td>
<td>$14,149,088.89</td>
</tr>
<tr>
<td>Loss of Political Representation</td>
<td>-$511,634.29 to -$609,609.43</td>
</tr>
<tr>
<td>Existing Structures</td>
<td>-$3,019,838.27</td>
</tr>
<tr>
<td>Construction</td>
<td>-$1,500,000,000</td>
</tr>
<tr>
<td>Public Service Costs</td>
<td>-$9,176,676.19</td>
</tr>
<tr>
<td><strong>Net Benefit</strong></td>
<td><strong>-$1,262,336,829 to -$1,177,177,926</strong></td>
</tr>
</tbody>
</table>

The quantifiable net benefits for the Bridges project are listed above. The overall net benefits, however, depend on several intangibles. Specifically, the benefit to museum consumers, the benefit derived from the aesthetics of Bridges, and the cost associated with a blocked view of the Mississippi River Valley have not been considered. The sum of these benefits and cost, however, would have to between $807,697,756 and $1,234,662,477 if using a 1% discount rate and between $1,177,177,926 and $1,262,336,829 if using a 5% discount rate to change the final policy suggestion. A sum of this magnitude for the listed benefits seems unlikely.

5. Conclusion:
The results show an overall negative effect on social welfare of Bridges regardless of discount rate and the likelihood that intangibles could shift net benefits seems remote; therefore, it seems that the best course of action for Saint Paul is to deny the proposal for the Bridges of Saint Paul. Bridges’ costs outweigh its benefits for several reasons. First, costs are extremely high due to its behemoth size. Its size means construction costs alone amount to around $1.5 billion dollars. The Twin Cities economy does not have enough surplus labor, capital, or materials to justify a project of that size. Furthermore, the amenities offered by Bridges are not sufficiently unique to generate sizable spillover or tourism effects. The addition of Bridges does not seem likely to substantially increase social well-being considering the Twin Cities area already has upscale retail and entertainment options. Despite having net costs, however, the Bridges development could possibly be revamped to create a project with net benefits.

It is likely that a new proposal for Bridges could be developed that offered net benefit to society. The site proposed for Bridges offers little opportunity costs and some of the benefits of the project, such as city recentralization, are large. With its current decision-making process, however, it is unclear whether the city would accept a new proposal that stood to increase social welfare. The Planning Commission made the right decision in blocking the current incarnation the Bridges project, but did so for the wrong reasons. The Planning Commission blocked Bridges not by denying it a TIF subsidy, but rather by refusing to change zoning ordinances. Given the transitional nature of the area and the possible benefits of high-density living; however, changing zoning ordinances may increase net social welfare in the Twin Cities. Any new proposal should undergo cost-benefit analysis in order to better inform policy-makers of its potential effects on
social welfare. Unfortunately, some of the potential costs and benefits of a new development are intangible or uncertain. Further research, therefore, may be warranted for the cost-benefit analysis of any future proposal.

In order to make an informed decision based on cost-benefit analysis for a future proposal, policy-makers should commission further research in several areas. The effects of tourism provided in this analysis are a very rough estimate; research should be conducted on the likely number tourists for any new proposal. Second, more data on likely spillover effects should be collected. The data used to estimate spillover effects comes from only two projects that provide only a rough approximation of possible effects. A better cost-benefit analysis would use data from more projects whose size and market conditions better approximate the Bridges project. Third, research should be conducted on the possible benefits on energy savings due to reduced travel time from city recentralization. Given the high costs of fuel, this benefit could prove quite large. Finally, researchers should attempt to fully quantify the effects of large building on the view of Mississippi River Valley.

While cost-benefit analysis need not be the end-all of the decision-making process, it is a valuable tool for comparing competing claims over time. This study has aspired to provide a road map for future policy decisions by the City of Saint Paul. The techniques used aim at providing more and better information for policy-makers. Hopefully, with more information policy-makers will be able to better anticipate all effects, intended and unintended, of a specific policy. Armed with the tool of cost-benefit analysis, policy-makers are in a better position to achieve the center goal of policy: improving the well-being of society as a whole.
Appendix A

Estimation of Benefits
(All values are in 2007 dollars unless noted)

Tourism:

Tourist Expenditures:

   Eating and Drinking: $92.03/person (McComb, p. 3-11)
   Retail (Excluding restaurants and gas stations): $31.41/person (McComb, p. 3-11)

Number of Tourists: 0-500,000

Annual Tourist Expenditures:

