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RE: Waterfront Seattle LID Special Benefits Report – File Ref: 19-0101 – November 18, 2019
Authored by ABS Valuation.

Dear Mr. Lutz,

You requested me to "assess whether Mr. Macaulay and team have properly applied your and related studies in the City's study, whether the benefit areas and assigned special benefits are supportable or speculative, and how, in the absence of a site-specific study of these proposals, you would apply the information to be included in your new book." My comments are arranged under eight headings.

Updated material

The Appraiser (Mr. Robert Macaulay) based his use of my work on an article published in the *Journal of Leisure Research* (JLR) in 2001[1]. Since its appearance, this article has been cited in 335 other articles published in the scientific literature. The high citation rate suggests it has been viewed as a foundation paper upon which other economists and social scientists have built. The appraiser also referenced that it was "updated in 2014." He does not cite a reference for the 2014 update, and I am unaware of such an update. I did publish a book in 2004 addressing the same issue.[2] I assume that is the update to which he is referring. That book incorporated the material from the JLR publication and did not update it. It was written in non-scientific language, because it was targeted at a professional rather than a scientific audience.

The Appraiser (p.45) correctly cites the 2001 article as concluding, "A positive impact of 20% on property values abutting or fronting a passive park area is a reasonable starting point guideline" (p.29). However, the Appraiser did not note that this conclusion was preceded by an important qualification: "A definitive generalizable answer to [the magnitude of the proximate effect] is not feasible given the substantial variation in the size, usage and design of park lands in the studies and the disparity in the residential areas around them which were investigated… If it is a heavily used park…then the proximate value increment may be minimal on abutting properties but may reach 10% on properties two or three blocks away" (p.29).

In 2020, together with a co-author, I updated the 2001 JLR article (51(2), 127-146). Since the new findings were published only a few months ago,[3] obviously, the Appraiser did not have access to these updated findings. However, if he had contacted me, I would have made the paper available to him. It was first submitted to JLR for review in November 2018 and after changes made in response to suggestions offered by expert reviewers, it was published online on August 12, 2019.

The 33 studies located in the scientific literature that addressed this issue which we reviewed were much more accurate than those reviewed in the earlier article, reflecting five methodological developments that emerged around the start of the new millennium: Hedonic

models became more robust; statistical tools associated with hedonic analyses were more sophisticated; Geographic Information Systems enabled distance to be measured along road networks rather than straight lines; electronic databases from Multiple Listing Services enabled larger samples to be used; and market sales rather than appraised values were used. As a result of these improvements our updated review concluded:

> When the highest premiums reported in each study were tabulated, an approximately equal number were assigned to each of three categories: less than 4%, 5%-9%, and 10% or more. This suggests the recommendation from the 2001 review that 20% on property values abutting or fronting a passive park area as a reasonable starting point guideline was overly generous. A more appropriate starting point guideline on this kind of property would appear to be 8%-10% (p.15).

Differences in Types of Properties.

The studies reviewed in both the 2001 and 2020 JLR publications predominantly used single-family homes in their samples. This is different from the mix of residential units in the LID which are comprised almost exclusively of apartments and condominiums.

Our 2020 JLR review concluded:

> The percentage premium associated with multifamily properties or small lots was higher than that associated with single-family or large lot properties. This finding was consistent in all nine studies that addressed this issue. It is explained by privately owned yard space associated with single family homes serving as a partial substitute for public parks (p.147).

Backyards in single family homes frequently contain such items as playground equipment, exercise equipment, decks with tables and chairs, barbeque facilities, basketball hoops, and grass spaces for Frisbee, soccer, tag or whatever. These amenities facilitate socialization and entertainment for family and friends. For many, they become the center of home and neighborhood life. In essence, in some homes the backyard substitutes for, and replaces, some of the facilities typically incorporated into neighborhood parks.

Hence, a case can be made that the premiums for apartments and condominiums in the LID are likely to be larger because they have no backyards, and the availability of a proximate park compensates for this lack of private space.[3] However, the LID “park improvements” are best characterized as a parkway not a park. The “park opportunities” do not appear to incorporate these types of facilities or to be designed to perform this function. Rather, it appears designed as an attractive corridor to facilitate exercise, and exposure to the ambiance of water views.

The Appraiser provides a separate spreadsheet for “All other LID Commercial Properties.” It is unclear to me if the JLR review was used in ascertaining premiums for these 1,051 properties but, clearly, it is not appropriate to extrapolate its findings for deriving values for high rise office buildings, retail uses, hotels et al.

The exemplar demonstrating the impact of rejuvenated or new park land on commercial values was Bryant Park in New York City. Attached as an appendix to this report is a description of its rejuvenation that I included in my most recent book which the publishers tell me will be released next month.[4]

The success of the rejuvenation of that 8-acre park in the early 1990s which generated substantial increases in commercial office rents for the surrounding properties, led many other cities to emulate it. However, almost all the premiums associated with those parks are captured by properties directly fronting on to the parks, and they do not extend much beyond that immediate area. This is reflected in the narrow geographic area of the Business Improvement Districts that typically are established to fund and subsequently maintain such parks. It appears the Appraiser has extended the range for commercial property assessments far beyond those immediately abutting the LID "park improvements."

Are the "Park Improvements" Best Characterized as a Park, Greenway or Parkway?

