From:	Ethington, Ruth on behalf of Planning
To:	Cleveland, Julie
Subject:	FW: Agenda Item #3, File 59745 Submittal of comments
Date:	Monday, June 29, 2020 3:25:44 PM
Attachments:	Coolidge_Street_PlanCommJune2020.pdf EQT Final Report 2018.pdf Hartmeyer_PC_062920.pdf OM_NorthLots_ESA_May2020.pdf PlanComm_062920.pdf Walkability Paper.pdf

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From: Beth <sluysb@aol.com>
Sent: Monday, June 29, 2020 2:27 PM
To: Planning <planning@cityofmadison.com>
Subject: Fwd: Agenda Item #3, File 59745 Submittal of comments

-----Original Message-----
From: Beth <sluysb@aol.com>
To: ajstatz2@madison.k12.wi.us <ajstatz2@madison.k12.wi.us>; bacantrell@charter.net <bacantrell@charter.net>; district2@cityofmadison.com <district2@cityofmadison.com>; district3@cityofmadison.com <district3@cityofmadison.com>; district6@cityofmadison.com <district6@cityofmadison.com>; erics@cows.org <erics@cows.org>; jshagenow@yahoo.com <jshagenow@yahoo.com>; keetrasburn@gmail.com <keetrasburn@gmail.com>; klanespencer@uwalumni.com <klanespencer@uwalumni.com>; ledell.zellers@gmail.com <ledell.zellers@gmail.com>; nicole.solheim@gmail.com <nicole.solheim@gmail.com>; district12@cityofmadison.com <district12@cityofmadison.com>; district18@cityofmadison.com <district18@cityofmadison.com>; allalders@cityofmadison.com <allalders@cityofmadison.com>
Sent: Sun, Jun 28, 2020 12:46 pm
Subject: Agenda Item #3, File 59745 Submittal of comments

Dear Plan Commissioners,

It seems like a lifetime ago when we first met downtown in November a long time ago, to begin the work of placemaking on Madison's northside. I attended a meeting with Deputy Mayor Orrantia in 2019, and city planners and was greeted and thanked for "coming so far to meet with the staff." To which I replied, "But I live here in Madison."

It took me 10 minutes to get downtown.

To me, it is a well connected and seemingly nearby location to many areas of the city, the interesting perspective was that it was a far away place. Almost another city.

As someone who was engaged in the Oscar Mayer process since January of 2017, as an OSCAR Group Member, through current days....I have attended many many

meetings both in person and on Zoom, and have been engaged with well over a thousand northside residents. The work has been engaged, innovative, exciting and feel that it has been the gift of the work to feel more connected to my neighborhood, and have made many wonderful friends and a wide network of interesting people, from all walks of life.

Attached are various writings from the BCCs I have attended so that you also review what those community volunteers and city leaders have seen and heard. For some of you, they may contain the work you have already discussed in your service to other BCCs. Also an interesting article on walkability and property values, environmental data from the most recent information from Brynn Bemis, among other documents. I apologize for sending so much, but the plan covers 425 acres, many key elements of the future of how the residents of the northside will communicate, travel, live and explore their neighborhoods. I have considered all aspects, so must we all.

I have also included the 2018 EQT by Design Oscar Mayer summary document as key and vital resource I used in the work of towards furthering my understanding of what our diverse northside community sees as priorities on all areas of the plan, discussed in Phase I of OMSAP. That report created an important connection for me in the work because the findings of the OSCAR Group focus group sessions and survey findings, were clearly linked to the findings in the EQT report where participants most appreciated about living in Madison: Open and Green space. This was information through a much needed lens and was pulled into all of the work from that point forward. A need for an open green space is desired by a diverse number of northsiders. This led me to attend a Friends group meeting, that wanted to preserve ALL 30 acres at the Hartmeyer natural area. And so it went.

A central piece of the work also included lots of discussions around the topics of roads being opened in non-traditional ways like the precedent set at the roadway/bike/ped path at Monroe and Leonard for Coolidge Street. Why not use that model on the noorthside?
To using the existing rail crossing to save the city over a million dollars.To creating a realistic use of missing middle housing to allow for some home ownership. I find that if prce points are below 300,000 dollars, young families can afford to move in. Lots of topics, lots of opportunity, lots of conversations with area agencies, groups, and state and federal government personnel.

While we live in troubled and difficult times, and are threatened by climate change and the global pandemic, and working to discover how to better reach across the racial divide, we are offered the gift of time. Time to not feel so rushed and pushed to adopt a plan that currently does not reflect the input of the voices of northside residents. Please take the time to review the documents I am sending as well as the letters found not only in File 59745 but also the letters in file 58107. You will be amazed.

Thank you

Beth Sluys
District 18

Coolidge Street Extension – Eken Park Neighborhood
Plan Commission Meeting June 29, 2020
Beth Sluys, Lerdahl Park Neighborhood, District 18

At a public meeting early in 2020, over 100 residents of Eken Park attended a public input session hosted by Alder Abbas. The residents have clearly spoken and they do not want Coolidge opened for 5,000 ADT or more, but rather want the end of Coolidge opened for access to safety cross Packers Highway for bikes and pedestrians, whether with a traffic light and public crossing at that location, along with a BRT bus station. This would be the perfect corner for all residents, both on the east and west sides of Packers Highway, to access public transit. At a previous *Plan Commission meeting, one of the Commissioners suggested that* **Coolidge Street could be opened in a similar fashion as found at Monroe and Leonard Streets.**

The Northside residents are in keeping with the Mayor's desire to reduce car use, increase access for walking and biking connections and increase the use of public transit as we head into the era of BRT. The overriding response to the Coolidge Street extension is **no**. Clearly the residents of Eken Park do not want the road extended, do not want the increased traffic and do not want the increased potential vehicle accidents, many have sadly already impacted lives in that neighborhood. A resident of Eken Park called the Coolidge Street extension an "insane" idea. Nowhere in the adopted Eken Park neighborhood plan (2016) is Coolidge Street slated for long-term connection. Eken Park residents prefer a similar solution like the one at Monroe Street and Leonard Street on Madison's west side. Open up Coolidge to bike and pedestrian traffic ONLY and install a good crossing with a traffic light at that corner. This would make ready access to the BRT station just a short walk down to Commercial Avenue.

As the planning and design for all roadways and road changes are being considered, it will be important to respect community values and interests of the neighbors of Eken Park and all area residents as we consider a community-sensitive approach to all roadway changes on the north side. Current WisDOT road planning perspectives: "Transportation projects are not an end in themselves, but a vital means to reach many end points. WisDOT's vision is to deliver a comprehensive transportation network that provides safe, user-friendly access and mobility, and, at the same time, ***responds to the values of Wisconsin citizens***. It is WisDOT policy to use a "Community Sensitive Design" (CSD) approach to enhance transportation project development and resulting solutions. CSD is an approach of creating public works projects that function safely, efficiently, and are pleasing to both the users and the neighboring communities. Community Sensitive Design is a collaborative interdisciplinary approach that includes ***early involvement of all stakeholders to ensure that transportation projects not only provide safety and mobility but are also in harmony with communities and the natural, social, economic, and cultural environments.*** This integration of projects into the community and environment requires careful planning. Consequences from differing perspectives must be balanced, and the design tailored to fit a project's circumstances and scope. In accomplishing this, a variety of design, construction and safety analyses must be considered, along with environmental considerations. The impacts of growth and transportation can be either positive or negative and increasingly hard to balance."

As we consider all modes of transportation for the north side, let us not look at cars and roads as the first considerations. Let us look towards pedestrian/bike path connectivity, well placed BRT stations, light rail, e-Bikes, electric car charging stations, etc. The connecting of people east to west and places north does not need to rely solely on roads and cars. Eken Park does not want the estimated additional vehicular traffic at 5,000 ADT coming through a pedestrian friendly neighborhood. Let's get creative and challenge the norm of interconnectivity that only means more roads. We know in Madison that this is just not the case as we provide a wonderful bike path system and have year round use of these paths. We have a real opportunity to do things differently and better.
All of the various plans and reports that were created with intense and vast public input over the past 10 years should be the basis of decision-making related to transit and roadways in the special area plan, especially as we consider areas with adopted neighborhood plans in place:

Emerson East-Eken Park-Yahara Neighborhood Plan *(p.54,* Coolidge is not included as a road slated for long-term road connections. The plan does state: "improve the safety of pedestrian and bike transportation within the area and to adjoining neighborhoods" and "develop strategies to improve pedestrian crossings at major intersections while implementing traffic calming features to address safety issues on local streets" and "improve and/or complete links to the existing system of off-road bike paths, bike lanes, and sidewalks that provide access to community centers, schools, and other public facilities"-the ONLY mention of Coolidge Street is in relation to improving lighting)

Comprehensive Plan (p.29, Strategy 8: "Expand and improve the city's pedestrian and bicycle networks to enable safe and convenient active transportation")

OSCAR Group Community Feedback Report (top transportation feedback was for "pedestrian bridge over Packers Ave., bike path system, bicycle station, bike path to area neighborhoods and retail areas")

Madison in Motion (#1 transit goal is to "expand transportation infrastructure to support a greater range of options for all user types")

Northport-Warner Park-Sherman Neighborhood Plan (Chapter I-5, short and long term recommendations for pedestrian and bike safety and efficiency)

Oscar Mayer Area Strategic Assessment Report (Objective 7 states "Create an integrated and connected multimodal transportation system"), *Connect Madis*on (Strategy #4 states that "transportation is an economic development issue and is a critical piece of addressing the City's equity challenges"- improving modes of pedestrian/bike/public transit connections and reliability can help with this)

*P**ark and Open Space Plan*** supports the goals for "improving the City's connectivity and eliminating gaps")

The ***Equitable Development in Madison*** paper (Population change is "pushing residents with lesser means to more peripheral areas, and importantly further away from effective transit service linking people to economic opportunities." Better linkage of non-auto connectivity to public transit will assist to increase transit access)

The ***Racial Equity and Social Justice tool*** used by the OM Strategic Assessment Committee (Item 3b calls for "better transportation connections") all strive to be focused on future development that includes transit that is not focused on car use but rather, is focused on a well diversified multimodal transit system that looks to provide opportunity for all residents of Madison and improve public health, safety and welfare.

If the current owners of OM Station want to have a road pass by their proposed brewery in the old power house, then perhaps a road could pass from Packers Highway through to the west edge of OM Station and have a road along the west edge of OM Station that then crosses at the existing and maintained Roth Street railroad crossing. We have Commercial Avenue for a connector route east to west, let's keep it that way to support all of the businesses that are slated to be built up and down Commercial Avenue. Why divert customers?

The Canadian Pacific (CP) Railroad is currently in the process of **reducing the number of at-grade crossings** due to the Federal Railroad Administration's ***Grade Crossing Reduction Act***. The current crossing is at the end of Roth Street, and is still maintained by the CP. If the city demands a road be brought through to Sherman Avenue from Packers Highway, past the future brewery at OM Station in the previous power house (Powerhouse Brewery), then why not run it across the existing crossing at the end of Roth Street, and down along the western edge of OM Station property, past the brewery and out to Pennsylvania and Packers Avenue? It is not clear that the warehouse and refrigerated building will be remaining on the OM Station property long term. There is room for this roadway to be considered, without having to pursue a new rail crossing through the Office of the Commissioner of Railroads. In this way, the uplands of Hartmeyer will be preserved and could be restored. The CP has not been invited to review the feasibility of the proposed multi-modal hub, the addition of an at-grade rail crossing, or other land uses that could impact the rail corridor that are proposed in the OMSAP.

Correspondences with the Canadian Pacific Railroad regarding the Oscar Mayer Special Area Plan concepts follows as they relate to at-grade crossings and also multi-modal hubs on the CP:
From January 30, 2020:

Dear Beth,

CP is not considering additional at-grade crossings in Madison, WI or anywhere across our system. In fact, CP has an ongoing system-wide safety initiative to close at-grade railroad crossings. This is in alignment with the FRA (Federal Railroad Administration) who set a goal in 1991 to close 25% of the 280,000 crossings in the US. This goal was established to improve public safety.

Our internal policy is that we do not allow new public crossings, as they increase the potential for grade crossing incidents, which increases safety risk for both the traveling public and train crews. CP would allow a new public crossing

with the elimination and/or consolidation of two existing public crossings. This is key to ensure we continue to drive towards reducing the overall number of crossings and improving public safety.

Thank you for your inquiry and let me know if you questions.

Brian Osborne
Manager Public Works – US East Region
O 612-330-4555 **C** 612-760-2945
Canadian Pacific Plaza 120 South 6th Street., Suite 700,
Minneapolis, MN 55402

From February 14, 2020:

Hi, Beth,

I understand you've been seeking information on any potential crossing or facility at Madison involving a multimodal transit hub. CP has not been involved in any discussions along these lines and so CP won't have anything to share.

Best regards,

Andy Cummings
Manager, Media Relations
O 612-851-5616
C 612-554-0850
120 S. 6th Street
Minneapolis, MN 55402
24/7 Media email - alert_mediarelations@cpr.ca

WisDoT needs to be involved to review the feasibility of the proposed roadways, road extensions, street crossings, added traffic controls, and any of the suggested roundabouts or other transportation options presented in the OMSAP. Current transportation options proposed are not based on WisDoT governed, guided, reviewed input, or oversight at this point in the process.

Every Madison resident should be able to walk out their front door and consider true transit freedom. We should have the freedom to consider whether to walk or bike or take a bus, light rail…keeping our car use as a last resort option. If we plan well, this can happen. True transit freedom across Madison can happen if we create trusted transportation options that are focused on a creative, well functioning public transit system interwoven with non-auto dependent development options. Northside residents that both use public transportation and who drive the roadways and neighborhoods, have a clear view of how the system works, how it fails transit users ("Transportations sucks" an EQT by Design focus group participant was quoted in 2018) and preferences on how it could be improved. A Northside Transportation Summit needs to occur to address bus routes with riders, the future route of the current Metro system, the future BRT, best connections, the new location of the transfer station and how to improve its functionality for the ridership, and how to best reduce the burden of long waits, in miserable conditions in unsafe locations. Let us bring dignity and reliability to all bus routes in Madison. I have individually

contacted Alders Abbas, Kemble and Foster, who each have expressed their enthusiasm for such an event to occur. Even if through a Zoom meeting, let us start the conversation.

I ask that we look at all of the public transportation options in earnest and put those options in place before we imagine **more roads, more cars.** Let's move away from the 1950s gridded road design currently in place for OMSAP. This is not in keeping with the work of our Mayor to have fewer cars on area roads: we are removing and narrowing roadways, and increasing access to a well-honed public transportation system. If can innovate, we can build up not out, design a no car neighborhood, less land is needed for parking, and Madison can be a leader in true and complete public transit design. If it is true that OM Station will be the major employment center for the north side, in years to come, let's design for transportation development in earnest, not just in words.

Sustainability, innovation, walkability, and the best inter-connected transit system is what is needed. Other cities are innovative and creating different models of design, that do not involve cars at all. No new roads. https://www.fastcompany.com/90434128/if-you-want-to-live-in-this-new-arizona-neighborhood-you-cant-own-a-car)

Let's innovate, use the best practices of LEED design, sustainability and green construction beyond a roof design and a rain garden.

Madison can be the leader in new design ideas for old neighborhoods.

We can do better.

FINAL REPORT OCT2018

OSCAR MAYER FOCUS GROUP SESSIONS

(608) 371-9527

www.eqtbydesign.com

annette@eqtbydesign.com

Co-Consultant with
Vandewalle and Associates

Overall Summary

EQT by Design, LLC was asked to develop a public engagement process that would be diverse and inclusive of voices who would reflect the overall diverse constituency of the City of Madison and also the specific diverse community of the Northside.

Seven (7) sessions were held to engage constituent groups representing the general diverse constituency of the City of Madison and also the specific diverse community of the Northside.

The focus groups sought input and perspective about overall Oscar Mayer impact to the area, concerns about the future and what opportunities they envision for the site and area. Four hundred (400+) comments were gathered focused on those particular themes. The appendix shares the process and pictures from the sessions held between May 2018 and June 2018.

KEY FINDINGS

Based on the analysis of the feedback, EQT identified the following as key concerns expressed in the focus groups. Individually, the participants shared what they were most concerned about in terms of the redevelopment process and impact to the city of Madison, and the Northside:

- Skeptical
- Unsure
- Placing pressure on area given historically unfulfilled needs
- Were really impacted by Oscar Mayer -- changed their living and lifestyle significantly due to job opportunities and pay.
- Feel isolated and have unmet needs due to location
- Transportation, Employment, Youth, along with feeling of being unrepresented or reflected in the community - as people, ideas, or purchasing power -- key themes
- Fear of lost opportunity
- Want to be part of whole decision-making process not just input

KEY FINDINGS

EQT also identified comments that were reflective of how participants thought collectively as it relates to community impact.

- Starving for SPACE that represents and embodies the whole community and not just parts.
- High impact solutions that address daily life … jobs, transportation, and youth
- Desire re-imagined ideas around economic independence and empowerment
- Want a centralized cultural reflection and hub that captures the essence of the Northside, its people, and its diversity.
- Capture and reflect the energy and action of people who care about their community, kids, and who love Madison.
- Build a hub that is walkable, welcoming, inclusive and easy to navigate for those who live there and for those who come to visit.

CITY OF MADISON SPECIFIC FEEDBACK

The following are themes from the participants about what they appreciate about living in the City of Madison.

- Outdoors & Greenspace
- Safe and Clean
- Healthcare and health consciousness
- Cosmetics of community is great - lakes, parks, in general lots to do
- Variety of people, places and activities
- Bike friendly
- Educational access/options
- Food via restaurants and farmer's markets
- Kid friendly - small kids
- Economy is insular from larger national scene
- Small town with big city amenities
- Potential for change due to scale and size
- Ideology of being progressive and/or liberal
- Job Opportunities
- Likes diversity in their neighborhood

CITY OF MADISON SPECIFIC FEEDBACK

The following are themes from the participants about what they do not like about living in the City of Madison.

- Transportation "sucks"
- High rent and low paying jobs
- Food deserts
- No activities for youth (middle school to age 21)
- Lack of diversity, racism, segregation
- Spaces are not inclusive or welcoming
- No creative inclusive entertainment venues in general and/or specifically for POC (people of color)
- Serious "tale of two Madison's"
- POC are not included in high impact decision-making
- Isolated and isolation

DEVELOPMENT OPPORTUNITIES

The following themes reflect what participants in the focus groups shared about potential opportunities and impact of the Oscar Mayer redevelopment.

- Increase middle class
- Hub for transportation and corridor to other parts of city, region
- Housing
- A space for all given location
- Jobs / Employment that sustain families
- Food connections - future Public Market
- Land / ownership / economic empowerment for POC
- Gathering space and place (pool, roller skating, flea market, hub for youth)
- Educational gateway for K-12 /Tech - College - re-engage youth (14-21)
- Revitalize the neighborhood and the corridor
- Generational connectivity
- Cultivate and curate cultural experiences and norms
- Opportunity for Ho-Chunk business
- More people, another cool part of town
- Aging in place opportunities
- More money circulating and staying in the community
- More communal places to pass on and practice cultural traditions.

DEVELOPMENT CONCERNS

The following themes reflect specific ideas and concerns specific to the Oscar Mayer redevelopment.

- Same people making decisions without diverse voices and representation
- Integrated space that won't welcome and serve all
  -- *EPIC and Warner Park - mixed feeling on* "development for who"
- Only high-end amenities
- Lack of Affordability
- Don't provide solutions & opportunities for current Northsiders

NORTHSIDE SPECIFIC

These are comments from those who live on the northside and key themes they shared.

- Seniors really have made youth feel welcomed….and so they are hanging out.
- How could that space be a hub for bringing resources and get it sent out to others and spread wealth
- The Coop is trying but you see security and then the prices are higher … so the message is difficult and disturbing.
- [Growth] is a positive and the concern is impact to those who are not able to afford as easily as others.
- People are moving to the Northside because it is more affordable compared to other places of the city.
- It is a tricky question...people from this area - how do you lift folks up and also invite in those who love the area and want the accessibility of the area and the opportunity
- Lack of good, reliable transportation and affordable housing.
- Lack of support for communities within Northside

NORTHSIDE SPECIFIC - cont'd

- Only focused on most vocal and those with means
- Lack of youth oriented activities
- Many who are low income experience “eat/sleep” for dinner
- Housing and landlords are so strict difficult to find good places to live
- Segregation extreme and can’t believe how unaware privileged people are of the those around them who are not
- Upstream problems blamed on people not responsible
- [Get] businesses to feel accountable and do their part to support the vision and the needs to help the “we” and just not the “I or me”

NORTHSIDE SPECIFIC to Oscar Mayer

These are comments from those who live on the northside and key themes they shared about Oscar Mayer.

- A space where love fleurishes because it is inclusive in decision-making, activities, and everyone respects each other and is inclusive and welcoming to all.
- How do we break it [Oscar Mayer] open and make it accessible?
- Want to see ideas and development that helps the Northside and keeps people here rather than pushing them away.
- Aid in more job opportunities when you have a venue that community can call home - because community provides the services/needs/ and allows them to own and solve their own issues.
- Feel isolated and removed from rest of city.
- Types of services and access that are available similar to the westside.

NORTHSIDE SPECIFIC to Oscar Mayer - cont'd

- Trying to create “the Feel of NY” - big city and bright lights, but don't accommodate all the people of Madison
- Swimming pool... could that happen
- Make city government more accessible to community - City services ….and easing burden of having to come downtown
- Communal practices that can be accessed by all POC without dictating what community can do in terms of cultural practice
- That (OM Redevelopment) could help with integration, and empower communities, and sense of belonging.
- The bus service is terrible … it takes a long time...It complicates accessibility to shop, work, and in general to access community.
- Do gardens... on the rooftop
- Airport is right there -- bring people in and out

PROCESS FORMAT

900 responses were gathered through this focus group engagement process.The design of the process was to ensure that the voices of the participants were being collected and heard.