   Eating and Drinking: 0-$46,015,000.00
   Retail: 0-$15,705,000.00

Gross Profit Margin:

   Restaurants: 8.2% (Yahoo!, “Restaurants”)
   Specialty Retail: 3.4% (Yahoo!, “Retail”)

Income:

   Restaurants: 0-$3,773,230
   Retail: 0-$533,970

   Total: 0-$4,307,200

Total Increase in Income with 1% Discount Rate (Upper Bound):

$4,307,200/(1-1/1.01) – $4,307,200- $4,307,200/(1.01) = $426,455,445.545
Total Increase in Income with 5% Discount Rate (Upper Bound):

$4,307,200/(1-1/1.05) – $4,307,200 - $4,307,200/(1.05) = $82,041,904.76

**Increased Property Values:**

Model:

\[ \ln(\text{Land Value}) = \beta_0 + \beta_1 D_{\text{DOWNTOWN}} + \beta_2 D_{\text{TIME}} + \beta_3 D_{\text{DOWNTOWN}} \times D_{\text{TIME}} \]

Where:

a.) Land Value is the value of a parcel of land and

b.) \( D_{\text{DOWNTOWN}} = 1 \) if land parcel is in downtown area (the area likely affected by both Block E and Science Museum developments) and 0 otherwise and

c.) \( D_{\text{TIME}} = 1 \) if land value is from the time period after the project has been completed and opened to the public and 0 otherwise.

**Fig. 3: Regression Results for Block E Project**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>11407.7609</td>
<td>3</td>
<td>3802.58695</td>
<td>215787</td>
</tr>
<tr>
<td>Residual</td>
<td>301999.829215783</td>
<td>1.39955339</td>
<td>F( 3,215783)</td>
<td>2717</td>
</tr>
<tr>
<td>Total</td>
<td>313407.59215786</td>
<td>1.45240002</td>
<td>R-squared</td>
<td>0.0364</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Adj R-squared</td>
<td>0.0364</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Root MSE</td>
<td>1.183</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ln(landvalue)</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>T</th>
<th>P&gt;t</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>time</td>
<td>.2684494</td>
<td>.0052867</td>
<td>50.78</td>
<td>0</td>
<td>.2580876 - .2788111</td>
</tr>
<tr>
<td>downtown</td>
<td>-.6063748</td>
<td>.0143109</td>
<td>-42.37</td>
<td>0</td>
<td>-.6344239 - .5783258</td>
</tr>
<tr>
<td>interaction</td>
<td>-.2596703</td>
<td>.0197629</td>
<td>-13.14</td>
<td>0</td>
<td>-.2984052 - .2209354</td>
</tr>
<tr>
<td>_cons</td>
<td>9.947579</td>
<td>.0037483</td>
<td>2653.90</td>
<td>0</td>
<td>9.940233 - 9.954926</td>
</tr>
</tbody>
</table>

Holding place constant in downtown, the percent change from one period to another is:

\((\beta_2 + \beta_3) = .2684494 - .2596703 = 0.87791\%\)
### Fig. 4: Regression Results for Science Museum

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs = 139341</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>2841.13153</td>
<td>3</td>
<td>947.043845</td>
<td>F( 3,139337) = 1567.50</td>
</tr>
<tr>
<td>Residual</td>
<td>84183.85139337</td>
<td>.604174412</td>
<td>Prob &gt; F = 0.0000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>87024.9816139340</td>
<td>.624551325</td>
<td>R-squared = 0.0326</td>
<td></td>
</tr>
</tbody>
</table>

**Model**: 2841.13153 on 3 and 139337 degrees of freedom.

**Residual**: 84183.85139337 on 139337 degrees of freedom.

**Total**: 87024.9816139340 on 139337 degrees of freedom.

**R-squared**: 0.0326

**Adj R-squared**: 0.0326

**Root MSE**: 0.77729

<table>
<thead>
<tr>
<th>Inlandvalue</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>downtown</td>
<td>-1.69101</td>
<td>.0291181</td>
<td>-58.07</td>
<td>0</td>
<td>-1.74808  -1.63394</td>
</tr>
<tr>
<td>time</td>
<td>-.0460852</td>
<td>.0041909</td>
<td>-11.00</td>
<td>0</td>
<td>-.054299  -.937871</td>
</tr>
<tr>
<td>interaction</td>
<td>.8297414</td>
<td>.0380813</td>
<td>21.79</td>
<td>0</td>
<td>.7551027  .90438</td>
</tr>
<tr>
<td>_cons</td>
<td>9.887141</td>
<td>.0029548</td>
<td>3346.08</td>
<td>0</td>
<td>9.881349  9.892932</td>
</tr>
</tbody>
</table>