The Appraiser's suggestion that the green space in the LID is a "park" is a misrepresentation. Although the area incorporating the "park improvements" appears to be approximately 36 acres, two-thirds of that 36 acres appears to be hardscape. This suggests the appropriate designation is "parkway" rather than "park." This distinction is critical, because the JLR review to which the Appraiser frequently refers pertained exclusively to "parks and open space." It did not refer to parkways or greenways. The importance of the distinction stems from the empirical literature that shows the premiums from parks on property values are likely to be much higher and to extend for a greater distance, than those from parkways or greenways.

In the narrative relating to his valuation of residential condominiums, the Appraiser makes it clear he is referring to premiums associated with parks rather than parkways or greenways. For example, "The research presents clear indications that well-designed park and street improvement projects have a positive effect on surrounding neighborhoods and property values" (p.82).

The Appraiser appears to implicitly acknowledge the distinction between parks, parkways and greenways, because three of the six projects he examined to "compare various project components" were parkways or greenways, rather than parks. (Tom McCall Parkway, Rose Kennedy Greenway, and Embarcadero Parkway).

In his exposition of the tools used in his valuation analysis, the Appraiser states:

> As mentioned throughout, increases in market value of individual parcels result primarily from enhanced location (improved pedestrian connections, open space, streetscapes) which, in turn, enhances the aesthetic appeal of the waterfront and a large segment of the downtown CBD (p.59).

Later, in his valuation summary describing the impact of the LID he states:

> With the LID in place, there is a new waterfront promenade, consisting of continuous open space on the west side of the waterfront corridor from Pine Street to South

> Washington Street, with enhanced landscaping and streetscapes. Pedestrian accessibility to the waterfront and view opportunities are greatly improved (p. 80).

Parks are conspicuously absent from these descriptions. Rather, they describe beautification of a highway with an accompanying well-landscaped promenade.

The genesis of American parkways lies in the tree-lined boulevards of Paris that were established in the 18th and 19th centuries. They were designed for "promenading." The belief was that pedestrian walkable areas would add value to proximate residences.[5] They were transposed to the U.S. by Olmsted and Vaux, the highly influential landscape architects who were responsible for many of the pioneering large urban parks in the U. S. For the most part, they preferred the term "parkways" to "boulevards" but they used them as synonyms.

Their parkways were intended to serve either as a means of approach to a large park or as a connection between large parks. Parkway was defined as "a road that is of picturesque character bordered by trees and shrubs,"[6] and they were regarded as "narrow informal elongations." Commercial vehicles were barred, and the intent was to make driving through them a recreational experience.[7] This meant that most of the benefit was conferred on those driving along the artery, and on those fronting on it who enjoyed views and exposure to the intensive landscaping.

Parkways were designed for through traffic and all intersections were either bridged or tunneled under the parkways. The central drives were flanked with generous 30-35-foot pedestrian medians. Parallel 25-foot side roads for local and commercial traffic were constructed along with sidewalks. All elements of a parkway were separated by two rows of trees. Although it does not possess all these elements, these descriptions appear to be reasonable representations of the LID "park improvements."

Importantly, in the context of the LID, it was believed that added real estate value from parkways was confined to properties directly fronting onto them. Kansas City was renowned for its system of parkways. In a report to his Board of Park Commissioners in 1910, George E. Kessler, the superintendent of parks, who was a highly regarded national figure in the parks field, stated: "Conservative real estate men [in Kansas City] estimated the present value of the grounds fronting on the Kansas City boulevards, less building improvements. They compared this valuation with that of ground fronting adjacent streets which were not on boulevards. They found that the difference in favor of the boulevards real estate was $250,000 more than the entire cost to taxpayers of all the parks and boulevards embraced in the system."[8]

The distinction between a highway and a recreational parkway disappeared from the U.S. urban infrastructure vocabulary after the Second World War. Today, when the term "parkway" is adopted, the intent is generally to upgrade perceptions of an artery's status from an ordinary city street by providing more comprehensive landscaping and, consequently, conferring on it the image properties associated with the word "parkway."

In the last two decades of the 20th century, the term "greenways" entered the urban infrastructure lexicon. Greenways are not wide swaths of land like parks, rather they are relatively narrow

corridors that have two major functions: (i) to link and facilitate hike and bike access between residential areas and places of employment and/or parks; and (ii) to provide opportunities for linear forms of outdoor recreation (e.g., hiking, jogging, bicycling, inline skating, and ordinary walking).

Their popularization stemmed from the 1987 report of the President's Commission on Americans Outdoors. The Commission recommended communities establish "greenways," which they defined as "corridors" that "provide access to open spaces close to where they live." The Commission conceptualized these greenways as "fingers of green that reach out from around and through communities all across America" (p. 142).[9] The first extended work exploring the potential of greenways followed soon after and defined greenways as "linear open spaces…converted to recreational use" (p. 1).[10]

Most of the enhanced value of parks derives from people's willingness to pay a premium to be proximate to the tranquility, peace and psychological relaxation many parks provide. In contrast, enhanced property values associated with greenways are likely to come from access to a trail, rather than from views of nature or open space. It is their functionality or activity potential that is likely to confer most added value, rather than the panorama and ambiance associated with parks.