The focus of the sessions were designed to specifically on an engagement strategy that would ensure participants would be:

-- informed about the Oscar Mayer project

-- aware and how to engage with the project

-- willing to help guide the city on needs by diverse constituencies.

-- EQT sought members of the community who were considered grasstops. These are individuals who bridge between neighborhoods and communities but do not necessarily live in the neighborhoods themselves.

-- Typically they have strong well-informed insight and connections about the community and constituency groups will react and respond.

-- Given the Oscar Mayer project is early in the work and given the timeline this engagement strategy was most efficient and effective.

PROCESS FORMAT

The worksheets with questions along with post-it notes were used to collect feedback and input (*see Appendix page 16-17*). The input sought was focused around the following three areas.

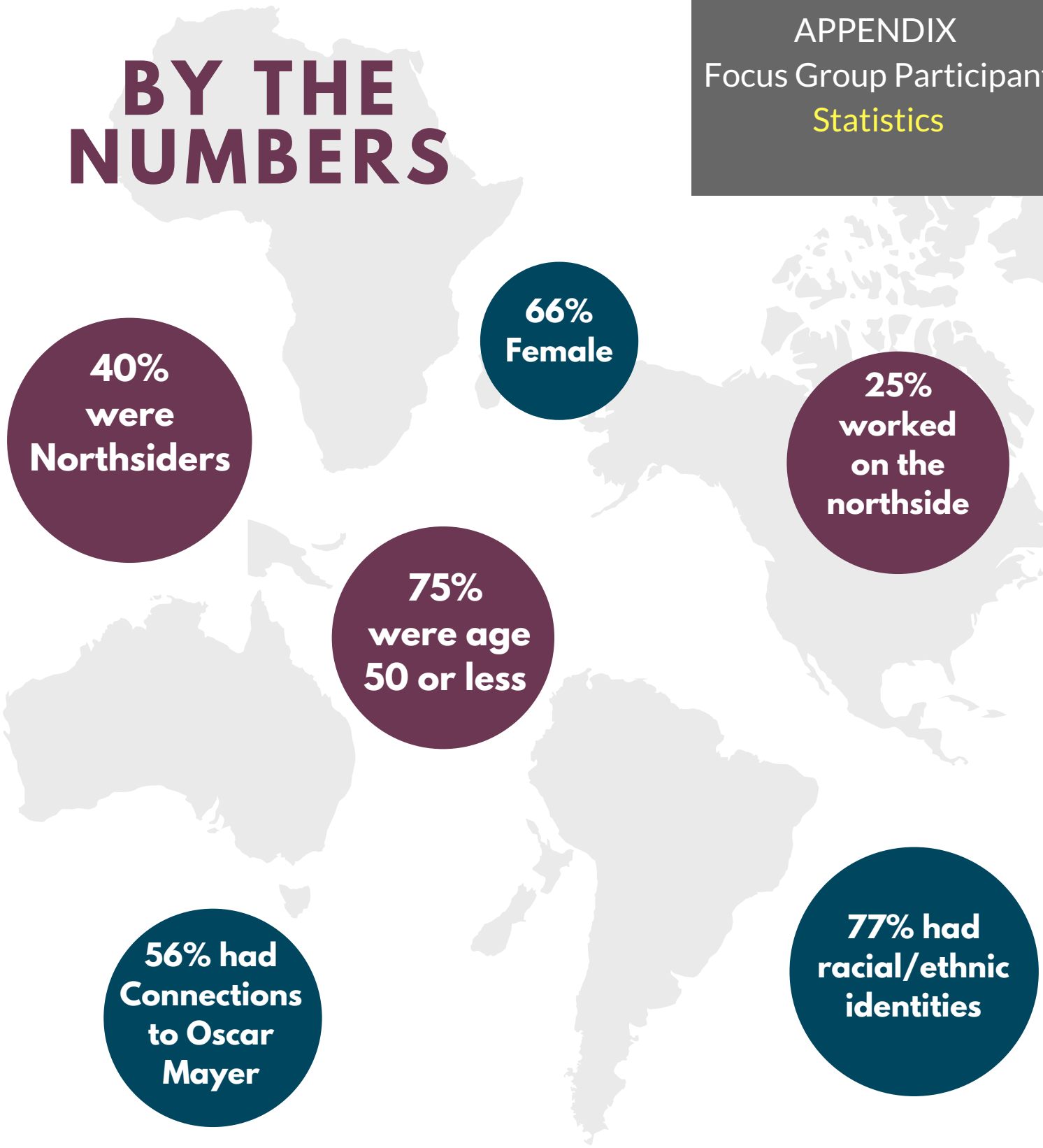
Questions were chosen that would help inform the City of Madison around three key areas:

-- Lifestyle & Living in City of Madison - the purpose was to help understand the mindset of individuals coming into the process.

-- Oscar Mayer Impact : the purpose of these questions was to understand relations and connections with Oscar Mayer.

-- Engagement : the process helped inform how knowledgeable and active the individuals were in regards to the project. To seek guidance and information regarding the most important issues, concerns, and learn what concerns, ideas and opportunities they see with the redevelopment of the Oscar Mayer area.

BY THE NUMBERS



Overall statistics reflecting the demographics of the focus group attendees.

-- 79 invited and 59 attended
-- 900 comments gathered in total
-- 400 comments specifically about Oscar Mayer

APPENDIX
Focus Group Participant Statistics

Organization Type Representing

- Business 7%
- Community 11%
- Education 9%
- Faith 2%
- Government 4%
- Neighborhood Center 12%
- Nonprofit 46%
- Organizations 11%

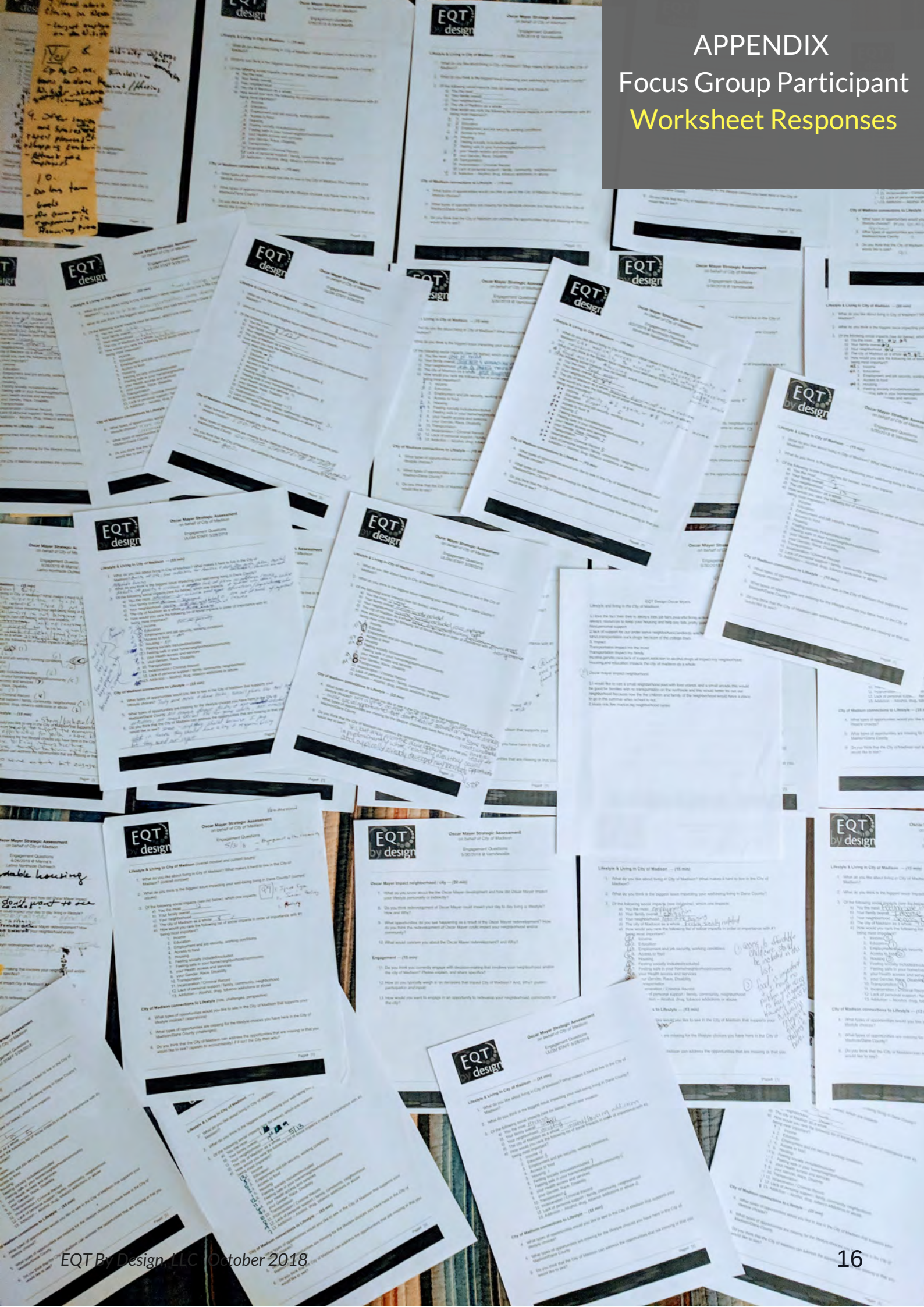
Survey Theme	Responses
Living in City of Madison	341
Oscar Mayer Concerns	95
Oscar Mayer Impact	148
Oscar Mayer Opportunities	81

Responses by Group	Responses
Hmong Cmty (ns)*	67
Kennedy Heights	127
POC Key Influencers	180
Latino Cmty (ns)*	91
Northside Navigators	86
ULGM Staff	149
Ho-Chunk	43

**ns=northside*

Session Date	Responses
5/8/18	148
5/29/18	271
5/30/18	143
5/31/18	43
6/12/18	92
6/26/18	99
6/27/18	107

APPENDIX
Focus Group Participant Worksheet Responses



APPENDIX
Focus Group Participant
Post-It Note Responses

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A healthy environment underpins economic and social well-being

Oscar Mayer Special Area Plan
Plan Commission
June 29, 2020

Beth Sluys Agenda Item #3 59745 Alder Rebecca Kemble, District 18

"Sustainability represents a desire to pass on to our children and grandchildren a world that is as good as, if not better than, the one we found." Madison Sustainability Plan (2011)

"A space where love flourishes because it is inclusive in decision-making activities, and everyone respects each other and is inclusive and welcoming to all." Oscar Mayer Focus Group Session Report, 2018

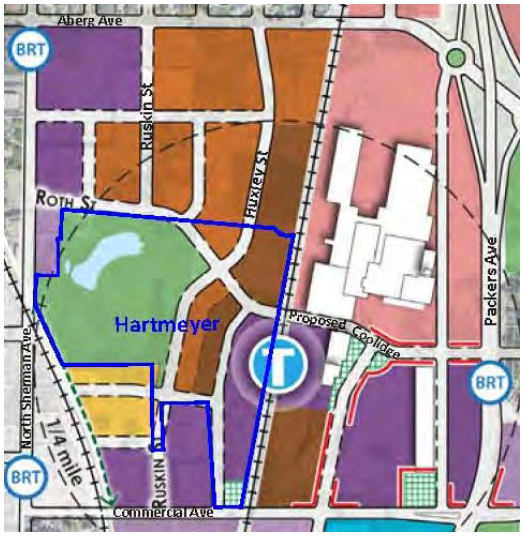
Inspired by these quotes and the hundreds of people I have met throughout this plan process, I continue to advocate for the preservation of ALL 30 acres of land at 2007 Roth Street, a re-emerging wetland that has been under industrial stress for over a century but showing its resilience, for over a hundred years. The ancient oak trees are well over 200 years old and have seen their share of changes and are bracing for future plans. As someone who is older and rather new to Madison, I am working to preserve this parcel of land for future generations. As high-density development occurs all around this parcel of land, let's leave this 30 acres for a green space.

As infill redevelopment pushes every parcel of vacant land to development, it will become more and more important to not destroy our environment for the sake of high-density housing and roads. I ask that we keep this parcel of historic wetland as a public shared space, a natural area within the midst of urban landscape for the good of present day residents and surely for the residents of the future. The second quote above is a quote that was shared during the 2018 Focus Group Sessions conducted by EQT by Design. It represents the general sentiment of the residents of the north side that are considering this process as a place making process, rather than just where things could go and how many. It is with this keen eye towards including ***all*** voices, that I write this today.

The Hartmeyer Natural Area is a **unique resource** for Madison's Northside and presents an extraordinary opportunity for the city to partner with the Friends of Hartmeyer Natural Area, Groundswell, and Dane County, as well as private donors to create a ***legacy park*** unlike any other in the Sherman Neighborhood area. It is my request that we save this remnant wetland ecosystem for public use and betterment as well as to preserve this natural area in its entirety as a place of respite from the hustle of everyday life and living in a high-density environment.

While it is true that there are little league baseball fields and the old Demetral landfill, now a public open space, they are really not easily accessible for area residents west of Packers Highway. According to the children and their families who live in the area neighborhoods along Sherman Avenue, Packers Highway creates an unsafe barrier and the children cannot go there unescorted by an adult and usually the families do not go over there. It is too dangerous to cross the highway. Seniors who live in the apartments in the area, do not like walking across Packers Highway, but do walk to the Hartmeyer area to watch birds and enjoy the natural space. When the Friends of Hartmeyer hosted a clean up event, a diverse and caring group of volunteers showed up and picked up trash together. **Let us not miss this legacy moment.**

Madison is a city known for its planning efforts. As efforts are made to preserve this vestige of historic Madison's wetland heritage, we understand that the planning process requires that the various needs and wants of the public, city leaders, planners and major landowners and developers are represented in the final plan. The option to keep ALL 30 acres as a green area on the land use map is a very viable one and helps to fulfill the goals and recommendations of most of the public plans currently guiding redevelopment and land use in Madison.



In 2018, a public engagement process that reflected the "overall diverse constituency of Madison and the specific diverse community of the Northside" was held as part of Phase I of the Oscar Mayer Special Area Plan process. The participants of the 2018 Oscar Mayer Focus Group Sessions (59 participants and 341 survey results) were asked about "what they appreciate about living in the City of Madison", the Key Findings reported that ***Green and Open space*** was the number one response on the list.

It is in light of this key finding that I continue to want to take this moment in Madison's history to create a legacy park that is open to all, where all of its people can find comfort, a slow and restful place in their lives. We have learned throughout this pandemic and in the midst of climate change, that green spaces, in particular wetlands, are of great value. A place with natural comforts and now, an open shared space during the pandemic, in an otherwise urban area, as well as an environmental resource for flood mitigation for area home basements as well as for carbon sequestration. As 218 diesel buses, F35 jets, a fleet of MG&E diesel service trucks and the addition of 2,500 cars arrive to Madison's north side, we need to address air pollution and increased carbon level concerns especially for those members of the community suffering with asthma and other respiratory disease.

The Comprehensive Plan also offers that we "preserve historic and special places that tell the story of Madison and reflect racially and ethnically diverse cultures and histories." The Hartmeyer property tells the natural history of Madison, as one of the few urban areas that are still wetland surrounded by housing

and businesses. The Hartmeyer natural area also tells the story of its indigenous people as it contains confirmed archeological and *human burial grounds,* as does the northern half of the Oscar Mayer property (documented to be located at Lots 1 and 2). **The Hartmeyer site was an indigenous village site and burial site - community of indigenous people who buried their family members near their homes.** I think about the small farm graveyards I see when I drive out in the countryside. What would that family have thought if the grave marker was pushed over and removed, the land scraped up...it does not lessen the value of the loved one being interred there, or that place on the ground. Stone or no stone, mound or no mound, it is sacred space. Let the Hartmeyer land be a place of our cultural change towards a more inclusive and dignified way towards historic preservation in our community and a clear message of how we find respect for all of Madison's residents, past and into the future. While we *speak* of our respect for the Ho-Chunk, I am asking that we make sure that all of the area, Oscar Mayer land and Hartmeyer land be archeologically surveyed as whole villages were in the area and burial grounds.

We all have connections to the land.

The Hartmeyer **property is already used as a teaching tool** for area children and adults about the environment and the natural history of our home place. There are schools nearby that would benefit greatly with programming at the natural area to teach about natural history, social history, urban redevelopment and so much more. It is its own scientist incubator. Partnering with area non-profits that offer STEM programming to use the site for education and opportunities for hands on studies of the site. Public walks to the property have been conducted in the past and for many area urban children it was their first time going birding and to experience the beauty of the natural environment, fully engaged and having fun. Why not embrace the *Black Birder* program being offered through Madison Audubon and look to partner with them to provide programming at the Hartmeyer property for all birders.

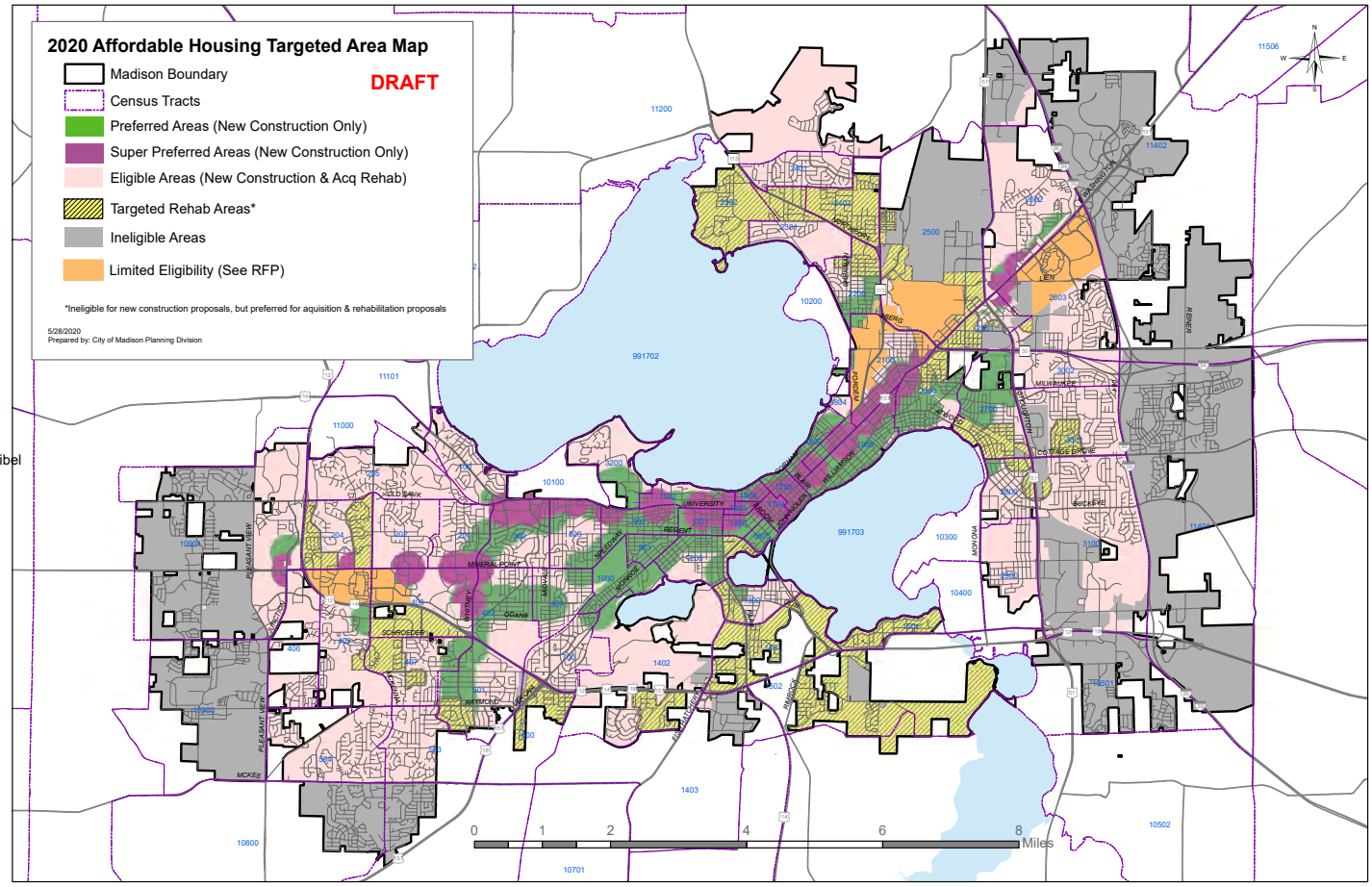
Now more than ever, north side residents relish our diversity, have a rich history of working together with the city to create great public places like the Warner Park Recreation Center, and look to this moment to again make the decision towards a legacy designation of ALL 30 acres for preservation at the Hartmeyer natural area.

If a diverse and inclusive process of over a thousand area residents businesses and organizations have given their input for almost 4 years, and find that the plan still does not reflect their perspectives, then how best can we be heard?

If being inclusive during this process has been the norm, and all of the area residents who have participated in one way or another are still not heard, then what does this say about the planning process in terms of who's voice holds the most power?

We can do better.