Holding place constant in downtown, the percent change from one period to another is:

\[ (\beta_2 + \beta_3) = -0.0460852 + 0.8297414 = 78.36562\% \]

Total Expected Benefit from Bridges = (Total value of land in West Side) x (percent change expected) = ($313,131,200) x (78.36563%+0.87791%) = $248,136,216.41

Total Benefit (1% Discount rate):

\[ \$248,136,216.41/1.01 = \$245,679,422.19 \]

Total Benefit (5% Discount rate):

\[ \$248,136,216.41/1.05 = \$236,320,206.11 \]

**Reduced Transportation Time**:
Average commute time Twin Cities: 24.1 minutes (Metropolitan Council Office of Research)

Average commute time City of Saint Paul: 21.0 minutes (US Census Bureau)

Average Workers per household: 1.4 (Metropolitan Council)

Number of Residential Units: 1,150 (Bridges of Saint Paul)

Median Wage (Twin Cities): $17.86/hour (MN DEED, “OES Data Tool”)

Annual Reduction in Transportation Costs:
(1.4 workers/household) x (1,150 households) x (500 commutes/worker) x (3.1 min/commute) x (1 hour/60 min) x ($17.86/hour) = $742,827.17

Total Reduction in Transportation Costs with 1% discount rate:
$742,842.17/(1-1/1.01) – $742,827.17 - $742,827.17/(1.01) = $73,547,244.22

Total Reduction in Transportation Costs with 5% discount rate:
$742,842.17/(1-1/1.05) – $742,827.17 - $742,827.17/(1.05) = $14,149,088.89
Appendix B

Estimation of Costs
(All Values are in 2007 dollars unless noted)

Loss of Political Representation:

West Side Citizens Organization (WSCO) annual donation:

- $4,000-$5,000 in monetary donations from citizens
- 2hrs/month from 8-20 members of six committees
- 4hrs/month from 21-person board
- 2hrs/year from 40 election-day volunteers

\[(2 \times 12 \times 8-20) + (4 \times 12 \times 21) + (2 \times 40) = 1280-1568 \text{ hours/year (Buffington)}\]

Median wage: $17.86/hour (MN DEED, “OES Data Tool”)

\[($17.68/\text{hour}) \times (1280-1568 \text{ hours/year}) = $22,860.80-28,004.48\]

Total donations to WSCO: $26,860.80-32,004.48

Total Cost Upper Bound (1% Discount Rate):

\[\frac{$32,004.48}{(1-1/1.01)} - $32,004.48 - \frac{$32,004.48}{1.01} = \$3,168,760.40\]

Total Cost Lower Bound (1% Discount Rate):

\[\frac{$26,860.80}{(1-1/1.01)} - $26,860.80 - \frac{$26,860.80}{1.01} = \$2,659,485.15\]

Total Cost Upper Bound (5% Discount Rate):

\[\frac{$32,004.48}{(1-1/1.05)} - $32,004.48 - \frac{$32,004.48}{1.05} = \$609,609.43\]

Total Cost Lower Bound (5% Discount Rate):

\[\frac{$26,860.80}{(1-1/1.05)} - $26,860.80 - \frac{$26,860.80}{1.05} = \$511,634.29\]
Existing Structures:

$3,019,838.27 (McComb, p. 1-8)

Construction Costs:

$1,500,000,000 (Bridges of Saint Paul)

Public Service Costs:

Total annual public service costs = (per residence cost) x (number of residences) + (per square foot of commercial space cost) x (number of commercial square feet)

Total annual public service costs = ($309.37 per residence) x (1,150 residences) + ($.28 per square foot) x (450,000 square feet) (McComb 9-4)

Total annual public service costs = $481,775.50 per year

Total public service costs with 1% discount rate:

$481,775.50/(1-1/1.01) – $481,775.50- $481,775.50/(1.01) = $47,700,544.55

Total public service costs with 5% discount rate:

$481,775.50/(1-1/1.05) – $481,775.50- $481,775.50/(1.05) = $9,176,676.19
References


Buffington, Sam. Personal Interview. 10 April 2007.


Metropolitan Council Office of Research. “State of the Region 2007: Regional Economic Indicators.”