In my 2004 *Proximate Principle* book[2], the "plug and chug" estimation process from which the Appraiser garnered the blocks measure that is described in the following section, I asserted:

> Results from the limited number of empirical studies available at this point indicate that while trails are unlikely to exert a negative impact on proximate values, there is insufficient evidence to suggest they have a positive impact. The dominant sentiment is that trails have no impact on property values, so no proximate premium is recommended for them here (p.11).

While the Appraiser elected to use the blocks measure from the "plug and chug" "best guess" estimation procedure, he chose not to use the trails findings. These are not as accurate a descriptor for the LID as "parkway" but are a closer depiction of the "park improvements" than parks.

Again, in a recent article, a co-author and I updated those greenway trail 2004 results. We reviewed 20 studies which had been published since 1999 that measured the impact of greenways and trails on proximate property values using hedonic analysis. None of these greenways resembled the LID in having a major highway running through them. Many of them were "rails to trails" projects which transformed disused railroad tracks into hike and bike trails. Our review of greenway trails concluded: "The results indicate that a small positive premium of between 3% and 5% was the most widespread outcome for single-family homes located proximate to a trail" (p. 97).[11]

Distance for which the "Park Improvements" Impact Property Values.

The 2001 JLR study concluded:

> The diversity of the study contexts makes it non-feasible to offer a generalizable definitive answer to the question concerning the distance over which the proximate impact of park land and open space extends. However, there appeared to be wide agreement that it had substantial impact up to 500 feet and that in the case of community sized parks it extended out to 2,000 feet (p. 29).[1]

The 2020 JLR updated review similarly concluded: "This synthesis endorsed a conclusion from the 2001 review that high premiums generally were limited to properties within 500 feet, but for large parks they extended out to 2,000 feet" (p. 142).[3]

Both the JLR 2001 and 2020 scientific papers reported the range of impacts in feet. They made no reference to number of blocks. However, the Appraiser discarded the use of feet and replaced it with "blocks." He did that throughout his report, which allows the reader to incorrectly infer it was a synonym for the feet measure.

His blocks measure stems from my 2004 *Proximate Principle* book, which was written for a non-science, professional audience.[2] In that volume, I included an approximation "plug and chug" simplified procedure, based on the empirical findings, that non-scientists could adopt for use in their communities. I explained it was a template: "it is emphasized that this approach only offers a rather crude 'best guess.'" The template suggested, "The area of proximate impact of a park should be limited to 500 feet or three blocks" (p. 9). My intent in using the three-block term was to reify the 500 feet range metric. The magnitude of 500 feet is relatively difficult to grasp, whereas three blocks is easily recognizable. It reflected the approximate distance in most of the contexts in which the studies in our review were undertaken. It was anticipated the block synonym would be more understandable and easier for non-scientists to grasp. The intent was to offer a synonym for 500 feet, not an alternative to it. Clearly, if the block measure is applied to the 300-foot blocks that are more typical in the LID than the intended 150-feet distance, it extends the impacted area far beyond the 500-feet distance reported in the JLR studies.

In his interpretation of that statement ("The area of proximate impact of a park should be limited to 500 feet or three blocks"), the Appraiser states:

> "In terms of direct residential impact, John Crompton's ongoing studies into the impact of parks on property values have been used by municipalities across the country. Crompton's "proximate principle" represents a "capitalization" of park land into increased property values and a widening of the tax base. One major finding based on his results deals with the location and proximity of property to the park improvements—both in urban and suburban environments:
>
> - 75% of the benefit from a park is captured within 500 feet, or three blocks.
> - The remaining 25% of the benefit is likely dissipated over a 500 to 2,000-foot range, or 4 to 12 city blocks" (p. 83 & p. 46).

In his first bullet, the Appraiser inserts a comma between the two measures, "…within 500 feet, or three blocks." This comma was added by the Appraiser. It was not in the original Crompton manuscript. This insert reinforces an inference that the two measures are alternatives, whereas

without the comma they are more likely to be accurately recognized as synonyms which was the intent.

The Appraiser throughout his report, disregarded the 500 and 2,000-feet measures and used only the blocks measures for the LID assessments. In addition to the comma insert, the above statement misrepresents my work in six ways:

- It inappropriately applied findings from our review of parks to a parkway.
- The parks review was based on residential dwellings, predominantly single-family homes, and the Appraiser inappropriately extended the findings to include commercial buildings.
- At my request, a GIS map was produced using the network metric showing the LID boundaries and proximate distances to the "park improvements" and it is attached to this report as appendix 2. It shows that 500 feet distance from the "park improvements" is either one or two blocks. Hence, using the block measure, rather than the feet measure that was reported in the JLR review, has the effect of inappropriately extending the LID impact significantly beyond that which the park study indicated (even if it was legitimate to use the park review's findings).
- The Appraiser's extension of the impact distance to 12 blocks was an incorrect interpretation of our work for two reasons.
    - First, our conclusion that often a small increment of impact extended out to 2,000 feet applied to "community parks." The definition of community parks in the Seattle Parks Department Master Plan is: "Community parks satisfy the recreation needs of multiple neighborhoods. They generally accommodate group activities and recreational facilities not available at neighborhood parks. They may have athletic fields, large open spaces, paths, benches, natural areas, and restrooms. Community parks are accessible by arterial or collector streets, and usually include off-street parking" (p. 97)[12]. The enhanced array of amenities included in community parks accounts for them often adding a small increment of value to properties within 2,000 feet. Clearly, the proposed "park improvements" in the LID do not incorporate a comparable array of amenities and so, use of the 2000-feet metric is inappropriate.
    - A second incorrect interpretation was the failure to recognize that all the studies reviewed in our most recent JLR paper used network analysis to measure impact distance. This means the 2,000 feet refers to distance along road networks, not "as the crow flies." When the distance from the "park improvements" is measured along roadways, the range of impact is much smaller than is shown by the current LID parameters.
- The GIS map shows the LID includes corridors extending east across Alaskan Way up to Western Ave and the Pike Place Market vicinity. Clearly, these are not "park improvements." They bear no relationship to the park sites that constituted the samples studied in the JLR reviews.