Affordable housing is important and there is new housing being planned and there are currently at least three projects approved or in consideration already in the area. **A graphic from a recent CDBG RFP shows an affordable housing targeted area map indicating that most of the Hartmeyer land is coded for limited eligibility for targeting affordable housing.** When considering housing in an industrial area, make sure that before any ground is broken, that we understand about the subsurface contamination and its impact on families and children. There are already issues at OM Station involving toxic gas vapors in buildings. It is an area known for its industrial use and also in need of clean up. ***Affordable housing needs to also be safe housing.***



"Society exists within environment that must be respected and preserved for future generations…the preservation of important natural features and systems is critical to maintaining a healthy environment and ecological balances." - **Madison Comprehensive Plan (2018)**

"A wetland exists on the Hartmeyer property that not only serves an important retention function, but as a natural feature for residents as well." "Partner with the current owners of the wetlands near Roth Street to preserve and maintain them as open space."– **Oscar Mayer Area Strategic Assessment Report (2018)**

"Preserving and enhancing the existing wetland area and the natural open space features that surround it may promote community building and identity in this area, serve employers/employees and serve as a green space gateway to the Northside." **Northport-Warner Park-Sherman Neighborhood Plan (2009)**

The **Parks and Open Space Plan** identified the Sherman neighborhood area as deficient in access to a park.

Zoning identifies the Hartmeyer area as light industrial with a wetland overlay, the **current desire of the Sherman Neighborhood Association, the Eken Park Neighborhood Association, the Emerson East Neighborhood Association, Madison Audubon Society, The Sierra Club, Alder Abbas (D12), and area residents and businesses is to conserve ALL 30 acres for a public natural area.** There is a massive outpouring of letters of support from residents to the various committees, boards and commissions that have been a part of this OMSAP adoption process. (See Legistar pages for TPPB, Plan Commission, Board of Park Commissioners)

While the Comprehensive Plan may recommend land uses that includes infill and redevelopment, the Northport-Warner Park-Sherman (NWS) Neighborhood Plan, the ***adopted*** sub-area plan (Nov 2009), shows that there is a desire for open space shown for the Hartmeyer property, it is based on the wetland delineation of that time. Overwhelmingly, the area residents who live in the adopted plan area are supportive of preserving the ecosystem of the Hartmeyer property. **Overwhelmingly at all of the OMSAP related meetings with area residents, young, old and millennials, *the majority opinion expressed was support for preserving ALL 30 acres and the creation of a public access natural area at the Hartmeyer property.***

The habitat provides a way station for migratory birds and butterflies as a pollinator friendly site as well a breeding location for sandhill cranes that raise colts there each year. This site is a Biological supermarket for many species that rely upon it for food, water and shelter. It is an effective system for removing nitrogen and phosphorus, provides water retention and supports improved surface water through filtering sediments, and offers a recharge point for groundwater, our source of drinking water from city wells located in deep aquifers.

It is my request that we consider the wetland as an existing context for the neighborhood area. True context-sensitive design is required, as the Hartmeyer land is a key component of the neighborhood character and it offers a place in which community members feel ownership. Like Central Park in New York city, this legacy park opportunity would provide a beautiful open green space for the high density redevelopment that is north and south of the Hartmeyer property. Let us look to building upwards in the surrounding areas and keeping the Hartmeyer property as the capstone green space and natural area for the thousands of people who will be living in high-rise apartments all around it. Keep ALL 30 acres for connector permeable bike paths, overlook viewing stations, and paths throughout the site.

Area businesses rely upon the wetland as a critical part of their business branding. The dental office facility on Sherman Avenue faces out onto the wetland and uses its visual calming effects to help their patients. They lovingly call it “their pond.”

Historic topographic maps and historic aerial photos show that the Hartmeyer land was marsh and wetland. In truth, most of the lakeshore areas that are now all developed and being redeveloped in the Madison area were once open marsh and wetland supporting the Yahara River watershed. It was through the infilling of the wetlands and marsh areas with soil, public trash, rubble, construction debris, coal ash, and industrial toxic and hazardous waste, that we filled the wetlands and marshes in, and now redevelop and live on top of it. But the wetland and groundwater systems remain, despite our infilling. Wetland subsurface systems remain in place, and are not destroyed. As the saying goes*, a river runs through it*.

If the city is willing to preserve this land, Dane County and GroundSwell have also indicated interest in preserving this property (per County Supervisor Paul Rusk and GroundSwell Executive Director, Jim Welsh). Please convene a meeting to discuss the purchase of the complete 30-acre ecosystem with Dane County and Groundswell. Area residents and businesses would also donate towards the creation of this park through crowd sourcing.

Why settle for 1950s style planning (more gridded roadways and cars) when what we are called to create is something new, innovative, sustainable and fresh. More roads and cars is not what the city is about. Why not consider a car free neighborhood, focused on work life at OM Station and the Hooper property, well connected by transportation, and surrounded by life amenities that make it all come together for a healthy, sustainable,

We have willing partners. ***We have community support.***

EXECUTIVE SUMMARY

Mr. Thomas Otto, on behalf of the City of Madison Office of Business Resources, retained The Sigma Group, Inc. (Sigma) of Milwaukee, Wisconsin to conduct an AAI Phase I Environmental Site Assessment (ESA) at the property located at 910 Oscar Ave in Madison, Wisconsin (subject property). The purpose of the environmental assessment was to identify any recognized environmental conditions (RECs), as defined by ASTM in its Standard Practice for Environmental Site Assessments (E 1527-13), on the subject property. To perform the service, Sigma compiled a site history, reviewed available regulatory documents, reviewed area geology and hydrogeology and conducted limited site observations between March 1 and April 10, 2020.

RECs, as defined by ASTM in its E1527-13 Standard Practice for Environmental Site Assessments (All Appropriate Inquiry), include the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. The term includes hazardous substances and petroleum products even under conditions in compliance with the law. This term is not intended to include de minimis conditions that do not generally present a material risk to human health or the environment and would not be the subject of an enforcement action if brought to the attention of the appropriate authorities. Conditions determined to be de minimis are not recognized environmental conditions.

SITE DESCRIPTION AND HISTORICAL FINDINGS

The subject property consists of a roughly 16.5-acre section of an approximately 49.52-acre parcel (Parcel # 081031301013), located at 910 Oscar Ave in the City of Madison, Dane County, Wisconsin. The subject property has also historically been listed as 910 Mayer Ave. At the time of this assessment, the subject property was improved with several buildings:

- Building 43 is an approximately 57,240 square-foot warehouse/manufacturing building constructed in 1969-1971. The eastern section of Building 43 has two stories, while the western section is a one-story, high bay warehouse. Building 43 was historically utilized for spice mixing, plastic extrusion/forming, and warehousing.
- Building 50 is an approximately 79,925 square-foot, one-story warehouse/ manufacturing building constructed in 1963. Building 50 was historically utilized for meat processing, plastic wrapping material production, and warehousing.
- The brine building is a roughly 500-square foot building constructed sometime between 1968 and 1976. The brine building was historically used to prepare brines and other solutions.
- The wellhouse is a roughly 500 square-foot building constructed sometime between 1968 and 1976 (the well was reportedly abandoned in 2004).

Historically, the northeast corner of the subject property was improved with a roughly 900 square-foot concrete brick plant and associated smokestack, constructed sometime prior to 1937, expanded to roughly 2,600 square feet by 1950, and razed sometime between 1950 and 1962. A roughly 4,000 square-foot building (likely a cold storage building) was constructed on the site of Building 43 sometime between 1950 and 1955 and was razed

in 1969. Prior to the construction of these buildings, the subject property was unimproved. Since development, the subject property has been occupied by Oscar Mayer and Kraft Foods, which utilized the subject property for meat processing and distribution. The property has been unoccupied since the meat processing facility closed in 2017.

Fill materials were historically placed on the subject property. Topographic maps produced between 1890 and 1906 depict the subject property as a wetland. A geologic cross-section of the subject property produced by BT^2 in 2006 indicates that a layer of fill material extends to a depth of up to six feet below ground surface (bgs) in the central section of the subject property, and peat is present below the fill material in some sections. A 2016 Phase I ESA report repeats a claim from a prior environmental report (likely produced in 1994) that fly ash was buried in the northern section of the subject property. Coal piles and land disturbances were depicted in the northern section of the subject property in aerial photographs produced between 1949 and 1968.

ENVIRONMENTAL RECORD FINDINGS

A search of available environmental records was conducted by Environmental Data Resources Inc. (EDR). The 910 Oscar Ave parcel, which includes the subject property as well as an additional 33 acres, was identified in the Resource Conservation and Recovery Act (RCRA), Emergency Response Notification System (ERNS), Leaking Underground Storage Tank (LUST), Underground Storage Tank (UST), Environmental Repair Program (ERP), Aboveground Storage Tank (AST), Wisconsin Spills, Facility Index System (FINDS), toxic Release Inventory System (TRIS), Tier 2, Wisconsin Asbestos, and Wisconsin Solid and Hazardous Waste Information System (SHWIMS) databases researched by EDR.

Environmental Record Findings Known to Include the Subject Property

EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the Wisconsin Spills database with 38 releases. Based on the available information, the following release is known to have occurred on the subject property itself:

- BRRTS #04-13-227692/04-13-227043: In 1998, a cylinder on an elevator broke, resulting in a reported release of 75 gallons of hydraulic oil. An environmental contractor was hired. Two identical BRRTS entries with different BRRTS numbers were generated. Based on the date and nature of the release, a Request for No Further Action report prepared by BT^2, which was included in the site file for an unrelated ERP case, applied to this spill. No correspondence from the WDNR concerning the release was identified, so it is unclear if the WDNR recommended any additional actions. According to the Request for No Further Action, submitted to the WDNR on March 3, 1999, the freight elevator in Building 43 malfunctioned on October 22, 1998, resulting in a release of 140 gallons of hydraulic oil. Approximately 64 gallons of the hydraulic oil was recovered, and the elevator system was replaced. No further remedial actions were discussed.

EDR identified the subject property as an ERP site:

- The Oscar Mayer Former Spice Room Building 43 site (BRRTS #02-13-580723) is an open ERP site located in the southeast corner of Building 43. The ERP case was opened in 2017 to address chlorinated volatile organic compounds (CVOCs) detected in sub-slab gas samples collected in the vicinity of the former spice room. Concentrations of trichloroethylene (TCE) in sub-slab vapor samples collected below

Building 43 ranged from 2.7 to 66,800 ug/m^3, exceeding WDNR sub-slab vapor criteria. In 2019, two rounds of groundwater samples were collected from wells located directly east, west, and south of the building and tested for volatile organic compounds (VOCs). One or more chlorinated compound was detected at a concentration greater than the preventive action limit (PAL) and/or enforcement standard (ES) in each groundwater sample tested.

- The Oscar Mayer Inc. site (BRRTS #02-13-000895) is a closed ERP site with continuing obligations, located in the central section of the subject property. According to the BRRTS database, the ERP case was opened in 1984; however, no documents from the period between 1984 and 1993 were included in the site file. According to the July 2006 Closure Request submitted to the WDNR by BT^2, the ERP case was opened to address chlorinated solvent impacts discovered in groundwater from production wells installed in the bedrock on the subject property. The report figures indicate that Production Well #5, located in the northwest corner of the subject property, extended to a depth of 400 feet bgs, with a well casing extending to a depth of 225 feet bgs. Quarterly groundwater samples from Production Well #5 collected between 1986 and 1993 indicated that TCE levels ranged from 1.37 to 5.64 ppb (ug/L), exceeding the ES of 5 ug/L, and tetrachloroethylene (PCE) levels ranged from below detection level to 37.9 ppb (ug/L), exceeding the ES of 5 ug/L. Production well data from after 1993 was not included in the site file.

  In 1994, Conestoga Rovers & Associates (CRA) advanced soil borings and installed monitoring wells to depths of up to 56 feet bgs, which indicated that a plume of chlorinated substances (1,2-dichloroethene and vinyl chloride) was present. Groundwater samples collected by BT^2 between 1994 and 2005 indicated that impacts were generally limited to the central section of the subject property and concentrations generally followed a downward trend throughout the monitoring period. BT^2 concluded that the area of ES exceedance for vinyl chloride extended to between 50 and 60 feet bgs. The site was granted a conditional closure in 2006.

  A 2006 memorandum to the site closure committee stated that in 1986, a spill of chlorinated solvents occurred in a drum storage area, thought to be west of Building 28, southwest of the subject property. In 1987 and 1988, approximately 110 cubic yards of contaminated soil was excavated and treated on site. No data from the remedial action was included in the site file. Sigma reviewed an excavation photo included in the site file. Based on aerial photographs and site maps from the 1980s, the excavation was most likely to the west of Building 43, directly west of the subject property.

Environmental Record Findings Which May Include the Subject Property

The 910 Oscar Ave parcel, which includes the subject property, was identified in the Tier 2 database for the on-site storage of ethylene glycol, nitric acid, nitrogen, carbon dioxide, lead acid batteries, sulfuric acid, diesel fuel, ammonia, petroleum hydrocarbons, ethylene vinyl acetate, vinylidene chloride/vinyl chloride copolymer, and sodium hydroxide.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the RCRA and FINDS databases as an active Large Quantity Generator (generates 1,000 kg or more of hazardous waste during a calendar month) of ignitable and corrosive wastes, as well as

waste lead, mercury, PCE, TCE, spent nonhalogenated solvents, and dichloromethane or methylene chloride, and byproduct salts generated in the production of MSMA and cacodylic acid. The facility has received notices of violations, including a formal enforcement action, which were subsequently corrected.

The subject property parcel was identified in the FINDS database as a TRI reporter, with nitrate compounds, ethylene glycol, nitric acid, ammonia, ammonia nitrite, methanol, chlorine, phosphoric acid, hydrochloric acid, sulfuric acid, butyl benzyl phthalate, sodium hydroxide, and dichloromethane listed as hazardous substances which were historically released. According to the Form R for 1987, hazardous materials were disposed of via an on-site landfill, on-site land treatment, on-site surface impoundment, and on-site underground injection. The quantity released through these methods was not included in the form.

The 910 Oscar Ave parcel, which includes the subject property, was identified in the SHWIMS database as a solid waste transporter between 1989 and 1999, a solid waste refuse derived fuel storage site handling animal carcasses, garbage, and refuse between 1989 and 1994, an inactive waste registry site, and a proposed landfill.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, as an ERNS site with 24 reported releases. Various operator errors and equipment failures resulted in 17 reported releases of up to 110 pounds of ammonia between 1993 and 2012. The other seven reported releases were as follows:

- In 1991, a release of ammonia, chlorine, methane arsenic acid, sodium salts and black phosphorus was reported.
- A 1993 equipment failure resulted in a release of 30 gallons of ethylene glycol.
- A 1993 equipment failure resulted in a release of 5 gallons of ethylene glycol.
- A 1993 equipment failure resulted in a release of an unknown amount of ethylene glycol.
- A 1995 break in a hose resulted in a release of 0.5 gallons of diesel fuel.
- A 1995 equipment failure resulted in a release of 15 gallons of hydraulic oil.
- A 2000 sanitary sewer backup resulted in a release of 20 gallons of sewage.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the Wisconsin Spills database with 38 releases. In addition to 14 releases of ammonia, the following releases may have occurred on the subject property:

- BRRTS #04-13-039771: In 1984, a release of 50 gallons of PCB-containing mineral oil occurred during the replacement of a transformer. The release was contained and recovered using absorbent.
- BRRTS #04-13-041208: In 1986, the sewer plugged, resulting in a release of up to 1,000 gallons of wastewater.
- BRRTS #04-13-048202: In 1993, a break in a pipe under the sidewalk resulted in a release of 30 gallons of antifreeze. The spill was cleaned up using absorbent.
- BRRTS #04-13-049245: In 1994, a tank froze, resulting in a release of three gallons of hydraulic oil. The oil landed on snow, which was removed. The remaining oil was cleaned up using absorbent.
- BRRTS #04-13-050780: In 1995, a break in a discharge line resulted in a release of an unknown amount of engine waste oil into the storm sewer.

- BRRTS #04-13-051030: In 1995, a break in a hose resulted in a release of one gallon of petroleum. The spill was cleaned up using absorbent, but at least some of it entered the storm sewer.
- BRRTS #04-13-051042: In 1995, a mechanical failure resulted in a release of 30 gallons of antifreeze. The spill was cleaned up using absorbent, but at least some of it entered the sanitary sewer.
- BRRTS #04-13-229872: In 1998, a plug in a line resulted in a release of 1,000 gallons of cooling water into the storm sewer.
- BRRTS #04-13-241160: In 1999, a release of 12 gallons of sulfuric acid occurred.
- BRRTS #04-13-248176: In 2000, an electrical problem resulted in a release of 110 pounds of ammonia.
- BRRTS #04-13-264296: In 2000, a stoppage in the sewer drain resulted in a release of 475 gallons of sewage.
- BRRTS #04-13-270923: In 2000, a broken flange resulted in a release of 35 gallons of sodium hydroxide solution.
- BRRTS #04-13-529401: In 2004, a gasket on a 250,000-gallon reservoir failed, resulting in a release of 8,000 gallons of bleach (chlorinated water).
- BRRTS #04-13-548071: In 2006, a pump failure resulted in a release of 10 gallons of non-hazardous wastewater. The spill was contained and cleaned up.
- BRRTS #04-13-551001: In 2008, a sump pump in the wastewater treatment plant failed, resulting in a release of an unknown amount of wastewater.
- BRRTS #04-13-555058: In 2010, a release of 1,500 gallons of Quad X 100, a cleaning solution containing 40% sodium hydroxide, occurred during delivery. The wash basin was flushed, and an environmental contractor was hired.
- BRRTS #04-13-558448: In 2012, an unknown quantity of ammonia was released from an over-pressurized refrigeration system.
- BRRTS #04-13-560490: In 2013, a coolant overflow resulted in a release of 3,100 pounds of antifreeze.
- BRRTS #04-13-562776: In 2014, an operator error resulted in a release of 7,000 gallons of a saltwater solution. Some of the release was captured, and some of it entered the storm sewer.
- BRRTS #04-13-528788: In 1993, a fire or explosion on an overheated motor in the engine/compressor room resulted in a release of 20,000 pounds of ammonia.

The 910 Oscar Ave parcel, which includes the subject property, was identified in the WI Asbestos database for asbestos abatement projects completed in 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, and 2019.

The parcel was also identified in the FINDS database as an Occupational Safety and Health Administration (OSHA) establishment and a major source of air pollution.

Environmental Record Findings Known to Not Include the Subject Property

EDR identified the 910 Mayer St parcel, which includes the subject property, as a registered UST site, with a 250-gallon fuel oil UST, a 9,500-gallon unleaded gasoline UST, a 10,000 gallon leaded gasoline UST, a 10,000-gallon diesel UST, and a 12,000-gallon diesel UST historically located on the parcel. All of the USTs have been removed. Based on available LUST documents and fire department records, none of the USTs were located on the subject property.

EDR identified the Oscar Mayer property in the AST database with a 550-gallon unleaded gasoline AST, a 2,000-gallon diesel AST, a 500-gallon waste/used oil UST, a 150-000-gallon fuel oil AST, and a 250-000-gallon fuel oil AST. All of the ASTs have been removed. Based on aerial photographs and fire department records, none of these ASTs were located on the subject property.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the Wisconsin Spills database with 38 releases. Based on the available information, the following releases did not occur on the subject property:

- BRRTS #04-13-049014: In 1993, a mechanical failure in Building 23 resulted in a release of 40 gallons of antifreeze. The release was cleaned up using absorbent and a vacuum; however, some of the antifreeze likely entered the storm sewer.
- BRRTS #04-13-212337: In 1995, a leaking pipe on the 2nd floor of Building 19 resulted in a release of 22 pounds of freon gas. The pipe was subsequently repaired.
- BRRTS #04-13-245306: In 1999, backpressure during the filling of a UST resulted in a release of 12 gallons of petroleum. Sorbent pads were used to clean up the release.

The following ERP sites were identified on the 910 Mayer Ave parcel; however, based on the available information, are not located on the subject property itself:

- The Oscar Mayer Former Filling Station East site (BRRTS #02-13-580722) is an open ERP site located in the east-central section of the 910 Mayer Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of three former filling stations, which were razed around 1968. The northernmost filling station was located directly south of the southeast corner of the subject property. While no records of UST removals were identified, ERM did not find evidence indicating that the USTs were still present. Contaminants of concern include VOCs, polycyclic aromatic hydrocarbons (PAHs), and lead. As of October 2018, when a Site Investigation Workplan (SIWP) was submitted to the WDNR by ERM, the extent of groundwater impacts had not yet been delineated; however, impacts were identified within 50 feet of the subject property.

- The Former 1,2-DCA Tank South site (BRRTS #02-13-580721) is an open ERP site located in the southeast section of the 910 Oscar Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of two former 6,300-gallon ethylene dichloride ASTs. Contaminants of concern include CVOCs, PAHs, arsenic and lead.

- The Oscar Mayer Lift site (BRRTS #02-13-221826) is a closed ERP site located on the 910 Oscar Ave parcel. The ERP case was opened in 1999 to address impacts associated with an abandoned 250-gallon UST and closed after two months, with no continuing obligations. The UST was located roughly 500 feet south of the subject property, on the opposite side of the main facility building. According to the tank closure assessment, prepared by Woodward-Clyde Consultants in December 1992, Oscar Mayer representatives knew of “no other tanks, past or present, in the vicinity of the tank” which was removed.

EDR identified several LUST sites on the 910 Mayer Ave parcel; however, based on the available information, the sites are not located on the subject property itself:

- The Oscar Mayer Site #3 (BRRTS #03-13-114831) is a closed LUST site with continuing obligations located in the southeast section of the 910 Mayer St parcel, roughly 900 feet to the south of the subject property. The LUST case was opened in 1996 to address impacts from a 10,000-gallon leaded gasoline UST, a 9,500-gallon unleaded gasoline UST, and a 10,000-gallon diesel UST. At the time of site closure in 2006, residual soil and groundwater contamination were present at the site.

- The Oscar Mayer Foods site (BRRTS #03-13-001744) is a closed LUST site located on the southeast side of the main Oscar Meyer building, to the south of the subject property. The LUST case was opened in 1992 to address contamination discovered during the removal of a UST. While the size of the UST was not stated in the site file, the dimensions of the initial excavation indicate that the UST had a capacity of 1,900 gallons or less. Some residual soil contamination was present at the time of closure in 1993.