These inaccurate interpretations of our work resulted in the Appraiser inappropriately concluding (referencing a streetscape study as well as our JLR review): "Both studies indicate a geographical radius of benefit within 12 blocks, but most significantly within the first three blocks" (p.56).

Use of the Park Quality Scale.

The Appraiser states: "Based on Crompton's park rating scale and considering the existing waterfront amenity, the Waterfront Seattle project would increase the quality rating from above average to excellent, which indicates an average increase in value of 5% for condominiums within a three-block radius" (p.56). This is a misapplication and misinterpretation of my work. The reality of the Appraiser's conclusion is that it is based on his judgement, experience and expertise; it does not derive from any of my publications or from scientific empirical findings.

In the 2004 *Proximate Principle* book a "Park Quality Scale for Determining Proximate Principle Premiums" was included, as part of my "plug and chug" approximation procedure. The Appraiser reproduces it in his report (p.46) as shown below.

Park Quality Scale for Determining Proximate Premiums

Unusual Excellence	A signature park; exceptionally attractive; natural resource based; distinctive landscape and/or topography; often mentioned in sales advertisements for nearby properties; well maintained; genuine ambiance; engenders a high level of community pride and "passionate attachment."
Above Average	Natural resource based; has charm and dignity; regarded with affection by the local community; pleasant; well maintained.
Average	Rather nondescript; not really "noticed" by the local community; adequately maintained; no distinguishing features
Below Average	Sterile; absence of landscaping or trees; athletic fields with noise, lights, congestion; intensive use
Dispirited, Blighted	Dilapidated, decrepit facilities; broken equipment; unkempt, dirty; unofficial depository for trash; noisy; undesirable groups congregate there; rejected and avoided by the community

Immediately following the Park Quality Table in the Appraiser's report, his narrative continues as follows (p.47):

- Condominiums within a three-block radius typically experience increases in property value of:

Quality of Park	Distance	Green Premium
Excellent-Average	1 block	16-20%
Excellent	1-3 blocks (500ft)	15%
Above Average	1-3 blocks (500ft)	10%

Average	1-3 blocks (500ft)	5%
Poor	1-3 blocks (500ft)	-5%

In the case of the Waterfront Seattle project, it is important to consider that there is an existing waterfront amenity; the current waterfront area can be rated as average to above average since it provides a unique public amenity. However, when considering the waterfront area as extending east across Alaskan Way up to Western Avenue and the Pike Place Market vicinity, the rating declines to merely average due largely to the poor connectivity with city streets. The existing alleys, stairwells, and dim lighting areas contribute to an undesirable atmosphere, especially at night, despite the active foot traffic and tourist-oriented venues along the waterfront. The reader is referred to the City-provided documents in the addenda volume for further discussion and descriptions of existing or "without LID" conditions.

With the project elements completed, the area will be upgraded to excellent, which indicates an average 5% increase in condominium values situated within three blocks of the improvements/new amenities. Note that this is an average based on empirical data and is utilized for background information when analyzing the subject project elements.

The above article sets up a good basis for the argument that a larger, linear, well-maintained public park that attracts active users – such as the Seattle waterfront park – will likely have a positive impact on residential property values and that the most benefit is evident within a two- to three- block radius.

There are three concerns relating to the Appraiser's table:

1). The columns in the "increased property value" table are different from those used in the Park Quality Scale which the Appraiser purports to represent:

- Under the "Quality of Park" heading, the Appraiser uses different ratings than are used in the Scale. The source, rationale, criteria and definitions of the descriptors that comprise the new rating scale are not explained. The new scale is not derived from the Quality of Park Scale. Indeed, there appears to be no connection between them.
- Under the "Distance" heading he introduces a new category "1 block." No rationale is provided for it. The subsequent categories refer to the 1-3 block measure which he parenthetically infers equate to 500ft, but in fact in the LID context a three-block measure significantly exceeds that range.
- The "Green Premium" heading in the third column is a new term that the Appraiser has introduced. The source of the percentage premiums used in this column is not explained. They seem to be entirely arbitrary. They do not come from the original table in the 2004 *Proximate Principle* publication which stated:

  > "Based on the results reported in the monograph, the suggested premiums applied to all single-family home properties within the 500-foot proximate area for each of the three highest categories shown the Table are;

Unusual excellence: 15%
Above average: 10%
Average: 5%"

Clearly, the premiums suggested by the Appraiser are much higher than those emanating from the 2004 publication from which he inappropriately infers they are derived.

2). The definition descriptors in Crompton's Park Quality Scale were developed specifically for parks. They do not fit the context of the LID parkway. To use them in this way is like comparing the tastes of artichokes and apples. If the Appraiser required a similar scale for the parkway to guide his judgements, then he needed to develop a scale that fits the LID context. Clearly, on its face the scale lacks validity.

3). With a co-author, I recently finished an update of the 2004 *Proximate Principle* book that addresses the impacts of physical amenities on property values. Again, it is targeted at a non-scientific audience. It will be released by Sagamore/Venture Press in the next few weeks.[4] It updates the "plug and chug" numbers. In this revision, the suggested premiums on single-family homes within the 500-foot proximate area for each of the three highest categories shown in the Park Quality Scale table are:

Unusual Excellence: 10%
Above Average: 5%
Average: 3%.
These much smaller percentages reflect the more accurate lower premiums reported in the post-millennium studies.

In addition to concerns with the table, there are three concerns with the narrative cited above that follows it:

a) The narrative states "the current waterfront area can be rated as average to above average since it provides a unique public amenity." Subsequently it states that in another part of the LID "the rating declines to merely average." No valid greenway or parkway scale has been developed that describes or defines "average" and "above average." Without a benchmark scale to serve as a point of reference there are no guiding criteria, so the Appraiser's judgement is arbitrary.
b) The arbitrariness problem continues in the following paragraph: "…which indicates an average 5% increase in condominium values situated within three blocks of the improvements/new amenities. Note that this is an average based on empirical data." It is not based on empirical data. It has no scientific or empirical basis. It is simply the Appraiser's arbitrary judgement and compounds the concerns relating to range of impacts noted in the previous section of this evaluation.
c) The final paragraph cited above states: "The above article sets up a good basis for the argument that a large, linear, well-maintained public park that attracts active users – such as the Seattle waterfront park…" It does not "set up a good basis" since it is based on faulty premises. Further, this is not a "large linear public park"; it is a parkway.

The Negative Impacts of Disamenities on Premiums

Premiums on proximate properties associated with park-like spaces are sometimes at least partially offset by a variety of social and/or environmental disamenities. These may include – congestion, increased traffic flow, lack of parking or unwanted on-street parking, litter, vandalism, intrusive lighting, and groups engaging in morally offensive activities. This led to a number of the studies reviewed in the JLR articles reporting that properties immediately adjacent to a park did not show the highest premium. Rather, it was properties located one or two blocks distant from the park (that were also distant from the source of nuisances) which had the highest premiums.

In the context of the LID, demolishing the viaduct removes a major disamenity for those properties whose view of an ugly and noisy roadway is replaced by an attractive view of the water and new greenway. Clearly, this is likely to have a major positive impact on the value of those properties, but the Appraiser appropriately recognized this as a "before" condition, rather than a benefit from the LID.

The Appraiser identified two potential negative impacts. He indicated loss of parking spaces was incorporated in his assessments: "some parking losses along Alaskan Way in the waterfront area will occur due to the project and this is considered in the analysis" (p.7), but there is no overt description of how it was "considered in the analysis."

He noted the LID was likely to result in an increase of "1.5 million net new visitors to the immediate area, generating $191 million in new annual visitor spending" (p.45). This estimate was juxtaposed in a following paragraph with a quote from the 2001 JLR article which implies he recognized the potential negative nuisance impact on property values of these new visitors: "Parks that serve primarily active recreation users were likely to show much smaller proximate value increase than those accommodating only passive use" (p.28)[1]. His report went on to paraphrase a conclusion from the JLR article: "Neighborhood parks that are primarily used by the surrounding residents result in a higher increase in property values than larger parks that attract active users from outside the neighborhood due to the adverse effects of noise, nuisance and congestion" (p. 46). Again, there is no overt description of the extent to which the Appraiser considered this disamenity impact in his assessments.

The Diminishing Marginal Valuation of Premiums.

The premiums on properties that are proximate to parks and water amenities are derived from two sources: distance from the amenity and views of the amenity. The Appraiser recognized "the view amenity will not change due to the LID project" (p. 48). He offers no estimate of the magnitude of the existing water view premium, since it is outside the scope of his brief. Nevertheless, the magnitude of the water premium is important, because it impacts the perceived value of potential increments of benefit that may emanate from the new greenway.

Surprisingly few empirical studies measuring water views, especially ocean views, have been reported in the scientific literature, but one of them was undertaken in Washington State in the city of Bellingham.[13,14] The study was limited to single-family homes. The authors used hedonic

analysis, which is widely accepted in the scientific community as the most accurate empirical approach to measuring the contribution of each of the multiple factors that impact property values.

The average value premium for an ocean view in the Bellingham study was 25.6%. However, it varied according to the quality of the view. The authors concluded:

> When views are classified into seven categories, the percentage increase in property value attributable to a view ranges from 8.2% for poor partial ocean view, to 18.1% for a lake view, 29.4% for a good partial ocean view, 30.8% for a superior partial ocean view, and 58.9% for an unobstructed ocean view (p. 69).[13]

Like all of us who do this type of analysis, the authors acknowledged that their results were context specific: "All estimated view amenity values are, of course, specific to the Bellingham market."