- The Oscar Mayer site (BRRTS #03-13-000053) is a closed LUST site located at 2007 Roth Street, southwest of the subject property across the railroad right-of-way. The LUST case was opened in 1989 to address soil and groundwater impacts related to two fuel oil ASTs (likely with capacities of 150,000 and 250,000 gallons) and historical releases along the railroad right-of-way. One AST was removed prior to the site closure, while aerial photographs indicate that the other was present until sometime between 2014 and 2017. Soil and groundwater samples were tested for VOCs and PAHs. The site was closed in 2008 with continuing obligations. Residual soil and groundwater contamination are present, and impacts extend beyond the site.

In addition to the 910 Oscar Ave parcel, EDR identified several properties in the vicinity of the subject property in one or more of the environmental databases researched by EDR:

- Chet's Car Care Center, located at 2020 Aberg Ave, directly north of the subject property across Aberg Avenue, was identified in the RCRA database as a Very Small Quantity Generator (generates less than 100 kg of hazardous waste during a calendar month) of ignitable wastes and lead. Based on RCRA records, the facility has been in operation since circa 1991. The company website indicates that it opened in 1984. No violations were reported for the site. Two 878-gallon waste/used oil ASTs are registered to the site.

- The Madison Metro North Transfer Point site (BRRTS #02-13-524010) is a closed ERP site with continuing obligations located at 1201 Huxley Street, adjacent to the west of the subject property across the railroad right-of-way. The ERP case was opened in 2004 to address impacts from four 10,000-gallon fuel oil USTs and eight 10,000-gallon fuel oil ASTs. According to the continuing obligations packet, contaminants of concern included benzene, toluene, ethyl benzene and xylenes, as well as select PAHs. Soil and groundwater samples collected in 2004 and 2005 indicated that soil and groundwater extended into the railroad right-of-way. The ERP case was closed in 2006, with residual soil and groundwater contamination.

- The Burke Wastewater Treatment Plant site (BRRTS #02-13-315773) was identified in the ERP and PFAS databases as an open ERP site. The site is located at 1401 Packers Ave, northeast of the subject property across the intersection of Packers Ave and Aberg Avenue. According to site documents, the Burke Wastewater Treatment Plant operated on this site from 1914 to 1936 and 1942 to 1978. Prior to 1950, the plant was a public utility and received domestic sewage. After 1950, the plant was operated by Oscar Mayer and treated wastewater from the Oscar Mayer plant. Oscar Mayer constructed a series of sludge lagoons in the northeast section of the site and also used the site for landfilling of ash from coal combustion and waste products (hair and toenails) from the meat processing plant. In 1981, the site was sold to Reynolds Transfer and Storage Co. In the 1980s and 1990s, the lagoons were filled in and buried. The site is bordered to the north by the former Truax Field Landfill, which was used by the City of Madison and the U.S. Army from 1942 to 1972.

  In March 2002, REA advanced soil borings and installed groundwater monitoring wells on the ERP site. Soil and groundwater samples were collected from the southwest section of the site, near the historical sludge drying beds. Soil samples from the southwest section of the site contained concentrations of arsenic and cadmium which were greater than their respective groundwater pathway residual contaminant levels (RCLs) and background threshold values (BTVs). The arsenic concentration was also greater than the direct contact RCL. Chromium and lead were present in groundwater samples collected from the southwest section of the site at concentrations greater than their respective ESs.

  In August 2019, soil and groundwater samples from the Burke Wastewater Treatment Plant site were tested for the presence of PFAS. One or more PFAS constituents was detected in each sample. At the time of this report's publication, Wisconsin does not have final groundwater standards for PFAS constituents; however, the groundwater sample collected closest to the subject property (TW-4, located roughly 650 feet east northeast of the subject property) contained a combined concentration of PFOS and PFOA of 23.7 ng/L, which is greater than the proposed groundwater ES of 20 ng/L. The Amended SIWP for the site, submitted to the WDNR in December 2018 by Seymour Environmental Services Inc., indicates that groundwater flow on the ERP site is to the southwest.

  It should be noted that, based on a review of aerial photographs, Burke Wastewater Treatment Plant operations likely extended onto the eastern edge of the subject property until the re-alignment of Packers Avenue in the mid-1960s. A roughly 6,000 square-foot section of the subject property, which was then east of Packers Ave, is depicted as disturbed land in the 1955 aerial photograph.

- EDR identified the Truax Field landfill, located on Aberg Avenue, to the northeast of the subject property, in the State Hazardous Waste Sites (SHWS) database. The landfill was added to the hazard ranking system list in 1994.

CONCLUSIONS

Recognized Environmental Conditions (RECs)

This assessment has revealed evidence of the following RECs at the subject property:

- Fill materials were historically placed on the subject property. Topographic maps produced between 1890 and 1906 depict the subject property as a wetland. A geologic cross-section of the subject property produced by BT^2 in 2006 indicates that a layer of fill material extends to a depth of up to six feet bgs in the central section of the subject property, and peat is present below the fill material in some sections. A 2016 Phase I ESA report repeats a claim from a prior environmental report (likely produced in 1994) that fly ash was buried in the northern section of the subject property. Coal piles and land disturbances were depicted in the northern section of the subject property in aerial photographs produced between 1949 and 1968. Considering the confirmed presence of fill material and the reported presence of buried fly ash on the subject property, fill materials may have impacted the subject property via soil, groundwater and/or vapor.

- Industrial activities on the 910 Oscar Ave parcel, which includes the subject property, involved the storage of reportable quantities of petroleum products and hazardous materials including chlorinated compounds, and the generation and possible on-site disposal of solid and/or hazardous waste. Additionally, the 910 Oscar Ave parcel may have been used for the manufacturing of insecticides in the 1960s and 1970s. It should be noted that the Interstate Technology & Regulatory Council (ITRC) has included pesticides in its list of products which can contain PFAS. Releases associated with the manufacturing, storage and/or disposal of petroleum products and hazardous materials may have impacted the subject property via soil, groundwater, and/or vapor.

- The Oscar Mayer Former Spice Room Building 43 site (BRRTS #02-13-580723) is an open ERP site located in the southeast corner of Building 43. The ERP case was opened in 2017 to address CVOCs detected in sub-slab gas samples collected in the vicinity of the former spice room. Concentrations of TCE in sub-slab vapor samples collected below Building 43 ranged from 2.7 to 66,800 ug/m^3, exceeding WDNR sub-slab vapor criteria. In 2019, two rounds of groundwater samples were collected from wells located directly east, west, and south of the building and tested for VOCs. One or more chlorinated compound was detected at a concentration greater than the PAL and/or ES in each groundwater sample tested. The subject property has been impacted via groundwater and vapor.

EDR identified several properties in the vicinity of the subject property on one or more of the environmental databases. Based on the relative distance between the reported sites and the subject property and/or the reported site status, the identified sites are not expected to impact the subject property, with the exceptions of the following sites, which are considered offsite RECs:

- The Oscar Mayer Former Filling Station East site (BRRTS #02-13-580722) is an open ERP site located in the east-central section of the 910 Oscar Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of three former filling stations, which were razed around 1968. The northernmost filling station was located directly south of the southeast

corner of the subject property. While no records of UST removals were identified, ERM did not find evidence indicating that the USTs were still present. Contaminants of concern include VOCs, PAHs and lead. As of October 2018, when a SIWP was submitted to the WDNR by ERM, the extent of groundwater impacts had not yet been delineated; however, impacts were identified within 50 feet of the subject property. Impacts from this site may have impacted the subject property via soil, groundwater, and/or vapor.

- Chet's Car Care Center, located at 2020 Aberg Ave, directly north of the subject property across Aberg Avenue, was identified in the RCRA database as a Very Small Quantity Generator (generates less than 100 kg of hazardous waste during a calendar month) of ignitable wastes and lead. Based on RCRA records, the facility has been in operation since circa 1991. The company website indicates that it opened in 1984. No violations were reported for the site. Two 878-gallon waste/used oil ASTs are registered to the site. While no violations have been identified, Chet's Car Care Center is located upgradient from the subject property and has been in operation for around 30 years. Potential releases associated with automotive repair activities may have impacted the subject property via groundwater.

- The Burke Wastewater Treatment Plant site (BRRTS #02-13-315773) was identified in the ERP and PFAS databases as an open ERP site. The site is located at 1401 Packers Ave, northeast of the subject property across the intersection of Packers Ave and Aberg Avenue. According to site documents, the Burke Wastewater Treatment Plant operated on this site from 1914 to 1936 and 1942 to 1978. Prior to 1950, the plant was a public utility and received domestic sewage. After 1950, the plant was operated by Oscar Mayer and treated wastewater from the Oscar Mayer plant. Oscar Mayer constructed a series of sludge lagoons in the northeast section of the site and also used the site for landfilling of ash from coal combustion and waste products (hair and toenails) from the meat processing plant. In 1981, the site was sold to Reynolds Transfer and Storage Co. In the 1980s and 1990s, the lagoons were filled in and buried.

  In March 2002, REA advanced soil borings and installed groundwater monitoring wells on the ERP site. Soil and groundwater samples were collected from the southwest section of the site, near the historical sludge drying beds. Soil samples from the southwest section of the site contained concentrations of arsenic and cadmium which were greater than their respective groundwater pathway RCLs and BTVs. The arsenic concentration was also greater than the direct contact RCL. Chromium and lead were present in groundwater samples collected from the southwest section of the site at concentrations greater than their respective ESs.

  In August 2019, soil and groundwater samples from the Burke Wastewater Treatment Plant site were tested for the presence of PFAS. One or more PFAS constituents was detected in each sample. At the time of this report's publication, Wisconsin does not have final groundwater standards for PFAS constituents; however, the groundwater sample collected closest to the subject property (TW-4, located roughly 650 feet east northeast of the subject property) contained a combined concentration of PFOS and PFOA of 23.7 ng/L, which is greater than the proposed groundwater ES of 20 ng/L. The Amended SIWP for the site, submitted to

the WDNR in December 2018 by Seymour Environmental Services Inc., indicates that groundwater flow on the ERP site is to the southwest. The site is bordered to the north by the former Truax Field Landfill, which was used by the City of Madison and the U.S. Army from 1942 to 1972. The Truax Field Landfill was identified in the State Hazardous Waste Sites (SHWS) database. The landfill was added to the hazard ranking system list in 1994. Considering that the landfill was used by a nearby airfield, the PFAS contamination may have originated at the landfill.

It should be noted that, based on a review of aerial photographs, Burke Wastewater Treatment Plant operations likely extended onto the eastern edge of the subject property until the re-alignment of Packers Avenue in the mid-1960s. A roughly 6,000 square-foot section of the subject property, which was then east of Packers Ave, is depicted as disturbed land in the 1955 aerial photograph. Groundwater contamination from the Burke Wastewater Treatment Plant site and/or Truax Field Landfill may have impacted the subject property. Additionally, waste materials associated with the Burke Wastewater Treatment Plant may be buried on the subject property.

Controlled Recognized Environmental Conditions (CRECs)

Additionally, this assessment has revealed evidence of the following CRECs at the subject property:

- In 1998, a cylinder on an elevator broke, resulting in a reported release of 75 gallons of hydraulic oil (BRRTS #04-13-227692/04-13-227043). Based on the date and nature of the release, a Request for No Further Action report prepared by BT^2, which was included in the site file for an unrelated ERP case, applied to this spill. No correspondence from the WDNR concerning the release was identified, so it is unclear if the WDNR recommended any additional actions. According to the Request for No Further Action, submitted to the WDNR on March 3, 1999, the freight elevator in Building 43 malfunctioned on October 22, 1998, resulting in a release of 140 gallons of hydraulic oil. Approximately 64 gallons of the hydraulic oil was recovered, and the elevator system was replaced. No further remedial actions were discussed. Approximately 75 gallons of hydraulic oil was left in place below Building 43, possibly impacting the subject property via soil or groundwater.

- The Oscar Mayer Inc. site (BRRTS #02-13-000895) is a closed ERP site with continuing obligations, located in the central section of the subject property. According to the BRRTS database, the ERP case was opened in 1984; however, no documents from the period between 1984 and 1993 were included in the site file. According to the July 2006 Closure Request submitted to the WDNR by BT^2, the ERP case was opened to address chlorinated solvent impacts discovered in groundwater from production wells installed in the bedrock on the subject property. The report figures indicate that Production Well #5, located in the northwest corner of the subject property, extended to a depth of 400 feet bgs, with a well casing extending to a depth of 225 feet bgs. Quarterly groundwater samples from Production Well #5 collected between 1986 and 1993 indicated that TCE levels ranged from 1.37 to 5.64 ppb (ug/L), exceeding the ES of 5 ug/L, and PCE levels ranged from below detection level to 37.9 ppb (ug/L), exceeding the ES of 5 ug/L. Production well data from after 1993 was not included in the site file.

In 1994, CRA advanced soil borings and installed monitoring wells to depths of up to 56 feet bgs, which indicated that a plume of chlorinated substances (1,2-dichloroethene and vinyl chloride) was present. Groundwater samples collected by BT^2 between 1994 and 2005 indicated that impacts were generally limited to the central section of the subject property and concentrations generally followed a downward trend throughout the monitoring period. BT^2 concluded that the area of ES exceedance for vinyl chloride extended to between 50 and 60 feet bgs. The site was granted a conditional closure in 2006.

Considering that the modeled extent of ES exceedances for chlorinated compounds in groundwater did not extend below 60 ft bgs in 2005, it is unlikely that this plume was the source of impacts detected in production wells at depths of over 225 bgs in the 1980s.

A 2006 memorandum to the site closure committee stated that in 1986, a spill of chlorinated solvents occurred in a drum storage area, thought to be west of Building 28, southwest of the subject property. In 1987 and 1988, approximately 110 cubic yards of contaminated soil was excavated and treated on site. No data from the remedial action was included in the site file. Sigma reviewed an excavation photo included in the site file. Based on aerial photographs and site maps from the 1980s, the excavation was most likely to the west of Building 43, directly west of the subject property. Considering the general southerly direction of groundwater flow on the subject property and the relative locations of the two identified areas of groundwater impacts, it is unlikely that spill of chlorinated solvents was the source of those impacts.

A review of the site file indicates that at least three sources of chlorinated compounds are likely to have impacted the subject property via soil and/or groundwater.

EDR identified several properties in the vicinity of the subject property on one or more of the environmental databases. Based on the relative distance between the reported sites and the subject property and/or the reported site status, the identified sites are not expected to impact the subject property, with the exception of the following site:

- The Madison Metro North Transfer Point site (BRRTS #02-13-524010) was identified in the ERP database as a closed ERP site with continuing obligations. The site is located at 1201 Huxley Street, adjacent to the west of the subject property across the railroad right-of-way. The ERP case was opened in 2004 to address impacts from four 10,000-gallon fuel oil USTs and eight 10,000-gallon fuel oil ASTs. According to the continuing obligations packet, contaminants of concern included benzene, toluene, ethyl benzene and xylenes, as well as select PAHs. Soil and groundwater samples collected in 2004 and 2005 indicated that soil and groundwater extended into the railroad right-of-way. The ERP case was closed in 2006, with residual soil and groundwater contamination. While groundwater samples collected from one monitoring well on the subject property did not contain any exceedances, impacts may extend onto the subject property.

The Phase I Environmental Site Assessment has been performed in conformance with the scope and limitations of ASTM Practice E1527-13. This assessment has revealed evidence of recognized environmental conditions at the subject property.
With the exception of time constraints there were no limiting conditions to this report. Where observations were limited, Sigma renders no opinion as to the presence of hazardous substances, wastes or contamination potential.

The conclusions included in this assessment report should not be construed as legal advice. This practice is intended to reflect a commercially prudent and reasonable inquiry as no environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with the subject property. Performance of the ASTM E1527-13 practice is intended to reduce, but not eliminate that uncertainty. Finally, even a finding of no recognized environmental conditions is not a warranty or guarantee that the property is free from contamination.

ERM identified the following RECs for the subject property parcel:

- "BRRTS #02-13-580722: As part of a Phase II ESA conducted by ERM on behalf of 910 Mayer LLC, concentrations of volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and lead detected in soil and/or groundwater above WDNR criteria in soil borings installed in the vicinity of three former filling stations located in the East parking lot. The WDNR was notified of the release on 1 December 2017. A site investigation work plan (SIWP) was submitted to the WDNR in October 2018. The results of investigations completed in 2019 were submitted to the WDNR in a letter dated June 17, 2019." While not located on the subject property itself, the northernmost filling station was located directly south of the subject property. This site may have impacted the subject property.

- "BRRTS #02-13-580721: As part of a Phase II ESA conducted by ERM on behalf of 910 Mayer LLC, concentrations of chlorinated volatile organic compounds (CVOCs), primarily 1,2-dichloroethane (ethylene dichloride), PAHs, arsenic and lead in soil and/or groundwater were detected above WDNR criteria in the vicinity of the former ethylene dichloride ASTs located in the unpaved grassy area south of Building 59. Concentrations of 1,2-dichloroethane have also been detected in groundwater to the south of the Subject Property at the Demetral Landfill. The WDNR was notified of the release on 1 December 2017. A SIWP was submitted to the WDNR in October 2018. The results of investigations completed in 2019 were submitted to the WDNR in a letter dated June 17, 2019." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

- "BRRTS #02-13-580723: As part of a Phase II ESA conducted by ERM on behalf of 910 Mayer LLC, CVOCs were detected in sub-slab soil gas samples collected in and around the former spice room located in Building 43. The WDNR was notified of the release on 1 December 2017. A SIWP was submitted to the WDNR in October 2018. The results of investigations completed in 2019 were submitted to the WDNR in a letter dated June 17, 2019." This site is located on the subject property and has impacted the subject property.

- "BRRTS #02-13-580328 & #02-13-579045: Two Notifications of hazardous substance discharge were issued by the WDNR in 2017 for the Hartmeyer Property. These are related to diesel fuel releases on the Hartmeyer Estate property. These incidents are listed as open incidents in the WDNR database, but closure documentation has been submitted for the 02-13-580328 incident. This property is across the railroad right of way from the 910 Mayer property, but impacts may extend onto the 910 Mayer property." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

ERM also identified the following CRECs:

- "BRRTS #03-13-001744: The WDNR was notified on November 13, 1992 of a petroleum release associated with the removal of an underground storage tank. The BRRTS report states that soil contamination was present. The activity was closed on August 11, 1993. The location of the leaking underground storage tank (LUST) is unknown and no further information is available." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

- "BRRTS #02-13-000895: Chlorinated compounds were detected in four on-Site groundwater wells in 1986. In 1994 the WDNR was notified of concentrations above Preventative Action Levels. The WDNR approved final closure of the activity on December 7, 2006. The activity is listed on the GIS registry, showing remaining vinyl chloride impacts above enforcement standards (ESs) in the area beneath and north of the processing plant." This site is located on the subject property and has impacted the subject property.

- "BRRTS #02-13-221826: The WDNR was notified on March 4, 1999 of a release associated with soil contamination. The location and nature of the contamination is unknown. The activity was closed on May 13, 1999." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

- "BRRTS #03-13-114831: A 1997 investigation into potential impacts from three removed USTs led to the discovery of petroleum impacts. Groundwater monitoring activities continued in the area of contamination until 2005. Final closure was granted from the WDNR on 25 May 2006. The activity is listed on the GIS registry to document remaining soil and groundwater impacts. Asphalt barrier maintenance remains a condition of the activity closure." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

ERM also identified the following HREC:

- "A 12,000 gallon UST containing diesel fuel was excavated and removed from the Site in 2015. Four soil samples were collected from the sidewalls of the excavation and analyzed for VOCs. All detections were below the Wisconsin Administrative Code Residual Contaminant Levels (RCLs)." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

Selections from the 2019 ERM Phase I ESA are included as **Appendix B**.

Ms. Bemis also provided a copy of a Phase I ESA prepared by ERM in 2017. The Phase I ESA covered the entirety of the subject property parcel, including the area to the south of the subject property. ERM stated that meat processing operations on the subject property ceased in 2017. ERM also ERM identified the following RECs:

- "Chemical use and storage – solvents, petroleum products, grease tanks, a "tank room", laundry, fuel oil in above ground storage tanks, a paint shop, wastewater treatment system with associated chemical usage, a garage with gasoline tanks (presumably underground), three former filling (gasoline) stations on the east portion of the Central area, and reported insecticide manufacturing." While most of the listed chemical uses and storage operations occurred to the south of the subject property, documented impacts from releases of chlorinated solvents have occurred on the subject property.

"Historic Spills – spills of transformer oils containing PCBs, hydraulic oils, antifreeze, petroleum, waste oil, sulfuric acid, sodium hydroxide, bleach (chlorinated water) were reported to the WDNR. Of note, a 14,000 gallon release of fuel oil from an underground pipe serving former fuel oil ASTs situated on a leased parcel west of the facility occurred in 1989. These are listed as closed incidents, some with remaining residual impacts left in place." With the exception of a release of hydraulic oil from an elevator, significant reported spills which would negatively impact the subject property have not been identified.

- "Chlorinated VOCs in Groundwater – the presence of CVOCs in groundwater exceeding state preventive action limits (PALs) was reported to WDNR in 1986. The issue was reportedly closed with WDNR in 2006." Chlorinated VOCs have impacted the subject property groundwater.
- "Chemical and Waste Storage Areas – stained concrete was observed in numerous locations including where chemicals and wastes were stored, and in several areas near floor drains that discharge to the wastewater treatment plant (oil room, former maintenance rooms, spice room, Maintenance Building 20, Powerhouse)." Sigma observed stained concrete throughout the subject property buildings.