Two other studies with which I am familiar that perhaps have water views comparable to some properties in the LID were undertaken by a research team in the Cleveland area of Cuyahoga County in Ohio. They pertained to views of Lake Erie. The two analyses reported that properties in the County with a view of Lake Erie had a premium of 90%[15] and 56%.[16]

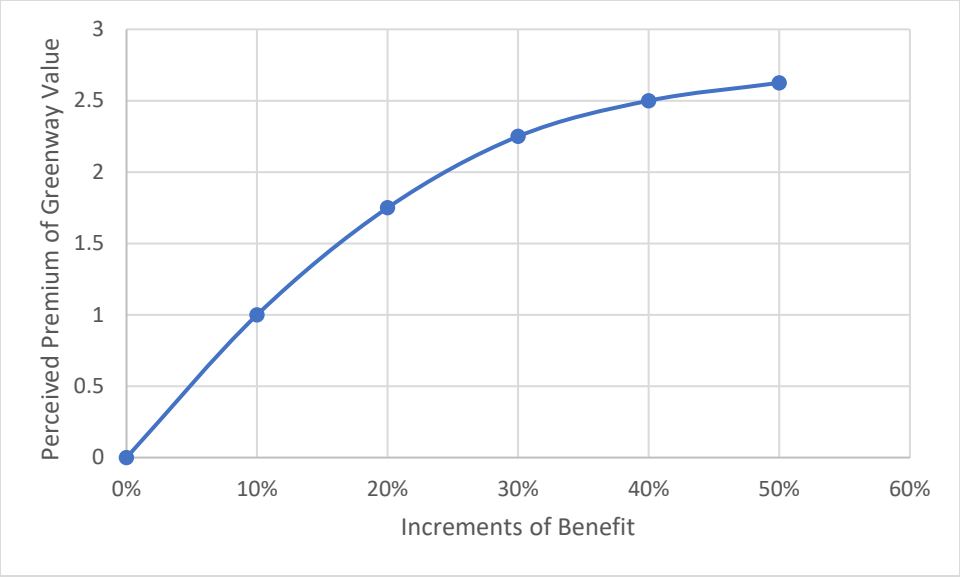
It appears reasonable to conject that similar large premiums to those reported at Bellingham and Cuyahoga County apply to properties with a water view in the LID. Further, given the fixed supply of water view properties it seems likely that premiums will rise even higher in the future.

A consequence of water premiums of this magnitude is likely to be a diminished marginal valuation of the additional units of benefit premium that may be anticipated from the new greenway.

The exposition of this principle is enshrined in Prospect Theory which was first articulated in 1979[17]. Its influence has been extensive and profound. It has been empirically validated in numerous contexts, and the theory is now widely accepted as being unusually robust in its ability to predict outcomes in human decision-making.

Since the article describing Prospect Theory was published, it has been one of the three most cited papers in the Economics literature; it was a foundation for the evolution of behavioral economics, which has transformed the economics discipline; and its authors (who were psychologists) received the Nobel Prize for economics in 2002.

One of Prospect Theory's principles is that each additional increment of benefit has a smaller impact on perceived value (premium) than the equal increment preceding it. The concave value function expressing this phenomenon is shown below:



The curve shows that the perceived value of each 10% increase in benefit is lower than the perceived value of the previous increment of benefit. For example, the increase in benefit from (say) 40% to 50% is perceived to be much less valuable than the increase from 0% to 10%. One of the authors of Prospect Theory used the following analogies to illustrate the point:

> Turning on a weak light has a large impact in a dark room. The same increment of light may be undetectable in a brightly illuminated room. Similarly, the subjective difference between $900 and $1,000 is much smaller that the difference between $100 and $200 (p. 282).[18]

In the context of the LID, Prospect Theory predicts that the incremental effect of the new "park improvements" on the value of properties which already have a large premium stemming from their view of the water is likely to be very small or perhaps non-existent.

Concluding Comments.

My brief was to evaluate whether the Appraiser properly applied my work in his study and whether the benefit areas and assigned special benefits are supportable or speculative. My evaluation has relied on secondary sources, primarily the Appraiser's report. I have not had the opportunity to visit the LID site.

The Appraiser appears to rely on my work to justify the assignment of increment increases of 0.5% to 4%. Presumably, the credibility of his judgements is enhanced by the suggestion that they have a scientific basis, rather than relying on his expertise, experience, judgement and intuition. However, the Appraiser has misinterpreted and/or misapplied eight dimensions of my work:

- The Appraiser did not have access to the recent updated findings of my original work, because their publication in the scientific literature occurred only recently after he had completed his study.

- Both the 2001 and 2020 JLR reviews pertained to residential dwellings, predominantly to single-family homes. They did not relate to commercial properties such as high-rise office buildings, retail uses, hotels et al. The Appraiser inappropriately extended the reviews' findings to all properties in the LID.
- The LID "park improvements" manifest the characteristics of a parkway, not a park. My JLR review cited by the Appraiser related to the impact of *parks* on property values. It is inappropriate to apply the findings to parkways, since they are a qualitatively different amenity.
- My review indicated most of a park's impact occurs within a 500-foot range. The Appraiser's measure of distance to which impact of the LID "park improvements" extended was three blocks, which a network analysis showed was significantly further than 500 feet.
- The conclusion from the JLR reviews that often a small increment of impact extended out to 2,000 feet was derived from "community parks." The enhanced array of amenities included in community parks accounts for them often adding a small increment of value to properties within 2,000 feet. The proposed "park improvements" in the LID do not incorporate such an array of amenities, so the 2,000-feet distance has no merit in the context of the LID.
- Even if the 2,000-foot metric had merit, where it is applied to measure distances from the "park improvements" using network analysis which is the measure used in the scientific literature, the geographic area of the LID is substantially smaller than the Appraiser shows.
- The Appraiser inappropriately adapted the Park Quality Scale that was developed for parks. He used different ratings and failed to relate them to the descriptive characteristics of parkways; used blocks rather than network feet as a distance measure; inappropriately extended the impacted distance to 12 blocks; and created "green premium" percentages that lacked any scientific foundation.
- The Appraiser's treatment of "nuisances" does not appear to consider the disamenity value of either loss of parking or additional congestion accruing from the net increase in visitors that he projects will occur.
- The perceived benefits emanating from proximity to the "park improvements" are likely to be relatively small on properties that already enjoy large premiums attributable to high-quality water views. The Appraiser does not appear to consider the diminishing marginal value of additional amenity benefits he assumes will accrue on those properties.