- "Historic Fill – Prior to site development, fill was placed on the subject property which included marshy areas. Review of historic information as well as the Ramboll-Environ Phase I ESA indicated a fly ash disposal area was present on the northeast corner of the Central area." Soil borings indicate that fill materials were placed on the subject property. The subject property may have been impacted by the fill materials.

ERM identified the following CRECs:

- "BRRTS #03-13-001744: The WDNR was notified on 13 November 1992 of a petroleum release associated with the removal of an underground storage tank. The BRRTS report states that soil contamination was present. The activity was closed on 11 August 1993. The location of the LUST is unknown and no further information is available." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

- "BRRTS #02-13-000895: Chlorinated compounds were detected in four on-Site groundwater wells in 1986. In 1994 the WDNR was notified of concentrations above Preventative Action Levels. The WDNR approved final closure of the activity on 7 December 2006. The activity is listed on the GIS registry, showing remaining vinyl chloride impacts above ESs in the area beneath and north of the processing plant." The subject property groundwater has been impacted with chlorinated compounds.

- "BRRTS #02-13-221826: The WDNR was notified on 4 March 1999 of a release associated with soil contamination. The location and nature of the contamination is unknown. The activity was closed on 13 May 1999." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

- "BRRTS #03-13-114831: A 1997 investigation into potential impacts from three removed USTs led to the discovery of petroleum impacts. Groundwater monitoring activities continued in the area of contamination until 2005. Final closure was granted from the WDNR on 25 May 2006. The activity is listed on the GIS registry to document remaining soil and groundwater impacts. Asphalt barrier maintenance remains a condition of the activity closure." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

ERM identified the following HREC:

- "A 12,000 gallon UST containing diesel fuel was excavated and removed from the Site in 2015. Four soil samples were collected from the sidewalls of the excavation and analyzed for VOCs. All detections were below the Wisconsin Administrative Code RCLs." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

Selections from the 2017 ERM Phase I ESA report are included as **Appendix C**.

The 2017 Phase I ESA report also references a 2016 Phase I ESA prepared by Ramboll Environ US Corporation (Ramboll Environ), which was completed prior to the end of meat processing activities. The 2016 Phase I ESA covered a roughly 70-acre site which included properties to the east and west of the subject property parcel. Ramboll Environ stated that certain raw materials, including corn syrup, potassium lactate, brine/salt, carbon dioxide, and nitrogen were stored in exterior ASTs to the north of the processing plant. Based on the description provided, these were most likely the ASTs depicted between Building 43 and Building 50 in historical aerial photographs. The report describes several processes which likely occurred in Building 43:

- "Spice Manufacturing – Spices are manufactured on the first floor of the processing plant using a variety of dry spices and wet products (i.e., oils, liquid smokes) that are blended in three mixers. The spices are packaged and used on site or shipped to other Kraft Heinz locations for use."
- "Extruding – A plastic extrusion line is located on the ground floor of the processing building and uses three types of resin (polyvinyl chloride, vinyl acetate, and a barrier resin) to create a three-layered, food-grade plastic wrap that is used to package hot dogs."
- "Packaging – Finished meat products are weighed, scanned, sent through a metal detector, labeled, and placed in cardboard boxes for storage or shipping. Warehouse/storage areas located on site house meat products manufactured on site, as well as other Kraft Heinz products that were manufactured off-site (i.e., cream cheese, sauerkraut)."

Facility personnel stated that, while chlorinated solvents were not used at the facility at the time of the report, they "may have been used on site for cleaning after the slaughtering process and during spice extraction activities." Chlorinated solvents used for spice extraction included trichloroethylene (TCE), 1,1-dichloroethylene, and methylene chloride. PCE was used to clean glue pots.

Ramboll Environ reviewed a previous environmental report, likely the 1994 Phase I ESA completed for the subject property by Conestoga-Rovers & Associates, which stated that a former fly ash disposal area was located in the northeast corner of the subject property. This report was not included in the provided documents.

Ramboll Environ reviewed online documentation available through the USEPA, which indicated that insecticides, including space spray, pyrethrum, and lethane, were manufactured on the Oscar Mayer property in the late 1960s. The Ramboll Environ report did not elaborate on the source of this information. Sigma conducted a search of the USEPA's Pesticide Product Information System (PPIS) and determined that Oscar Mayer & Co., located at 910 Mayer Ave, was a registered (Company Number 8514) manufacturer of three insecticides:

- Space Spray (USDA/EPA Registration Number 8514-2, no stock item number listed), an insecticide which was first registered in 1964 and accepted by the USEPA in 1967. The product label for Space Spray kept by the USEPA is largely illegible. No legible ingredient information was included.
- Pyrethrum Insecticide for Fogging (USDA/EPA Reg. No. 8514-3, Stock Item 91-0034), an insecticide which was first registered in 1964 and accepted by the USEPA in 1967. The product label states that it contained 0.3% pyrethrins, 1% technical piperonyl butoxide, and 98.7 petroleum distillate.
- Lethane Insecticide for Fogging (USDA/EPA Reg. No. 8514-4, Stock Item 91-036), an insecticide which was first registered in 1964 and accepted in 1968. The ingredient section of the product label is largely illegible. A product label for lethane produced by Rohm & Haas indicated that lethane contained 53% beta-butoxy beta-thiocyano diethyl ether and 47% petroleum distillate.

The manufacturing of all three insecticides was considered inactive as of May 1, 1987. Sigma also reviewed an online copy of the *List of Chemical Compounds Authorized for Use Under USDA Meat, Poultry, Rabbit, and Egg Products Inspection Programs*, prepared by the USDA and effective as of July 1, 1975. In addition to Space Spray, lethane and pyrethrum, the insecticide chlordane was authorized for use for Oscar Mayer.

The appendices of the 2016 Phase I ESA report included an undated set of detailed maps for the production facility. Based on the buildings and features depicted, the map was originally prepared sometime in the 1950s or 1960s, then updated through at least 1971. Pertinent information from the site plans includes the following:

- The building located to the west of the subject property across the railroad right-of-way had eight outdoor fuel oil ASTs. Six had capacities of 14,600 gallons, while two had capacities of 20,800 gallons.
- The outdoor storage tanks located to the east of Building 43 in the 1960s were most likely lard storage tanks.
- The northeast section of the second floor of Building 43 was used to manufacture plastics, while the southeast section of both floors of Building 43 were used to manufacture spices.
- The plans included construction years for the two main subject property buildings. According to the plans, Building 50 was constructed in 1963 and Building 43 was constructed in 1971.

- The two large storage tanks on the western side of Building 50 contained powdered saran.
- The section of Building 50 below the former mezzanine was used to manufacture plastic wrapping material.

Ramboll Environ identified the following REC for the Oscar Mayer property:

- "Potential Impacts from the Historical Industrial Operations. The Central Property portion of the site has been operated as a meat processing and packaging facility since at least 1915. Related operations have historically involved (and currently involve) equipment and machinery which required the use of chemicals, including solvents, petroleum products, acids, and maintenance-related products. Soil and groundwater sampling activities were performed on site between 1986 and 2006 in specific portions of the site and were tailored to address releases from tanks or other spills. The site is not currently the subject of regulatory scrutiny related to contamination matters. Specific operations associated with the historical industrial use of the Central Property include: 1) tank rooms of unknown use identified on historical Sanborn maps; 2) gasoline filling and repair stations in the 1950s and 1960s; 3) past manufacturing of insecticides in the late 1960s; 4) reported historical use of chlorinated solvents on portions of the site that were not sampled as part of the CVOC Environmental Repair Program (ERP) closure (discussed further below); 5) below-grade/above-grade features of unknown status, including a zinc chloride tank, five gasoline tanks, and a below-ground automobile lift; and 6) former coal storage areas. In addition, the northern portion of the East Property may have been included within the boundaries of a former north adjacent landfill/wastewater treatment facility; and the West Property was previously used as a former coal and fuel manufacturing facility, and the northeastern portion where the ASTs were previously located was remediated (as discussed below)." Landfilling and the use of chlorinated solvents may have impacted the subject property.

Ramboll Environ identified the following CRECs for the property:

- "Chlorinated VOCs in Groundwater. The Central Property of the site was assigned ERP #02-13-000895 following the discovery of chlorinated compounds in four on-site groundwater wells in 1986. The chlorinated compounds detected in groundwater included TCE; cis-1,2-dichloroethylene; vinyl chloride; xylene; ethyl benzene; toluene; methylene chloride; chlorobenzene; and acetone. In 1994, the Wisconsin Department of Natural Resources (WDNR) was notified that the concentrations of chlorinated compounds in the wells were detected above state PALs. Between July 2001 and April 2005, semi-annual groundwater monitoring was performed at the site. Based on the results of the sampling activities, the WDNR approved final closure of this ERP listing on December 7, 2006, which was listed on their GIS Registry to document residual groundwater impacts on site. A review of the WDNR Geographic Information System (GIS) Registry file for this ERP listing indicates that vinyl chloride impacts above ESs are limited to the area beneath and immediately north of the processing plant. Although residual groundwater contamination may remain, because closure has been granted, Ramboll Environ considers this matter to represent a CREC." The subject property was impacted by chlorinated compounds in the groundwater.

- "Removed Petroleum Underground Storage Tanks (USTs). Three USTs, a 10,000-gallon gasoline UST (removed 1986), and 9,500-gallon gasoline and 10,000-gallon diesel fuel USTs (removed 1996), were located outside the maintenance shop's west exterior wall, at the southern portion of the shop. An investigation was conducted to evaluate the extent of potential soil and groundwater impacts associated with releases from the USTs in 1997. As petroleum impacts were discovered, Leaking UST (LUST) #03-13-114831 was assigned to the site. Groundwater monitoring activities continued to be performed in this area until 2005. The WDNR approved final closure on May 25, 2006 and listed this LUST on their GIS Registry to document residual soil and groundwater impacts, including residual soil contamination (gasoline range organics [GROs], diesel range organics [DROs], and benzene, toluene, ethylbenzene, and xylenes [BTEX]) and petroleum-impacted groundwater beneath the maintenance shop and outside the shop, near its west-central portion. The maintenance of an asphalt barrier near the documented residual soil impacts was assigned as part of the LUST closure. Although residual contamination remains on site, because closure has been granted, Ramboll Environ considers this matter to represent a CREC." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

- "West Property Aboveground Storage Tanks (ASTs). On March 19, 2004, KL Engineering identified petroleum impacts in soil during parking lot construction activities on the northeast corner of the West Property and reported a release to the WDNR. Subsequently, a Leaking AST (LAST) incident and ERP #02-13-524010 were assigned to the site. The West Property was formerly operated by a coal and fuel facility and contained twelve 10,000-gallon fuel oil ASTs that were removed between 1975 and 1985; the release was identified in the area of these former ASTs. Initial response activities included excavating 489 tons of petroleum-impacted soils and removing approximately 9,000 gallons of petroleum-impacted groundwater from the excavation. Following additional sampling activities, the WDNR approved final closure of the ERP on February 8, 2006 and listed this ERP on their GIS Registry to document residual soil and groundwater impacts. Although residual contamination remains on-site, because closure has been granted, Ramboll Environ considers this matter to represent a CREC." While the release was not located on the subject property, impacts from this site may extend to the subject property.

- "2014 UST Closure. A 12,000-gallon diesel fuel UST was excavated and removed from an area outside the west wall of the maintenance shop in 2015. Water was observed in the excavation; however, no sheens were visible on the water. A total of four confirmatory soil samples were collected from sidewalls of the excavation and analyzed for petroleum VOCs; soil samples were not collected from the base of the excavation, due to the presence of water, or the east sidewall of the excavation, due to the presence of the maintenance shop's foundation. VOC concentrations ranged between <0.025 ppm to 0.041 parts per million (ppm), but all detections were below the Wisconsin Administrative Code (WAC) NR 720 RCLs Protective of Groundwater Quality values. As the petroleum VOCs concentrations were below reportable levels, Ramboll Environ considers this matter to represent a CREC." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

Ramboll Environ also noted a significant data gap, which prevented a determination of whether the following was a CREC or an HREC:

- "1999 ERP and 1992 LUST Listings. Ramboll Environ has insufficient information regarding two incidents that have been closed by the WDNR: a 1999 ERP and a 1992 LUST report. The site (Oscar Mayer Lift) was enrolled into the ERP on March 4, 1999 (ERP #02-13-221826); an end date of May 13, 1999 was assigned to its closure. A LUST (#03-13-001744) was reported by Oscar Mayer Foods in November 1992 in association with a release of petroleum and was granted closure in August 1993. Although both incidents are listed as closed, facility personnel had no information pertaining to these listings and no documentation was available online. Information was requested from the WDNR; however, a response has not yet been received. This lack of information represents a significant data gap. Absent further information, Ramboll Environ cannot confirm whether these issues would be classified as CRECs or HRECs." These sites are not located on or adjacent to the subject property and are not expected to impact the subject property.

Ramboll Environ also noted additional findings, which while not considered RECs, were considered contingent risks:

- "West Adjacent Property Fuel Oil Release. In February 1989, Oscar Mayer notified the WDNR of a release of approximately 14,000 gallons of #2 fuel oil from buried underground piping that serviced current (and historical) fuel oil ASTs located on a leased property adjacent to the west of the processing plant. Three monitoring wells were advanced on the site (i.e., Central Property) adjacent to the railroad tracks for the collection of groundwater samples. The results did not identify groundwater contamination in these wells. Although contamination remains on the west adjacent property, closure was granted by the WDNR." This site is not located on or adjacent to the subject property and is not expected to impact the subject property.

- "Fill Materials. Before site development in the early 1900s, the site and surrounding areas consisted of marshy areas that were subsequently filled during development. Water well logs for the Central Property that date back to the 1930s documented drift, fill, and muck in site soils. Following adjacent roadway construction activities in the 1960s, the entire East Property appeared graded/disturbed. In addition, a former fly ash disposal area was present on the northeast corner of the Central Property, beneath the current parking lot; dates of use of this disposal area were not provided. No further information regarding the source(s) of fill used to grade the site was available." Soil borings indicate that fill materials were placed on the subject property. The subject property may have been impacted by the fill materials.

- "Potential Migration of Contamination from Off-site Properties. The site is located adjacent to and in the presumed downgradient direction from two off-site properties listed on databases indicative of potential soil or groundwater contamination. The former Burke WWTP and former Truax Landfill located adjacent to the north-northeast of the site are listed with an open ERP listing and as a SHWS and a portion of the landfill/wastewater treatment facility may have extended onto the East Property; a portion of the Burke WWTP / Truax Landfill has been redeveloped as a shopping center. The database stated that the presence of chlorinated solvents on the northeastern portion of the Central Property may have been the result of the

operation of the landfill. Based on the available information, there is no indication as to whether contamination at these adjacent properties represents a significant contamination risk to the site; however, consistent with ASTM requirements, Ramboll Environ has attempted to undertake a further review of the listings through submission of a FOIA request to the WDNR. At the time of this report, Ramboll Environ was still awaiting a reply and this is, therefore, considered a data gap. Also, one property located potentially upgradient of (but not adjacent to) the site is listed on a database indicative of potential soil and groundwater contamination. Specifically, ShopKo Store No. 034 (approximately 0.7 miles northeast of the site) is listed as a Brownfields. If contamination associated with off-site properties is found to have migrated onto the site, it is expected that any remedial activities would be the responsibility of the entity(ies) named in the listing or other designated responsible party and not Kraft Heinz." Based on the available information, contaminated groundwater from the Burke WWTP site and/or the Truax Landfill may have migrated onto the subject property.

Selections from the 2016 Ramboll Environ Phase I ESA report are included as **Appendix D**.

3.4 Valuation Reduction of Environmental Issues

In accordance with the ASTM standard, Sigma requested information from Ms. Bemis regarding value reduction of the subject property to comparable properties. Ms. Bemis reported that, while the purchase price is presently under negotiation, concerns over environmental conditions will be taken into consideration while determining the purchase price.

3.5 Owner, Property Manager, and Occupant Information

On March 30, 2020, Sigma interviewed Ms. Chelsea Greiwe, Vice President of Real Estate for Rabin, which manages the subject property (the subject property is owned by 910 Mayer LLC, a partnership between Rabin Worldwide and Reich Brothers). Ms. Greiwe provided a copy of the 2019 Phase I ESA, discussed in Section 3.3 of this report, which summarizes Rabin's knowledge of the historical use of the subject property and potential environmental concerns associated with the property.

Sigma also reviewed a brochure for the Oscar Mayer property, which was prepared by Rabin. The brochure states that Building 43 is a 57,240 square-foot building and Building 50 is a 79,925 square-foot building.

3.6 Reasons for Performing Phase I

The purpose of this report is to qualify for the innocent landowner defense to CERCLA liability and to assist the user in making business decisions in regard to the subject property.

4.0 RECORDS REVIEW

4.1 Standard Environmental Record Sources

Sigma utilized the services of Environmental Data Resources (EDR) to provide regulatory data, meeting the ASTM Standard E 1527-13, from Federal and State agencies. The federal regulatory data includes the National Priorities List (NPL), the Resource Conservation and Recovery Act (RCRA) notifiers, the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database, and the Emergency Response Notification System (ERNS) database. The state data includes the Leaking Underground Storage Tanks (LUST) list, the Registered Underground Storage Tank list, and the State Solid Waste Facilities/Landfill Sites list. During review of the data provided by EDR, Sigma focused on sites within a 1.0-mile radius or less of the property. The EDR summary report is included as **Appendix E** of this Phase I Environmental Site Assessment report. The findings of select inventories are discussed below.

4.1.1 National Priority List

The EPA publishes a National Priorities List (NPL) of sites included in the "Superfund" program as authorized by CERCLA and the Superfund Amendments and Reauthorization Act (SARA). EDR did not identify the subject property as a "Proposed" Superfund, Superfund or "Delisted" Superfund site, nor were "Proposed" Superfund, Superfund or "Delisted" Superfund sites identified within a 1.0-mile radius of the subject property.

4.1.2 Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)

The CERCLIS list is a compilation of known or suspected uncontrolled or abandoned hazardous waste sites that are under investigation or have been investigated by the EPA to determine if the site(s) should be remediated under the Superfund program. EDR did not identify the subject property as a CERCLIS or CERCLIS - No Further Remedial Action Planned (NFRAP) site, nor were CERCLIS or CERCLIS-NFRAP sites identified within a 0.50-mile radius of the subject property.

4.1.3 Resource Conservation and Recovery Act Corrective Action Report (CORRACTS)

The United States EPA maintains the CORRACTS database. The database includes RCRA facilities, which are undergoing corrective action due to a release of hazardous waste or constituents into the environment. EDR did not identify the subject property as a CORRACTS site, nor were CORRACTS sites identified within a 1.0-mile radius of the subject property.

4.1.4 Resource Conservation and Recovery Act (RCRA)

RCRA includes selective information compiled by the EPA on sites which generate, store, transport, treat, and/or dispose of hazardous waste. EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the RCRA database as an active Large Quantity Generator (generates 1,000 kg or more of hazardous waste during a calendar month) of ignitable and corrosive wastes, as well as waste lead, mercury, PCE, TCE, nonhalogenated solvents, and dichloromethane or methylene chloride, and byproduct salts generated in the production of MSMA and cacodylic acid. The facility has received notices of violations, which were subsequently corrected.

Additionally, four RCRA hazardous waste generators were identified within a 0.25-mile radius of the subject property. Chet's Car Care Center, located at 2020 Aberg Ave, directly north of the subject property across Aberg Avenue, is a Very Small Quantity Generator (generates less than 100 kg of hazardous waste during a calendar month) of ignitable wastes and lead. The facility has been in operation since circa 1991. No violations were reported for the site.

Based on the relative distance between the remaining reported sites and the subject property and/or the site status, the RCRA sites are not expected to impact the subject property.

EDR did not identify the subject property as an RCRA-Treatment, storage, or disposal facility (TSDF), nor were RCRA-TSDFs identified within a 0.50-mile radius of the subject property.

4.1.5 Emergency Response Notification System (ERNS)

The ERNS list contains information on reported releases of oil and hazardous substances. EDR identified the 910 Oscar Ave parcel, which includes the subject property, as an ERNS site with 24 reported releases. Various operator errors and equipment failures resulted in 17 reported releases of up to 110 pounds of ammonia between 1993 and 2012. The other seven reported releases were as follows:

- In 1991, a release of ammonia, chlorine, methane arsenic acid, sodium salts and black phosphorus was reported.
- A 1993 equipment failure resulted in a release of 30 gallons of ethylene glycol.
- A 1993 equipment failure resulted in a release of 5 gallons of ethylene glycol.
- A 1993 equipment failure resulted in a release of an unknown amount of ethylene glycol.
- A 1995 break in a hose resulted in a release of 0.5 gallons of diesel fuel.
- A 1995 equipment failure resulted in a release of 15 gallons of hydraulic oil.
- A 2000 sanitary sewer backup resulted in a release of 20 gallons of sewage.

Based on the nature and/or size of releases reported, the listed emergency releases are not expected to significantly impact the subject property.

4.1.6 State Hazardous Waste (SHWS)

The state hazardous waste site record, the Hazard Ranking List, is compiled by the WDNR and is generally the state's equivalent to the CERCLIS list. EDR did not identify the subject property as a state hazardous waste site; however, one SHWS site was identified within a 1.0-mile radius of the subject property:

- The Truax landfill, located on Aberg Avenue, to the northeast of the subject property, was added to the hazard ranking system list in 1994.

Based on impacts identified at the former Burke wastewater treatment plant site, to the east of the subject property, a release from the Truax landfill may have impacted the subject property. See Section 4.2.1 of this report for further details.

4.1.7 State Landfill

The state landfill list, the Registry of Waste Disposal Sites, is compiled by the WDNR and includes an inventory of solid waste disposal facilities or landfills. EDR did not identify the subject property as a state landfill or waste disposal site; however, two state landfill sites and one waste disposal site were identified within a 0.50-mile radius of the subject property. Based on the relative distance between the waste disposal and state landfill sites and the subject property, they are not expected to negatively impact the subject property.

4.1.8 Leaking Underground Storage Tank (LUST)

The LUST list is compiled by the WDNR and contains an inventory of reported LUST incidents. EDR identified several LUST sites on the 910 Mayer Ave parcel; however, based on the available information, the sites are not located on the subject property itself and are not expected to negatively impact the subject property:

- The Oscar Mayer Site #3 (BRRTS #03-13-114831) is a closed LUST site with continuing obligations located in the southeast section of the 910 Mayer St parcel, roughly 900 feet to the south of the subject property. The LUST case was opened in 1996 to address impacts from a 10,000-gallon leaded gasoline UST, a 9,500-gallon unleaded gasoline UST, and a 10,000-gallon diesel UST. At the time of site closure in 2006, residual soil and groundwater contamination were present at the site. Impacts from this site are not expected to impact the subject property.

- The Oscar Mayer Foods site (BRRTS #03-13-001744) is a closed LUST site located on the southeast side of the main Oscar Meyer building, to the south of the subject property. The LUST case was opened in 1992 to address contamination discovered during the removal of a UST. While the size of the UST was not stated in the site file, the dimensions of the initial excavation indicate that the UST had a capacity of 1,900 gallons or less. While some residual soil contamination was present at the time of closure in 1993, this site is not expected to impact the subject property.

- The Oscar Mayer site (BRRTS #03-13-000053) is a closed LUST site located at 2007 Roth Street, southwest of the subject property across the railroad right-of-way. The LUST case was opened in 1989 to address soil and groundwater impacts related to two fuel oil ASTs (likely with capacities of 150,000 and 250,000 gallons) and historical releases along the railroad right-of-way. One AST was removed prior to the site closure, while aerial photographs indicate that the other was present until sometime between 2014 and 2017. Soil and groundwater samples were tested for VOCs and PAHs. The site was closed in 2008 with continuing obligations. Residual soil and groundwater contamination are present, and impacts extend beyond the site. Based on the available information, this site is not expected to negatively impact the subject property.

Additionally, 27 LUST sites were identified within a 0.50-mile radius of the subject property. Based on the relative distance between the reported sites and the subject property and/or the closed status, the LUST sites are not expected to impact the subject property.

4.1.9 Underground Storage Tanks (USTs)
The list of registered USTs is compiled by the State of Wisconsin and contains information on the site name, location, and number of tanks. EDR identified the 910 Mayer St parcel, which includes the subject property, as a registered UST site, with a 250-gallon fuel oil UST, a 9,500-gallon unleaded gasoline UST, a 10,000 gallon leaded gasoline UST, a 10,000-gallon diesel UST, and a 12,000-gallon diesel UST historically located on the parcel. All of the USTs have been removed. Based on available LUST documents and fire department records, none of the USTs were located on the subject property, and they are not expected to impact the subject property.

Additionally, 18 registered UST sites were identified within a 0.25-mile radius of the subject property. Based on the relative distance between the reported sites and the subject property and/or the site status, the UST sites are not expected to impact the subject property.

4.2 Additional Environmental Record Sources

Sigma utilized EDR's services to provide regulatory data, exceeding the ASTM Standard E 1527-13, from Federal and State agencies. During review of the data provided by EDR, Sigma focused on sites within a 1.0-mile radius or less of the property.

4.2.1 Wisconsin Environmental Repair Program (ERP)
The ERP program database is compiled by the WDNR and generally includes non-UST related spills. EDR identified the subject property as an ERP site. Approximate outlines of ERP sites on the subject property are depicted in **Figure 3**.

- The Oscar Mayer Former Spice Room Building 43 site (BRRTS #02-13-580723) is an open ERP site located in the southeast corner of Building 43. The ERP case was opened in 2017 to address CVOCs detected in sub-slab gas samples collected in the vicinity of the former spice room. Concentrations of TCE in sub-slab vapor samples collected below Building 43 ranged from 2.7 to 66,800 ug/m^3, exceeding WDNR sub-slab vapor criteria. In 2019, two rounds of groundwater samples were collected from wells located directly east, west, and south of the building and tested for VOCs. Results for constituents with one or more exceedances are summarized in the table below:
-

Constituent (all values in ug/L)	PAL	ES	SR-MW-14 (East of Building 43) 3-18 ft bgs		SR-MW-15 (West of Building 43) 5-20 ft bgs		SR-MW-16A (South of Building 43) 8-18 ft bgs		SR-MW-16B (South of Building 43) 39-49 ft bgs	
			May 2019	Aug. 2019	May 2019	Aug. 2019	May 2019	Aug. 2019	May 2019	Aug. 2019
Benzene	*0.5*	**5**	<0.25	<0.99	<0.25	<0.25	<0.25	<0.25	*1.3*	*1.3*
Cis-1,2-Dichloroethene	*7*	**70**	*22.4*	**281**	2.3	0.50	<0.27	0.60	*44.7*	**82.3**
1,2-Dichloroethane	*0.5*	**5**	<0.28	<1.1	<0.28	<0.28	<0.28	<0.28	**21.2**	**50.6**
Tetrachloroethene	*0.5*	**5**	<0.33	<1.3	**11.5**	**8.7**	<0.33	<0.33	<0.33	<0.33
Trichloroethene	*0.5*	**5**	<0.26	<1.0	*1.1*	*0.61*	*0.95*	*2.2*	*0.66*	*0.70*
Vinyl Chloride	*0.02*	**0.2**	**51.3**	**68.6**	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17

The subject property has been impacted via groundwater and vapor. A copy of the Remediation Technology Screening report, submitted to the WDNR by ERM in December 2019, is included as **Appendix F**.

- The Oscar Mayer Inc. site (BRRTS #02-13-000895) is a closed ERP site with continuing obligations, located in the central section of the subject property. According to the BRRTS database, the ERP case was opened in 1984; however, no documents from the period between 1984 and 1993 were included in the site file. According to the July 2006 Closure Request submitted to the WDNR by BT^2, the ERP case was opened to address chlorinated solvent impacts discovered in groundwater from production wells installed in the bedrock on the subject property. The report figures indicate that Production Well #5, located in the northwest corner of the subject property, extended 400 feet below ground surface (bgs), with a well casing extending to a depth of 225 feet bgs. Quarterly groundwater samples from Production Well #5 collected between 1986 and 1993 indicated that TCE levels ranged from 1.37 to 5.64 ppb (ug/L), exceeding the ES of 5 ug/L, and tetrachloroethylene (PCE) levels ranged from below detection level to 37.9 ppb (ug/L), exceeding the ES of 5 ug/L. Production well data from after 1993 was not included in the site file.

  In 1994, Conestoga Rovers & Associates (CRA) advanced soil borings and installed monitoring wells to depths of up to 56 feet bgs, which indicated that a plume of chlorinated substances (1,2-dichloroethene and vinyl chloride) was present. Groundwater samples collected by BT^2 between 1994 and 2005 indicated that impacts were generally limited to the central section of the subject property and concentrations generally followed a downward trend throughout the monitoring period. BT^2 concluded that the area of ES exceedance for vinyl chloride extended to between 50 and 60 feet bgs. The site was granted a conditional closure in 2006.

  Considering that the modeled extent of ES exceedances for chlorinated compounds in groundwater did not extend below 60 ft bgs in 2005, it is unlikely that this plume was the source of impacts detected in production wells at depths of over 225 bgs in the 1980s.

  A 2006 memorandum to the site closure committee stated that in 1986, a spill of chlorinated solvents occurred in a drum storage area, thought to be west of Building 28, southwest of the subject property. In 1987 and 1988, approximately 110 cubic yards of contaminated soil was excavated and treated on site. No data from the remedial action was included in the site file. Sigma reviewed an excavation photo included in the site file. Based on aerial photographs and site maps from the 1980s, the excavation was most likely to the west of Building 43, directly west of the subject property. Considering the general southerly direction of groundwater flow on the subject property and the relative locations of the two identified areas of groundwater impacts, it is unlikely that spill of chlorinated solvents was the source of those impacts.

  A review of the site file indicates that at least three sources of chlorinated compounds are likely to have impacted the subject property. Selections from the site file, including production well data and the 2006 memorandum, are included as **Appendix G**.

- The Freight Elevator #43 Hydraulic Oil Release site (no assigned number) was an environmental response site located on the subject property. A Request for No Further Action report prepared by BT^2 was included in the site file for the Oscar Mayer Lift site ERP case (BRRTS #02-13-221826), discussed below. No correspondence from the WDNR concerning the Freight Elevator #43 site was identified, so it is unclear if the WDNR recommended any additional actions. According to the Request for No Further Action, submitted to the WDNR on March 3, 1999, the freight elevator in Building 43 malfunctioned on October 22, 1998, resulting in a release of 140 gallons of hydraulic oil. Approximately 64 gallons of the hydraulic oil was recovered, and the elevator system was replaced. No further remedial actions were discussed. A copy of the Request for No Further Action report is included as **Appendix H**.

The following ERP sites were identified on the 910 Oscar Ave parcel; however, based on the available information, are not located on the subject property itself. These sites may have negatively impacted the subject property:

- The Oscar Mayer Former Filling Station East site (BRRTS #02-13-580722) is an open ERP site located in the east-central section of the 910 Oscar Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of three former filling stations, which were razed around 1968. The northernmost filling station was located directly south of the southeast corner of the subject property. While no records of UST removals were identified, ERM did not find evidence indicating that the USTs were still present. Contaminants of concern include VOCs, PAHs and lead. As of October 2018, when a SIWP was submitted to the WDNR by ERM, the extent of groundwater impacts had not yet been delineated; however, impacts were identified within 50 feet of the subject property. A copy of the SIWP is included as **Appendix I**.

The following ERP sites were identified on the 910 Mayer Ave parcel; however, based on the available information, are not located on the subject property itself and are not expected to negatively impact the subject property:

- The Former 1,2-DCA Tank South site (BRRTS #02-13-580721) is an open ERP site located in the southeast section of the 910 Oscar Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of two former 6,300-gallon ethylene dichloride ASTs. Contaminants of concern include CVOCs, PAHs, arsenic and lead. Based on data in the Remedial Action Options Report submitted to the WDNR by ERM in March 2020, impacts from this site are not expected to impact the subject property.

- The Oscar Mayer Lift site (BRRTS #02-13-221826) is a closed ERP site located on the 910 Oscar Ave parcel. The ERP case was opened in 1999 to address impacts associated with an abandoned 250-gallon UST and closed after two months, with no continuing obligations. The UST was located roughly 500 feet south of the subject property, on the opposite side of the main facility building. According to the tank closure assessment, prepared by Woodward-Clyde Consultants in December 1992, Oscar Mayer representatives knew of “no other tanks, past or present, in the vicinity of the tank” which was removed.

Additionally, 12 ERP sites were identified within a 0.5-mile radius of the subject property. Based on the relative distance between the reported sites and the subject property and/or the closed status, the ERP sites are not expected to impact the subject property, with the exceptions of the following, which are depicted in **Figure 3** and **Figure 4:**

- The Madison Metro North Transfer Point site (BRRTS #02-13-524010) is a closed ERP site with continuing obligations located at 1201 Huxley Street, adjacent to the west of the subject property across the railroad right-of-way. The ERP case was opened in 2004 to address impacts from four 10,000-gallon fuel oil USTs and eight 10,000-gallon fuel oil ASTs. According to the continuing obligations packet, contaminants of concern included benzene, toluene, ethyl benzene and xylenes, as well as select PAHs. Soil and groundwater samples collected in 2004 and 2005 indicated that soil and groundwater extended into the railroad right-of-way. While groundwater samples collected from one monitoring well on the subject property did not contain any exceedances, impacts may extend onto the subject property. The ERP case was closed in 2006, with residual soil and groundwater contamination. A copy of the continuing obligations packet is included as **Appendix J**.

- The Burke Wastewater Treatment Plant site (BRRTS #02-13-315773) is an open ERP site located at 1401 Packers Ave, northeast of the subject property across the intersection of Packers Ave and Aberg Avenue. According to site documents, the Burke Wastewater Treatment Plant operated on this site from 1914 to 1936 and 1942 to 1978. Prior to 1950, the plant was a public utility and received domestic sewage. After 1950, the plant was operated by Oscar Mayer and treated wastewater from the Oscar Mayer plant. Oscar Mayer constructed a series of sludge lagoons in the northeast section of the site and also used the site for landfilling of ash from coal combustion and waste products (hair and toenails) from the meat processing plant. In 1981, the site was sold to Reynolds Transfer and Storage Co. In the 1980s and 1990s, the lagoons were filled in and buried. The site is bordered to the north by the former Truax Field Landfill, which was used by the City of Madison and the U.S. Army from 1942 to 1972.

  In March 2002, REA advanced soil borings and installed groundwater monitoring wells on the ERP site. Soil and groundwater samples were collected from the southwest section of the site, near the historical sludge drying beds. Soil samples from the southwest section of the site contained concentrations of arsenic and cadmium which were greater than their respective groundwater pathway RCLs and background threshold values (BTVs). The arsenic concentration was also greater than the direct contact RCL. Chromium and lead were present in groundwater samples collected from the southwest section of the site at concentrations greater than their respective ESs.

  In August 2019, soil and groundwater samples from the Burke Wastewater Treatment Plant site were tested for the presence of PFAS. One or more PFAS constituents was detected in each sample. At the time of this report's publication, Wisconsin does not have final groundwater standards for PFAS constituents; however, the groundwater sample collected closest to the subject property (TW-4, located roughly 650 feet east northeast of the subject property) contained a combined concentration of PFOS and PFOA of 23.7 ng/L, which is greater than the proposed groundwater ES of 20 ng/L. The Amended SIWP for the site, submitted to

the WDNR in December 2018 by Seymour Environmental Services Inc., indicates that groundwater flow on the ERP site is to the southwest.

It should be noted that, based on a review of aerial photographs, Burke Wastewater Treatment Plant operations likely extended onto the eastern edge of the subject property until the re-alignment of Packers Avenue in the mid-1960s. A roughly 6,000 square-foot section of the subject property, which was then east of Packers Ave, is depicted as disturbed land in the 1955 aerial photograph. A copy of the SIWP and 2019 groundwater monitoring results are included as **Appendix K**.

4.2.2 Lists of Registered Aboveground Storage Tanks

The list of registered ASTs is compiled by the State of Wisconsin and contains information on the site name, location, and number of tanks. EDR identified the Oscar Mayer property in the AST database with a 550-gallon unleaded gasoline AST, a 2,000-gallon diesel AST, a 500-gallon waste/used oil UST, a 150-000-gallon fuel oil AST, and a 250-000-gallon fuel oil AST. All of the ASTs have been removed. Based on aerial photographs and fire department records discussed in Section 6.2.3 of this report, none of these ASTs were located on the subject property. Based on site files discussed in Section 4.2.1 and/or 4.1.8 of this report, the ASTs are not expected to impact the subject property.

Two 878-gallon waste/used oil ASTs are registered to Chet's Car Care Center, located at 2020 Aberg Ave, directly north of the subject property across Aberg Avenue.

4.2.3 Local Land Records

The Dane County Assessor's office was used to verify current recorded ownership information on the subject property. 910 Mayer LLC, a partnership between Rabin Worldwide and Reich Brothers, owns the subject property.

4.2.4 Emergency Release Reports

The WDNR spills inventory was checked by EDR. EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the Wisconsin Spills database with the following releases:

- BRRTS #04-13-039771: In 1984, a release of 50 gallons of PCB-containing mineral oil occurred during the replacement of a transformer. The release was contained and recovered using absorbent.
- BRRTS #04-13-041208: In 1986, the sewer plugged, resulting in a release of up to 1,000 gallons of wastewater.
- BRRTS #04-13-049014: In 1993, a mechanical failure in Building 23 resulted in a release of 40 gallons of antifreeze. The release was cleaned up using absorbent and a vacuum; however, some of the antifreeze likely entered the storm sewer.
- BRRTS #04-13-048202: In 1993, a break in a pipe under the sidewalk resulted in a release of 30 gallons of antifreeze. The spill was cleaned up using absorbent.
- BRRTS #04-13-528788: In 1993, a fire or explosion on an overheated motor in the engine/compressor room resulted in a release of 20,000 pounds of ammonia.
- BRRTS #04-13-049245: In 1994, a tank froze, resulting in a release of three gallons of hydraulic oil. The oil landed on snow, which was removed. The remaining oil was cleaned up using absorbent.
- BRRTS #04-13-050780: In 1995, a break in a discharge line resulted in a release of an unknown amount of engine waste oil into the storm sewer.

- BRRTS #04-13-051030: In 1995, a break in a hose resulted in a release of one gallon of petroleum. The spill was cleaned up using absorbent, but at least some of it entered the storm sewer.
- BRRTS #04-13-051042: In 1995, a mechanical failure resulted in a release of 30 gallons of antifreeze. The spill was cleaned up using absorbent, but at least some of it entered the sanitary sewer.
- BRRTS #04-13-212337: In 1995, a leaking pipe on the 2nd floor of Building 19 resulted in a release of 22 pounds of freon gas. The pipe was subsequently repaired.
- BRRTS #04-13-181521: In 1998, a leak in a pipe resulted in a release of 100 pounds of ammonia.
- BRRTS #04-13-227692: In 1998, a cylinder on an elevator broke, resulting in a release of 75 gallons of hydraulic oil. An environmental contractor was hired.
- BRRTS #04-13-227043: In 1998, a cylinder on an elevator broke, resulting in a release of 75 gallons of hydraulic oil. An environmental contractor was hired.
- BRRTS #04-13-229872: In 1998, a plug in a line resulted in a release of 1,000 gallons of cooling water into the storm sewer.
- BRRTS #04-13-236542: In 1999, a pressure relief valve opened, releasing 440 pounds of ammonia.
- BRRTS #04-13-217917: In 1999, a leaking coil released 20 pounds of ammonia.
- BRRTS #04-13-241160: In 1999, a release of 12 gallons of sulfuric acid occurred.
- BRRTS #04-13-230696: In 1999, a pipeline ruptured, releasing an unknown quantity of ammonia.
- BRRTS #04-13-245306: In 1999, backpressure during the filling of a UST resulted in a release of 12 gallons of petroleum. Sorbent pads were used to clean up the release.
- BRRTS #04-13-248087: In 2000, a cut line resulted in a release of an unknown amount of ammonia.
- BRRTS #04-13-248176: In 2000, an electrical problem resulted in a release of 110 pounds of ammonia.
- BRRTS #04-13-264296: In 2000, a stoppage in the sewer drain resulted in a release of 475 gallons of sewage.
- BRRTS #04-13-271132: In 2000, a faulty component resulted in a release of 100 pounds of ammonia.
- BRRTS #04-13-270923: In 2000, a broken flange resulted in a release of 35 gallons of sodium hydroxide solution.
- BRRTS #04-13-262939: In 2001, a broken line resulted in a release of 100 pounds of ammonia.
- BRRTS #04-13-385350: In 2001, a worker error resulted in a release of an unknown amount of ammonia.
- BRRTS #04-13-391430: In 2002, a pressure gauge failed, resulting in a release of an unknown amount of ammonia.
- BRRTS #04-13-529546: In 2004, a mechanical failure resulted in a release of 190 pounds of ammonia.
- BRRTS #04-13-529401: In 2004, a gasket on a 250,000-gallon reservoir failed, resulting in a release of 8,000 gallons of bleach (chlorinated water).
- BRRTS #04-13-548071: In 2006, a pump failure resulted in a release of 10 gallons of non-hazardous wastewater. The spill was contained and cleaned up.

- BRRTS #04-13-548811: In 2007, planned maintenance revealed a release of 100 pounds of ammonia.
- BRRTS #04-13-551001: In 2008, a sump pump in the wastewater treatment plant failed, resulting in a release of an unknown amount of wastewater.
- BRRTS #04-13-551699: In 2008, a mechanical failure resulted in a release of 68 pounds of ammonia.
- BRRTS #04-13-553120: In 2008, an operator error resulted in a release of 10 pounds of ammonia.
- BRRTS #04-13-555058: In 2010, a release of 1,500 gallons of Quad X 100, a cleaning solution containing 40% sodium hydroxide, occurred during delivery. The wash basin was flushed and an environmental contractor was hired.
- BRRTS #04-13-557915: In 2012, an operator error resulted in a release of 343 pounds of ammonia.
- BRRTS #04-13-558448: In 2012, an unknown quantity of ammonia was released from an over-pressurized refrigeration system.
- BRRTS #04-13-560490: In 2013, a coolant overflow resulted in a release of 3,100 pounds of antifreeze.
- BRRTS #04-13-562776: In 2014, an operator error resulted in a release of 7,000 gallons of a saltwater solution. Some of the release was captured, and some of it entered the storm sewer.

Based on the location and/or nature of each release, the releases are not expected to impact the subject property, with the exception of the 1998 release of 75 gallons of hydraulic oil (BRRTS #04-13-227692/04-13-227043). This spill, discussed in greater detail in Section 4.2.1 of this report, may have impacted the subject property.

4.2.5 RCRA Administration Action Tracking System (RAATS)

RAATS contains records based on the enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. EDR did not identify the subject property in the RAATS database.

4.2.6 Hazardous Materials Incident Report System (HMIRS)

HMIRS contains a log of hazardous material spill incidents, which have been reported to the United States Department of Transportation. EDR identified the subject property in the HMIRS database.

4.2.7 PCB Activity Database (PADS)

PADS identifies generators, transporters, commercial storers and/or brokers, and disposers of polychlorinated biphenyls (PCBs) who are required to notify the EPA of such activities. EDR did not identify the subject property in the PADS database.