The Appraiser's reliance on judgment rather than on empirical evidence is evident throughout the narrative, since his critical decisions relating to premiums are frequently preceded by the word "reasonable." Consensus as to what constitutes "reasonable" is much more difficult to obtain within any given population than when there is empirical verification.

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Appendix 1

Extracted from *The Impact on Property Values of Parks, Trails, Golf Courses and Water Amenities*

Government agencies usually provide the additional level of service which is paid for by special assessment districts, but in some large cities it has been initiated by business leaders and such areas are termed business improvement districts (BIDs). There are more than 1,000 BIDs in the United States and Canada. These districts frequently elect their own boards, which take responsibility for the annual budget, hire staff, let contracts, and generally oversee operations. Much of their effort goes into cleaning up, landscaping, maintaining trees and flowers, and enhancing security. Bryant Park, one of the country's great urban park success stories, is the result of a BID. Exhibit 8-2 briefly describes how the BID worked.[13-15]

Exhibit 8-2

Using a Business Improvement District to Resuscitate Bryant Park[13-15]

In less than 15 years, Bryant Park went from a textbook example of an urban park gone bad to an urban treasure that plays a strong role in the revitalization of Midtown New York City and especially 42nd Street. Bryant Park, beside the New York Public Library, was a neglected, vandalized facility that by the late 1970s had become a haven for drug dealers in the city of New York and was widely referred to as "Needle Park." A business improvement district was formed to maintain the eight-acre park and make ongoing park improvements. The park has been restored with tall shade trees, lush green grass, flower beds, pagodas, and a thriving restaurant, and is now considered a model park. At its summer peak, there are 55 employees working in Bryant Park in security, sanitation, gardening, and special events, all of them work for the Bryant Park Restoration Corporation, which is a nonprofit private management company supported by the Rockefeller Brothers Fund and a cooperative business improvement district of neighboring property owners. On some days, the park attracts more than 4,000 office workers and tourists, and more than 10,000 people attend some special events.

The city paid one-third of the $18 million restoration costs, and foundations, philanthropists, and surrounding businesses financed the rest through the business improvement district. The businesses assess themselves approximately 33% of Bryant Park's $2 million annual maintenance bill, while the remainder of the bill is raised in rental and concession fees from restaurants (33%) and special events (33%) held in the park. Businesses recognized that property values and, hence, lease rentals, were closely tied to conditions in the park.

Rents in nearby buildings increased dramatically after the park was redesigned and secured. Results of a 2003 analysis of the impact of the renovations on office buildings bordering Bryant Park are shown in the following table. The rents increased by between 114% and 225%. A second table shown below confirms that other submarkets within a half-mile of Bryant Park also experienced rental increases over this period, but they were substantially less than those shown around the park. Owners of the properties around Bryant Park also reported that the quality of tenants improved, that there was reduced downtime between leases, and the buildings' credit profiles and market values increased.

To a primary organizer of the Bryant Park effort, the lesson was clear: “If building owners and the agents help protect urban open space, they will be more than paid back for their efforts, both in increased occupancy rates and in increased rent–all because their building has this attractive new front yard.”

Exhibit 8-2 continued
Changes in Per Square Foot Rentals in Four Buildings Facing Bryant Park 1990-2002

	1990	2002	Percentage Increase
Grace Building	$29.50	$49	114%
Beaux Arts Building	$18	$60	225%
London Fog Building	$20	$45	125%
1065 Avenue of the Americas	$20	$50	150%

Rental Changes in Comparable Buildings in Surrounding Submarkets of New York City

Grand Central	55%
Times Square	67%
Penn Plaza/Garment District	73%

Following the success of Bryant Park, the Central Park Conservancy in New York City suggested a similar model for assisting with the funding needed to maintain Central Park. The Conservancy had accepted responsibility for most of the park’s maintenance. Its annual budget for this task was over $20 million, and it was concerned that the park’s needs were “increasing beyond the capability of private philanthropy.” Accordingly, the chairman of the Conservancy’s Board stated:

Our concept for the future is to empower, by statute, all neighborhoods in the city, if they choose to do so, to support their local open space with a further revenue stream. We propose park enhancement districts similar to the business improvement districts that are improving the Grand Central area, Bryant Park and many other neighborhoods.

Each neighborhood would be enabled voluntarily to organize itself, decide whether to impose a small surcharge on its local real estate to supplement city support and private philanthropy, set the amount of the surcharge and then use it for its own park, playground or other open space. (p 14)[16]

A study of the impact of Hudson River Park on proximate property values concluded: “Up to 20% of the value of properties within three blocks of the Park is attributable to the Park.” This led to a recommendation:

To establish a Business Improvement District for the Hudson River Park, through which adjacent property owners would be assessed a fee and the funds dedicated specifically to the maintenance and programming of the Park...The principle of assessing neighboring property owners seems

sound, as these landowners benefit most from the added value of the Park and stand to lose most if the Park were to fall into disrepair.[17]

Other downtown parks that have revitalized surrounding property values include:

- The $50 million renovation of the 2.5-acre Campus Martius Park in the heart of downtown Detroit undertaken by a nonprofit coalition of business and civic leaders to celebrate the 300th anniversary of the city of Detroit. Its renovation stimulated over $500 million of new property investment in the adjacent neighborhood.[18]
- Discovery Green in downtown Houston was a 12-acre park built at a cost of around $70 million by a nonprofit that also operates it. Its impact on the assessed values of surrounding property is shown in Exhibit 8-3. In the four-year period from before the Park was announced in 2005 to when it was completed in 2008, the assessed values of property abutting it increased by 51%.
- Three park sites totaling 18.5 acres, anchor redevelopment of the 36-acre Hemisfair site in downtown San Antonio: 4-acre Yanaguana Garden, costing $10 million which opened in 2015; 9-acre Civic Park, estimated at $60 million; and 5.5-acre Tower Park, estimated at $12.5 million. The Hemisfair Plaza Area Redevelopment Corporation (HPARC) is a 501(c)(iii) charged by the city of San Antonio Council with oversight of the redevelopment. It negotiates ground leases with the commercial, office, retail and hotel elements that surround the parks on the remaining 18.5 acres of the site. These revenues are funneled back into HPARC which also collects the sales taxes accruing from within the site. These funds are used to support future operations on the site. The master plan projects the site will attract $540 million in private investment and generate $13 million in tax revenue annually to local entities.[19]
- **Exhibit 8-3**
  Changes in Assessed Valuations in Response to Discovery Green Park

Year	Average per square foot ($'s)
2005	87.87
2006	102.68
2007	116.77
2008	133.08

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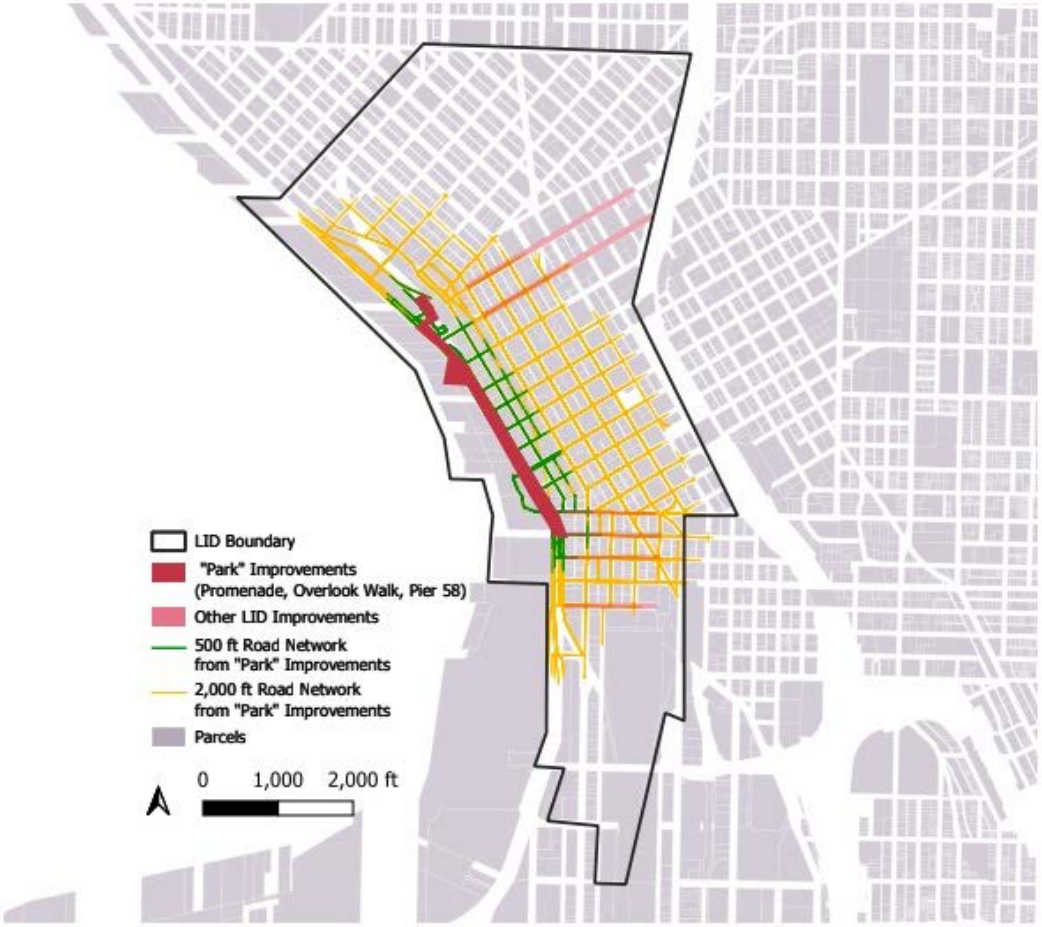
Appendix 2

GIS Map of the LID Using Network Analysis