4.2.8 Facility Index System (FINDS)

The FINDS list contains facility information related to various environmental registrations and regulatory submissions performed by facilities including obtaining a hazardous waste generator number, annual reporting, etc. The 910 Oscar Ave parcel, which includes the subject property, was identified in the FINDS database as a Large Quantity Generator (generates 1,000 kg or more of hazardous waste in a calendar month) of ignitable and corrosive wastes, lead, mercury, TCE, and spent nonhalogenated solvents. A formal enforcement action was listed for the parcel.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, as an ERNS site with 24 reported releases. Various operator errors and equipment failures resulted in 17 reported releases of up to 110 pounds of ammonia between 1993 and 2012. The other seven reported releases were as follows:

- In 1991, a release of ammonia, chlorine, methane arsenic acid, sodium salts and black phosphorus was reported.
- A 1993 equipment failure resulted in a release of 30 gallons of ethylene glycol.
- A 1993 equipment failure resulted in a release of 5 gallons of ethylene glycol.
- A 1993 equipment failure resulted in a release of an unknown amount of ethylene glycol.
- A 1995 break in a hose resulted in a release of 0.5 gallons of diesel fuel.
- A 1995 equipment failure resulted in a release of 15 gallons of hydraulic oil.
- A 2000 sanitary sewer backup resulted in a release of 20 gallons of sewage.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the Wisconsin Spills database with the following releases:

- BRRTS #04-13-039771: In 1984, a release of 50 gallons of PCB-containing mineral oil occurred during the replacement of a transformer. The release was contained and recovered using absorbent.
- BRRTS #04-13-041208: In 1986, the sewer plugged, resulting in a release of up to 1,000 gallons of wastewater.
- BRRTS #04-13-049014: In 1993, a mechanical failure in Building 23 resulted in a release of 40 gallons of antifreeze. The release was cleaned up using absorbent and a vacuum; however, some of the antifreeze likely entered the storm sewer.
- BRRTS #04-13-048202: In 1993, a break in a pipe under the sidewalk resulted in a release of 30 gallons of antifreeze. The spill was cleaned up using absorbent.
- BRRTS #04-13-528788: In 1993, a fire or explosion on an overheated motor in the engine/compressor room resulted in a release of 20,000 pounds of ammonia.
- BRRTS #04-13-049245: In 1994, a tank froze, resulting in a release of three gallons of hydraulic oil. The oil landed on snow, which was removed. The remaining oil was cleaned up using absorbent.
- BRRTS #04-13-050780: In 1995, a break in a discharge line resulted in a release of an unknown amount of engine waste oil into the storm sewer.
- BRRTS #04-13-051030: In 1995, a break in a hose resulted in a release of one gallon of petroleum. The spill was cleaned up using absorbent, but at least some of it entered the storm sewer.
- BRRTS #04-13-051042: In 1995, a mechanical failure resulted in a release of 30 gallons of antifreeze. The spill was cleaned up using absorbent, but at least some of it entered the sanitary sewer.
- BRRTS #04-13-212337: In 1995, a leaking pipe on the 2nd floor of Building 19 resulted in a release of 22 pounds of freon gas. The pipe was subsequently repaired.
- BRRTS #04-13-181521: In 1998, a leak in a pipe resulted in a release of 100 pounds of ammonia.

- BRRTS #04-13-227692/04-13-227043: In 1998, a cylinder on an elevator broke, resulting in a reported release of 75 gallons of hydraulic oil. An environmental contractor was hired. Two identical BRRTS entries with different BRRTS numbers were generated. Based on the date and nature of the release, a Request for No Further Action report prepared by BT^2, which was included in the site file for an unrelated ERP case, applied to this spill. No correspondence from the WDNR concerning the release was identified, so it is unclear if the WDNR recommended any additional actions. According to the Request for No Further Action, submitted to the WDNR on March 3, 1999, the freight elevator in Building 43 malfunctioned on October 22, 1998, resulting in a release of 140 gallons of hydraulic oil. Approximately 64 gallons of the hydraulic oil was recovered, and the elevator system was replaced. No further remedial actions were discussed. While the BRRTS entry states that the spill was transferred to an ERP case, the new case number (BRRTS #03-13-000053) refers to an unrelated LUST case.
- BRRTS #04-13-229872: In 1998, a plug in a line resulted in a release of 1,000 gallons of cooling water into the storm sewer.
- BRRTS #04-13-236542: In 1999, a pressure relief valve opened, releasing 440 pounds of ammonia.
- BRRTS #04-13-217917: In 1999, a leaking coil released 20 pounds of ammonia.
- BRRTS #04-13-241160: In 1999, a release of 12 gallons of sulfuric acid occurred.
- BRRTS #04-13-230696: In 1999, a pipeline ruptured, releasing an unknown quantity of ammonia.
- BRRTS #04-13-245306: In 1999, backpressure during the filling of a UST resulted in a release of 12 gallons of petroleum. Sorbent pads were used to clean up the release.
- BRRTS #04-13-248087: In 2000, a cut line resulted in a release of an unknown amount of ammonia.
- BRRTS #04-13-248176: In 2000, an electrical problem resulted in a release of 110 pounds of ammonia.
- BRRTS #04-13-264296: In 2000, a stoppage in the sewer drain resulted in a release of 475 gallons of sewage.
- BRRTS #04-13-271132: In 2000, a faulty component resulted in a release of 100 pounds of ammonia.
- BRRTS #04-13-270923: In 2000, a broken flange resulted in a release of 35 gallons of sodium hydroxide solution.
- BRRTS #04-13-262939: In 2001, a broken line resulted in a release of 100 pounds of ammonia.
- BRRTS #04-13-385350: In 2001, a worker error resulted in a release of an unknown amount of ammonia.
- BRRTS #04-13-391430: In 2002, a pressure gauge failed, resulting in a release of an unknown amount of ammonia.
- BRRTS #04-13-529546: In 2004, a mechanical failure resulted in a release of 190 pounds of ammonia.
- BRRTS #04-13-529401: In 2004, a gasket on a 250,000-gallon reservoir failed, resulting in a release of 8,000 gallons of bleach (chlorinated water).
- BRRTS #04-13-548071: In 2006, a pump failure resulted in a release of 10 gallons of non-hazardous wastewater. The spill was contained and cleaned up.
- BRRTS #04-13-548811: In 2007, planned maintenance revealed a release of 100 pounds of ammonia.

- BRRTS #04-13-551001: In 2008, a sump pump in the wastewater treatment plant failed, resulting in a release of an unknown amount of wastewater.
- BRRTS #04-13-551699: In 2008, a mechanical failure resulted in a release of 68 pounds of ammonia.
- BRRTS #04-13-553120: In 2008, an operator error resulted in a release of 10 pounds of ammonia.
- BRRTS #04-13-555058: In 2010, a release of 1,500 gallons of Quad X 100, a cleaning solution containing 40% sodium hydroxide, occurred during delivery. The wash basin was flushed, and an environmental contractor was hired.
- BRRTS #04-13-557915: In 2012, an operator error resulted in a release of 343 pounds of ammonia.
- BRRTS #04-13-558448: In 2012, an unknown quantity of ammonia was released from an over-pressurized refrigeration system.
- BRRTS #04-13-560490: In 2013, a coolant overflow resulted in a release of 3,100 pounds of antifreeze.
- BRRTS #04-13-562776: In 2014, an operator error resulted in a release of 7,000 gallons of a saltwater solution. Some of the release was captured, and some of it entered the storm sewer.

EDR identified the subject property as an ERP site:

- The Oscar Mayer Former Spice Room Building 43 site (BRRTS #02-13-580723) is an open ERP site located in the southeast corner of Building 43. The ERP case was opened in 2017 to address CVOCs detected in sub-slab gas samples collected in the vicinity of the former spice room. Concentrations of TCE in sub-slab vapor samples collected below Building 43 ranged from 2.7 to 66,800 ug/m^3, exceeding WDNR sub-slab vapor criteria. In 2019, two rounds of groundwater samples were collected from wells located directly east, west, and south of the building and tested for VOCs. Results for constituents with one or more exceedances are summarized in the table below:

Constituent (all values in ug/L)	PAL	ES	SR-MW-14 (East of Building 43) 3-18 ft bgs		SR-MW-15 (West of Building 43) 5-20 ft bgs		SR-MW-16A (South of Building 43) 8-18 ft bgs		SR-MW-16B (South of Building 43) 39-49 ft bgs	
			May 2019	Aug. 2019	May 2019	Aug. 2019	May 2019	Aug. 2019	May 2019	Aug. 2019
Benzene	*0.5*	**5**	<0.25	<0.99	<0.25	<0.25	<0.25	<0.25	*1.3*	*1.3*
Cis-1,2-Dichloroethene	*7*	**70**	*22.4*	**281**	2.3	0.50	<0.27	0.60	*44.7*	**82.3**
1,2-Dichloroethane	*0.5*	**5**	<0.28	<1.1	<0.28	<0.28	<0.28	<0.28	**21.2**	**50.6**
Tetrachloroethene	*0.5*	**5**	<0.33	<1.3	**11.5**	**8.7**	<0.33	<0.33	<0.33	<0.33
Trichloroethene	*0.5*	**5**	<0.26	<1.0	*1.1*	*0.61*	*0.95*	*2.2*	*0.66*	*0.70*
Vinyl Chloride	*0.02*	**0.2**	**51.3**	**68.6**	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17

- The Oscar Mayer Inc. site (BRRTS #02-13-000895) is a closed ERP site with continuing obligations, located in the central section of the subject property. According to the BRRTS database, the ERP case was opened in 1984; however, no documents from the period between 1984 and 1993 were included in the site file. According to the July 2006 Closure Request submitted to the WDNR by BT^2, the ERP case was opened to address chlorinated solvent impacts discovered in groundwater from production wells installed in the bedrock on the subject property. The report figures indicate that Production Well #5, located in the northwest corner of the subject property, extended to a depth of 400 feet bgs, with a well casing extending to a depth of 225 feet bgs. Quarterly groundwater samples from Production Well #5 collected between 1986 and 1993 indicated that TCE levels ranged from 1.37 to 5.64 ppb (ug/L), exceeding the ES of 5 ug/L, and PCE levels ranged from below detection level to 37.9 ppb (ug/L), exceeding the ES of 5 ug/L. Production well data from after 1993 was not included in the site file.

  In 1994, CRA advanced soil borings and installed monitoring wells to depths of up to 56 feet bgs, which indicated that a plume of chlorinated substances (1,2-dichloroethene and vinyl chloride) was present. Groundwater samples collected by BT^2 between 1994 and 2005 indicated that impacts were generally limited to the central section of the subject property and concentrations generally followed a downward trend throughout the monitoring period. BT^2 concluded that the area of ES exceedance for vinyl chloride extended to between 50 and 60 feet bgs. The site was granted a conditional closure in 2006.

  A 2006 memorandum to the site closure committee stated that in 1986, a spill of chlorinated solvents occurred in a drum storage area, thought to be west of Building 28, southwest of the subject property. In 1987 and 1988, approximately 110 cubic yards of contaminated soil was excavated and treated on site. No data from the remedial action was included in the site file. Sigma reviewed an excavation photo included in the site file. Based on aerial photographs and site maps from the 1980s, the excavation was most likely to the west of Building 43, directly west of the subject property.

The following ERP sites were identified on the 910 Mayer Ave parcel; however, based on the available information, are not located on the subject property itself:

- The Oscar Mayer Former Filling Station East site (BRRTS #02-13-580722) is an open ERP site located in the east-central section of the 910 Mayer Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of three former filling stations, which were razed around 1968. The northernmost filling station was located directly south of the southeast corner of the subject property. While no records of UST removals were identified, ERM did not find evidence indicating that the USTs were still present. Contaminants of concern include VOCs, PAHs and lead. As of October 2018, when a SIWP was submitted to the WDNR by ERM, the extent of groundwater impacts had not yet been delineated; however, impacts were identified within 50 feet of the subject property.

- The Former 1,2-DCA Tank South site (BRRTS #02-13-580721) is an open ERP site located in the southeast section of the 910 Oscar Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of two former 6,300-gallon ethylene dichloride ASTs. Contaminants of concern include CVOCs, PAHs, arsenic and lead.

- The Oscar Mayer Lift site (BRRTS #02-13-221826) is a closed ERP site located on the 910 Oscar Ave parcel. The ERP case was opened in 1999 to address impacts associated with an abandoned 250-gallon UST and closed after two months, with no continuing obligations. The UST was located roughly 500 feet south of the subject property, on the opposite side of the main facility building. According to the tank closure assessment, prepared by Woodward-Clyde Consultants in December 1992, Oscar Mayer representatives knew of "no other tanks, past or present, in the vicinity of the tank" which was removed.

EDR identified several LUST sites on the 910 Mayer Ave parcel; however, based on the available information, the sites are not located on the subject property itself:

- The Oscar Mayer Site #3 (BRRTS #03-13-114831) is a closed LUST site with continuing obligations located in the southeast section of the 910 Mayer St parcel, roughly 900 feet to the south of the subject property. The LUST case was opened in 1996 to address impacts from a 10,000-gallon leaded gasoline UST, a 9,500-gallon unleaded gasoline UST, and a 10,000-gallon diesel UST. At the time of site closure in 2006, residual soil and groundwater contamination were present at the site.

- The Oscar Mayer Foods site (BRRTS #03-13-001744) is a closed LUST site located on the southeast side of the main Oscar Meyer building, to the south of the subject property. The LUST case was opened in 1992 to address contamination discovered during the removal of a UST. While the size of the UST was not stated in the site file, the dimensions of the initial excavation indicate that the UST had a capacity of 1,900 gallons or less. Some residual soil contamination was present at the time of closure in 1993.

- The Oscar Mayer site (BRRTS #03-13-000053) is a closed LUST site located at 2007 Roth Street, southwest of the subject property across the railroad right-of-way. The LUST case was opened in 1989 to address soil and groundwater impacts related to two fuel oil ASTs (likely with capacities of 150,000 and 250,000 gallons) and historical releases along the railroad right-of-way. One AST was removed prior to the site closure, while aerial photographs indicate that the other was present until sometime between 2014 and 2017. Soil and groundwater samples were tested for VOCs and PAHs. The site was closed in 2008 with continuing obligations. Residual soil and groundwater contamination are present, and impacts extend beyond the site.

The 910 Oscar Ave parcel, which includes the subject property, was identified in the WI Asbestos database for asbestos abatement projects completed in 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, and 2019.

The parcel was also identified in the FINDS database as an Occupational Safety and Health Administration (OSHA) establishment and a major source of air pollution.

In addition to the subject property, EDR identified several properties in the vicinity of the subject property in one or more of the environmental databases researched by EDR:

- Chet's Car Care Center, located at 2020 Aberg Ave, directly north of the subject property across Aberg Avenue, was identified in the RCRA database as a Very Small Quantity Generator (generates less than 100 kg of hazardous waste during a calendar month) of ignitable wastes and lead. Based on RCRA records, the facility has been in operation since circa 1991. The company website indicates that it opened in 1984. No violations were reported for the site. Two 878-gallon waste/used oil ASTs are registered to the site.

- The Madison Metro North Transfer Point site (BRRTS #02-13-524010) is a closed ERP site with continuing obligations located at 1201 Huxley Street, adjacent to the west of the subject property across the railroad right-of-way. The ERP case was opened in 2004 to address impacts from four 10,000-gallon fuel oil USTs and eight 10,000-gallon fuel oil ASTs. According to the continuing obligations packet, contaminants of concern included benzene, toluene, ethyl benzene and xylenes, as well as select PAHs. Soil and groundwater samples collected in 2004 and 2005 indicated that soil and groundwater extended into the railroad right-of-way. The ERP case was closed in 2006, with residual soil and groundwater contamination.

- The Burke Wastewater Treatment Plant site (BRRTS #02-13-315773) was identified in the ERP and PFAS databases as an open ERP site. The site is located at 1401 Packers Ave, northeast of the subject property across the intersection of Packers Ave and Aberg Avenue. According to site documents, the Burke Wastewater Treatment Plant operated on this site from 1914 to 1936 and 1942 to 1978. Prior to 1950, the plant was a public utility and received domestic sewage. After 1950, the plant was operated by Oscar Mayer and treated wastewater from the Oscar Mayer plant. Oscar Mayer constructed a series of sludge lagoons in the northeast section of the site and also used the site for landfilling of ash from coal combustion and waste products (hair and toenails) from the meat processing plant. In 1981, the site was sold to Reynolds Transfer and Storage Co. In the 1980s and 1990s, the lagoons were filled in and buried. The site is bordered to the north by the former Truax Field Landfill, which was used by the City of Madison and the U.S. Army from 1942 to 1972.

  In March 2002, REA advanced soil borings and installed groundwater monitoring wells on the ERP site. Soil and groundwater samples were collected from the southwest section of the site, near the historical sludge drying beds. Soil samples from the southwest section of the site contained concentrations of arsenic and cadmium which were greater than their respective groundwater pathway RCLs and BTVs. The arsenic concentration was also greater than the direct contact RCL. Chromium and lead were present in groundwater samples collected from the southwest section of the site at concentrations greater than their respective ESs.

In August 2019, soil and groundwater samples from the Burke Wastewater Treatment Plant site were tested for the presence of PFAS. One or more PFAS constituents was detected in each sample. At the time of this report's publication, Wisconsin does not have final groundwater standards for PFAS constituents; however, the groundwater sample collected closest to the subject property (TW-4, located roughly 650 feet east northeast of the subject property) contained a combined concentration of PFOS and PFOA of 23.7 ng/L, which is greater than the proposed groundwater ES of 20 ng/L. The Amended SIWP for the site, submitted to the WDNR in December 2018 by Seymour Environmental Services Inc., indicates that groundwater flow on the ERP site is to the southwest.

It should be noted that, based on a review of aerial photographs, Burke Wastewater Treatment Plant operations likely extended onto the eastern edge of the subject property until the re-alignment of Packers Avenue in the mid-1960s. A roughly 6,000 square-foot section of the subject property, which was then east of Packers Ave, is depicted as disturbed land in the 1955 aerial photograph.

- EDR identified the Truax Field landfill, located on Aberg Avenue, to the northeast of the subject property, in the State Hazardous Waste Sites (SHWS) database. The landfill was added to the hazard ranking system list in 1994.

8.0 OPINIONS

Fill materials were historically placed on the subject property. Topographic maps produced between 1890 and 1906 depict the subject property as a wetland. A geologic cross-section of the subject property produced by BT^2 in 2006 indicates that a layer of fill material extends to a depth of up to six feet bgs in the central section of the subject property, and peat is present below the fill material in some sections. A 2016 Phase I ESA report repeats a claim from a prior environmental report (likely produced in 1994) that fly ash was buried in the northern section of the subject property. Coal piles and land disturbances were depicted in the northern section of the subject property in aerial photographs produced between 1949 and 1968. Considering the confirmed presence of fill material and the reported presence of buried fly ash on the subject property, fill materials may have impacted the subject property via soil, groundwater and/or vapor.

A search of the USEPA's Pesticide Product Information System (PPIS) revealed that Oscar Mayer & Co., located at 910 Mayer Ave, was a registered (Company Number 8514) manufacturer of three insecticides:

- Space Spray (USDA/EPA Registration Number 8514-2, no stock item number listed), an insecticide which was first registered in 1964 and accepted by the USEPA in 1967. The product label for Space Spray kept by the USEPA is largely illegible. No legible ingredient information was included.
- Pyrethrum Insecticide for Fogging (USDA/EPA Reg. No. 8514-3, Stock Item 91-0034), an insecticide which was first registered in 1964 and accepted by the USEPA in 1967. The product label states that it contained 0.3% pyrethrins, 1% technical piperonyl butoxide, and 98.7 petroleum distillate.
- Lethane Insecticide for Fogging (USDA/EPA Reg. No. 8514-4, Stock Item 91-036), an insecticide which was first registered in 1964 and accepted in 1968. The ingredient section of the product label is largely illegible. A product label for lethane produced by Rohm & Haas indicated that lethane contained 53% beta-butoxy beta-thiocyano diethyl ether and 47% petroleum distillate.

The manufacturing of all three insecticides was considered inactive as of May 1, 1987. Sigma also reviewed an online copy of the *List of Chemical Compounds Authorized for Use Under USDA Meat, Poultry, Rabbit, and Egg Products Inspection Programs*, prepared by the USDA and effective as of July 1, 1975. In addition to Space Spray, lethane and pyrethrum, the insecticide chlordane was authorized for use for Oscar Mayer. It should be noted that the Interstate Technology & Regulatory Council (ITRC) has included pesticides in its list of products which can contain PFAS. It is unclear if manufacturing of insecticides occurred on the subject property parcel or if the property address was listed as the company headquarters, with insecticide manufacturing occurring on another site. While it is unclear if insecticides were manufactured on the subject property or on the Oscar Mayer property as a whole; however, given the environmental persistence of chlordane, releases related to the manufacturing and/or usage of insecticides may have impacted the subject property via soil or groundwater.

A search of available environmental records was conducted by Environmental Data Resources Inc. (EDR). The 910 Oscar Ave parcel, which includes the subject property, was identified in the subject property was identified in the Resource Conservation and Recovery Act (RCRA), Emergency Response Notification System (ERNS), Leaking Underground Storage Tank (LUST), Underground Storage Tank (UST), Environmental Repair Program (ERP), Aboveground Storage Tank (AST), Wisconsin Spills, Facility Index System (FINDS), toxic Release Inventory System (TRIS), Tier 2, Wisconsin Asbestos, and Wisconsin Solid and Hazardous Waste Information System (SHWIMS) databases researched by EDR.

The 910 Oscar Ave parcel, which includes the subject property, was identified in the Tier 2 database for the on-site storage of ethylene glycol, nitric acid, nitrogen, carbon dioxide, lead acid batteries, sulfuric acid, diesel fuel, ammonia, petroleum hydrocarbons, ethylene vinyl acetate, vinylidene chloride/vinyl chloride copolymer, and sodium hydroxide.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the RCRA and FINDS databases as an active Large Quantity Generator (generates 1,000 kg or more of hazardous waste during a calendar month) of ignitable and corrosive wastes, as well as waste lead, mercury, PCE, TCE, spent nonhalogenated solvents, and dichloromethane or methylene chloride, and byproduct salts generated in the production of MSMA and cacodylic acid. The facility has received notices of violations, including a formal enforcement action, which were subsequently corrected.

EDR identified the 910 Oscar Ave parcel in the FINDS database as a Toxic Release Inventory (TRI) reporter, with nitrate compounds, ethylene glycol, nitric acid, ammonia, ammonia nitrite, methanol, chlorine, phosphoric acid, hydrochloric acid, sulfuric acid, butyl benzyl phthalate, sodium hydroxide, and dichloromethane listed as hazardous substances which were historically released. According to the Form R for 1987, hazardous materials were disposed of via an on-site landfill, on-site land treatment, on-site surface impoundment, and on-site underground injection. Additional detail, including the quantity released through these methods, was not included in the form.

The 910 Oscar Ave parcel, which includes the subject property, was identified in the SHWIMS database as a solid waste transporter between 1989 and 1999, a solid waste refuse derived fuel storage site handling animal carcasses, garbage, and refuse between 1989 and 1994, an inactive waste registry site, and a proposed landfill.

Industrial activities on the 910 Oscar Ave parcel involved the storage of reportable quantities of petroleum products and hazardous materials including chlorinated compounds, and the generation and possible on-site disposal of solid and/or hazardous waste. Releases associated with the storage or disposal of these materials may have impacted the subject property via soil, groundwater, and/or vapor.

EDR identified the 910 Mayer St parcel, which includes the subject property, as a registered UST site, with a 250-gallon fuel oil UST, a 9,500-gallon unleaded gasoline UST, a 10,000 gallon leaded gasoline UST, a 10,000-gallon diesel UST, and a 12,000-gallon diesel UST historically located on the parcel. All of the USTs have been removed. Based on available LUST documents and fire department records, none of the USTs were located on the subject property, and they are not expected to negatively impact the subject property.

EDR identified the Oscar Mayer property in the AST database with a 550-gallon unleaded gasoline AST, a 2,000-gallon diesel AST, a 500-gallon waste/used oil UST, a 150-000-gallon fuel oil AST, and a 250-000-gallon fuel oil AST. All of the ASTs have been removed. Based on aerial photographs and fire department records, none of these ASTs were located on the subject property, and they are not expected to negatively impact the subject property.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, as an ERNS site with 24 reported releases. Various operator errors and equipment failures resulted in 17 reported releases of up to 110 pounds of ammonia between 1993 and 2012. Based on the nature or size of the other seven reported releases, they are not expected to significantly impact the subject property.

EDR identified the 910 Oscar Ave parcel, which includes the subject property, in the Wisconsin Spills database with 38 documented releases. Based on the available information, the releases are either not expected to impact the subject property or would have a de minimis impact, with the exception of the Freight Elevator #43 Hydraulic Oil Release site (BRRTS #04-13-227692/04-13-227043). In 1998, a cylinder on an elevator broke, resulting in a reported release of 75 gallons of hydraulic oil. An environmental contractor was hired. Two identical BRRTS entries with different BRRTS numbers were generated. Based on the date and nature of the release, a Request for No Further Action report prepared by BT^2, which was included in the site file for an unrelated ERP case, applied to this spill. No correspondence from the WDNR concerning the release was identified, so it is unclear if the WDNR recommended any additional actions. According to the Request for No Further Action, submitted to the WDNR on March 3, 1999, the freight elevator in Building 43 malfunctioned on October 22, 1998, resulting in a release of 140 gallons of hydraulic oil. Approximately 64 gallons of the hydraulic oil was recovered, and the elevator system was replaced. No further remedial actions were discussed. Approximately 75 gallons of hydraulic oil was left in place below Building 43, possibly impacting the subject property via soil or groundwater.

EDR identified the subject property as an ERP site:

- The Oscar Mayer Former Spice Room Building 43 site (BRRTS #02-13-580723) is an open ERP site located in the southeast corner of Building 43. The ERP case was opened in 2017 to address CVOCs detected in sub-slab gas samples collected in the vicinity of the former spice room. Concentrations of TCE in sub-slab vapor samples collected below Building 43 ranged from 2.7 to 66,800 ug/m^3, exceeding WDNR sub-slab vapor criteria. In 2019, two rounds of groundwater samples were collected from wells located directly east, west, and south of the building and tested for VOCs. Results for constituents with one or more exceedances are summarized in the table below:

Constituent (all values in ug/L)	PAL	ES	SR-MW-14 (East of Building 43) 3-18 ft bgs		SR-MW-15 (West of Building 43) 5-20 ft bgs		SR-MW-16A (South of Building 43) 8-18 ft bgs		SR-MW-16B (South of Building 43) 39-49 ft bgs	
			May 2019	Aug. 2019	May 2019	Aug. 2019	May 2019	Aug. 2019	May 2019	Aug. 2019
Benzene	*0.5*	**5**	<0.25	<0.99	<0.25	<0.25	<0.25	<0.25	*1.3*	*1.3*
Cis-1,2-Dichloroethene	*7*	**70**	*22.4*	**281**	2.3	0.50	<0.27	0.60	*44.7*	**82.3**
1,2-Dichloroethane	*0.5*	**5**	<0.28	<1.1	<0.28	<0.28	<0.28	<0.28	**21.2**	**50.6**
Tetrachloroethene	*0.5*	**5**	<0.33	<1.3	**11.5**	**8.7**	<0.33	<0.33	<0.33	<0.33
Trichloroethene	*0.5*	**5**	<0.26	<1.0	*1.1*	*0.61*	*0.95*	*2.2*	*0.66*	*0.70*
Vinyl Chloride	*0.02*	**0.2**	**51.3**	**68.6**	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17

  The subject property has been impacted via groundwater and vapor.

- The Oscar Mayer Inc. site (BRRTS #02-13-000895) is a closed ERP site with continuing obligations, located in the central section of the subject property. According to the BRRTS database, the ERP case was opened in 1984; however, no documents from the period between 1984 and 1993 were included in the site file. According to the July 2006 Closure Request submitted to the WDNR by BT^2, the ERP case was opened to address chlorinated solvent impacts discovered in groundwater from production wells installed in the bedrock on the subject property. The report figures indicate that Production Well #5, located in the northwest corner of the subject property, extended to a depth of 400 feet bgs, with a well casing extending to a depth of 225 feet bgs. Quarterly groundwater samples from Production Well #5 collected between 1986 and 1993 indicated that TCE levels ranged from 1.37 to 5.64 ppb (ug/L), exceeding the ES of 5 ug/L, and PCE levels ranged from below detection level to 37.9 ppb (ug/L), exceeding the ES of 5 ug/L. Production well data from after 1993 was not included in the site file.

  In 1994, CRA advanced soil borings and installed monitoring wells to depths of up to 56 feet bgs, which indicated that a plume of chlorinated substances (1,2-dichloroethene and vinyl chloride) was present. Groundwater samples collected by BT^2 between 1994 and 2005 indicated that impacts were generally limited to the central section of the subject property and concentrations generally followed a downward trend throughout the monitoring period. BT^2 concluded that the area of ES exceedance for vinyl chloride extended to between 50 and 60 feet bgs. The site was granted a conditional closure in 2006.

  Considering that the modeled extent of ES exceedances for chlorinated compounds in groundwater did not extend below 60 ft bgs in 2005, it is unlikely that this plume was the source of impacts detected in production wells at depths of over 225 bgs in the 1980s.

  A 2006 memorandum to the site closure committee stated that in 1986, a spill of chlorinated solvents occurred in a drum storage area, thought to be west of Building 28, southwest of the subject property. In 1987 and 1988, approximately 110 cubic yards of contaminated soil was excavated and treated on site. No data from the remedial action was included in the site file. Sigma reviewed an excavation photo included in the site file. Based on aerial photographs and site maps from the 1980s, the excavation was most likely to the west of Building 43, directly west of the subject property. Considering the general southerly direction of groundwater flow on the subject property and the relative locations of the two identified areas of groundwater impacts, it is unlikely that spill of chlorinated solvents was the source of those impacts.

  A review of the site file indicates that at least three sources of chlorinated compounds are likely to have impacted the subject property via soil and/or groundwater.

The following ERP sites were identified on the 910 Mayer Ave parcel; however, based on the available information, are not located on the subject property itself. These sites may have negatively impacted the subject property:

- The Oscar Mayer Former Filling Station East site (BRRTS #02-13-580722) is an open ERP site located in the east-central section of the 910 Mayer Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of three former filling stations, which were razed around 1968. The northernmost filling station was located directly south of the southeast corner of the subject property. While no records of UST removals were identified, ERM did not find evidence indicating that the USTs were still present. Contaminants of concern include VOCs, PAHs and lead. As of October 2018, when a SIWP was submitted to the WDNR by ERM, the extent of groundwater impacts had not yet been delineated; however, impacts were identified within 50 feet of the subject property. Impacts from this site may have impacted the subject property via soil, groundwater, and/or vapor.

The following ERP sites were identified on the 910 Mayer Ave parcel; however, based on the available information, are not located on the subject property itself and are not expected to negatively impact the subject property:

- The Former 1,2-DCA Tank South site (BRRTS #02-13-580721) is an open ERP site located in the southeast section of the 910 Oscar Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of two former 6,300-gallon ethylene dichloride ASTs. Contaminants of concern include CVOCs, PAHs, arsenic and lead. Based on data in the Remedial Action Options Report submitted to the WDNR by ERM in March 2020, impacts from this site are not expected to impact the subject property.

- The Oscar Mayer Lift site (BRRTS #02-13-221826) is a closed ERP site located on the 910 Oscar Ave parcel. The ERP case was opened in 1999 to address impacts associated with an abandoned 250-gallon UST and closed after two months, with no continuing obligations. The UST was located roughly 500 feet south of the subject property, on the opposite side of the main facility building. According to the tank closure assessment, prepared by Woodward-Clyde Consultants in December 1992, Oscar Mayer representatives knew of “no other tanks, past or present, in the vicinity of the tank” which was removed.

EDR identified several LUST sites on the 910 Mayer Ave parcel; however, based on the available information, the sites are not located on the subject property itself:

- The Oscar Mayer Site #3 (BRRTS #03-13-114831) is a closed LUST site with continuing obligations located in the southeast section of the 910 Mayer St parcel, roughly 900 feet to the south of the subject property. The LUST case was opened in 1996 to address impacts from a 10,000-gallon leaded gasoline UST, a 9,500-gallon unleaded gasoline UST, and a 10,000-gallon diesel UST. At the time of site closure in 2006, residual soil and groundwater contamination were present at the site. Impacts from this site are not expected to impact the subject property.

- The Oscar Mayer Foods site (BRRTS #03-13-001744) is a closed LUST site located on the southeast side of the main Oscar Meyer building, to the south of the subject property. The LUST case was opened in 1992 to address contamination discovered during the removal of a UST. While the size of the UST was not stated in the site file, the dimensions of the initial excavation indicate that the UST had a capacity of 1,900 gallons or less. While some residual soil contamination was present at the time of closure in 1993, this site is not expected to impact the subject property.

- The Oscar Mayer site (BRRTS #03-13-000053) is a closed LUST site located at 2007 Roth Street, southwest of the subject property across the railroad right-of-way. The LUST case was opened in 1989 to address soil and groundwater impacts related to two fuel oil ASTs (likely with capacities of 150,000 and 250,000 gallons) and historical releases along the railroad right-of-way. One AST was removed prior to the site closure, while aerial photographs indicate that the other was present until sometime between 2014 and 2017. Soil and groundwater samples were tested for VOCs and PAHs. The site was closed in 2008 with continuing obligations. Residual soil and groundwater contamination are present, and impacts extend beyond the site. Based on the available information, this site is not expected to negatively impact the subject property.

The 910 Oscar Ave parcel, which includes the subject property, was identified in the WI Asbestos database for asbestos abatement projects completed in 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, and 2019. Asbestos abatement information is considered a non-scope item for this report.

The parcel was also identified in the FINDS database as an Occupational Safety and Health Administration (OSHA) establishment and as a major source of air pollution. This is not expected to significantly impact the subject property.

EDR identified several properties in the vicinity of the subject property on one or more of the environmental databases. Based on the relative distance between the reported sites and the subject property and/or the reported site status, the identified sites are not expected to impact the subject property, with the exceptions of the following sites:

- Chet's Car Care Center, located at 2020 Aberg Ave, directly north of the subject property across Aberg Avenue, was identified in the RCRA database as a Very Small Quantity Generator (generates less than 100 kg of hazardous waste during a calendar month) of ignitable wastes and lead. Based on RCRA records, the facility has been in operation since circa 1991. The company website indicates that it opened in 1984. No violations were reported for the site. Two 878-gallon waste/used oil ASTs are registered to the site. While no violations have been identified, Chet's Car Care Center is located upgradient from the subject property and has been in operation for around 30 years. Potential releases associated with automotive repair activities may have impacted the subject property via groundwater.

- The Madison Metro North Transfer Point site (BRRTS #02-13-524010) was identified in the ERP database as a closed ERP site with continuing obligations. The site is located at 1201 Huxley Street, adjacent to the west of the subject property across the railroad right-of-way. The ERP case was opened in 2004 to address impacts from four 10,000-gallon fuel oil USTs and eight 10,000-gallon fuel oil ASTs. According to the continuing obligations packet, contaminants of concern included benzene, toluene, ethyl benzene and xylenes, as well as select PAHs. Soil and groundwater samples collected in 2004 and 2005 indicated that soil and groundwater extended into the railroad right-of-way. The ERP case was closed in 2006, with residual soil and groundwater contamination. While groundwater samples collected from one monitoring well on the subject property did not contain any exceedances, impacts may extend onto the subject property.

- The Burke Wastewater Treatment Plant site (BRRTS #02-13-315773) was identified in the ERP and PFAS databases as an open ERP site. The site is located at 1401 Packers Ave, northeast of the subject property across the intersection of Packers Ave and Aberg Avenue. According to site documents, the Burke Wastewater Treatment Plant operated on this site from 1914 to 1936 and 1942 to 1978. Prior to 1950, the plant was a public utility and received domestic sewage. After 1950, the plant was operated by Oscar Mayer and treated wastewater from the Oscar Mayer plant. Oscar Mayer constructed a series of sludge lagoons in the northeast section of the site and also used the site for landfilling of ash from coal combustion and waste products (hair and toenails) from the meat processing plant. In 1981, the site was sold to Reynolds Transfer and Storage Co. In the 1980s and 1990s, the lagoons were filled in and buried.

  In March 2002, REA advanced soil borings and installed groundwater monitoring wells on the ERP site. Soil and groundwater samples were collected from the southwest section of the site, near the historical sludge drying beds. Soil samples from the southwest section of the site contained concentrations of arsenic and cadmium which were greater than their respective groundwater pathway RCLs and BTVs. The arsenic concentration was also greater than the direct contact RCL. Chromium and lead were present in groundwater samples collected from the southwest section of the site at concentrations greater than their respective ESs.

  In August 2019, soil and groundwater samples from the Burke Wastewater Treatment Plant site were tested for the presence of PFAS. One or more PFAS constituents was detected in each sample. At the time of this report's publication, Wisconsin does not have final groundwater standards for PFAS constituents; however, the groundwater sample collected closest to the subject property (TW-4, located roughly 650 feet east northeast of the subject property) contained a combined concentration of PFOS and PFOA of 23.7 ng/L, which is greater than the proposed groundwater ES of 20 ng/L. The Amended SIWP for the site, submitted to the WDNR in December 2018 by Seymour Environmental Services Inc., indicates that groundwater flow on the ERP site is to the southwest. The site is bordered to the north by the former Truax Field Landfill, which was used by the City of Madison and the U.S. Army from 1942 to 1972. The Truax Field Landfill was identified in the State Hazardous Waste Sites (SHWS) database. The landfill was added to the hazard ranking system list in 1994. Considering that the landfill was used by a nearby airfield, the PFAS contamination may have originated at the landfill.

It should be noted that, based on a review of aerial photographs, Burke Wastewater Treatment Plant operations likely extended onto the eastern edge of the subject property until the re-alignment of Packers Avenue in the mid-1960s. A roughly 6,000 square-foot section of the subject property, which was then east of Packers Ave, is depicted as disturbed land in the 1955 aerial photograph. Groundwater contamination from the Burke Wastewater Treatment Plant site and/or Truax Field Landfill may have impacted the subject property. Additionally, waste materials associated with the Burke Wastewater Treatment Plant may be buried on the subject property.

9.0 CONCLUSIONS

Sigma has performed an environmental site assessment, in conformance with the scope and limitations of ASTM Practice E 1527-13. Any exceptions to, or deletions from, this practice are described in Section 10 of this report. This assessment has revealed evidence of the following recognized environmental conditions at the subject property:

- Fill materials were historically placed on the subject property. Topographic maps produced between 1890 and 1906 depict the subject property as a wetland. A geologic cross-section of the subject property produced by BT^2 in 2006 indicates that a layer of fill material extends to a depth of up to six feet bgs in the central section of the subject property, and peat is present below the fill material in some sections. A 2016 Phase I ESA report repeats a claim from a prior environmental report (likely produced in 1994) that fly ash was buried in the northern section of the subject property. Coal piles and land disturbances were depicted in the northern section of the subject property in aerial photographs produced between 1949 and 1968. Considering the confirmed presence of fill material and the reported presence of buried fly ash on the subject property, fill materials may have impacted the subject property via soil, groundwater and/or vapor.

- Industrial activities on the 910 Oscar Ave parcel, which includes the subject property, involved the storage of reportable quantities of petroleum products and hazardous materials including chlorinated compounds, and the generation and possible on-site disposal of solid and/or hazardous waste. Additionally, the 910 Oscar Ave parcel may have been used for the manufacturing of insecticides in the 1960s and 1970s. It should be noted that the Interstate Technology & Regulatory Council (ITRC) has included pesticides in its list of products which can contain PFAS. Releases associated with the manufacturing, storage and/or disposal of petroleum products and hazardous materials may have impacted the subject property via soil, groundwater, and/or vapor.

- The Oscar Mayer Former Spice Room Building 43 site (BRRTS #02-13-580723) is an open ERP site located in the southeast corner of Building 43. The ERP case was opened in 2017 to address CVOCs detected in sub-slab gas samples collected in the vicinity of the former spice room. Concentrations of TCE in sub-slab vapor samples collected below Building 43 ranged from 2.7 to 66,800 ug/m^3, exceeding WDNR sub-slab vapor criteria. In 2019, two rounds of groundwater samples were collected from wells located directly east, west, and south of the building and tested for VOCs. One or more chlorinated compound was detected at a concentration greater than the PAL and/or ES in each groundwater sample tested. The subject property has been impacted via groundwater and vapor.

This assessment has revealed evidence of the following controlled recognized environmental conditions (CRECs) at the subject property:

- In 1998, a cylinder on an elevator broke, resulting in a reported release of 75 gallons of hydraulic oil (BRRTS #04-13-227692/04-13-227043). Based on the date and nature of the release, a Request for No Further Action report prepared by BT^2, which was included in the site file for an unrelated ERP case, applied to this spill. No correspondence from the WDNR concerning the release was identified, so it is unclear if the WDNR recommended any additional actions. According to the Request for No Further Action, submitted to the WDNR on March 3, 1999, the freight elevator in Building 43 malfunctioned on October 22, 1998, resulting in a release of 140 gallons of hydraulic oil. Approximately 64 gallons of the hydraulic oil was recovered, and the elevator system was replaced. No further remedial actions were discussed. Approximately 75 gallons of hydraulic oil was left in place below Building 43, possibly impacting the subject property via soil or groundwater.

- The Oscar Mayer Inc. site (BRRTS #02-13-000895) is a closed ERP site with continuing obligations, located in the central section of the subject property. According to the BRRTS database, the ERP case was opened in 1984; however, no documents from the period between 1984 and 1993 were included in the site file. According to the July 2006 Closure Request submitted to the WDNR by BT^2, the ERP case was opened to address chlorinated solvent impacts discovered in groundwater from production wells installed in the bedrock on the subject property. The report figures indicate that Production Well #5, located in the northwest corner of the subject property, extended to a depth of 400 feet bgs, with a well casing extending to a depth of 225 feet bgs. Quarterly groundwater samples from Production Well #5 collected between 1986 and 1993 indicated that TCE levels ranged from 1.37 to 5.64 ppb (ug/L), exceeding the ES of 5 ug/L, and PCE levels ranged from below detection level to 37.9 ppb (ug/L), exceeding the ES of 5 ug/L. Production well data from after 1993 was not included in the site file.

  In 1994, CRA advanced soil borings and installed monitoring wells to depths of up to 56 feet bgs, which indicated that a plume of chlorinated substances (1,2-dichloroethene and vinyl chloride) was present. Groundwater samples collected by BT^2 between 1994 and 2005 indicated that impacts were generally limited to the central section of the subject property and concentrations generally followed a downward trend throughout the monitoring period. BT^2 concluded that the area of ES exceedance for vinyl chloride extended to between 50 and 60 feet bgs. The site was granted a conditional closure in 2006.

Considering that the modeled extent of ES exceedances for chlorinated compounds in groundwater did not extend below 60 ft bgs in 2005, it is unlikely that this plume was the source of impacts detected in production wells at depths of over 225 bgs in the 1980s.

A 2006 memorandum to the site closure committee stated that in 1986, a spill of chlorinated solvents occurred in a drum storage area, thought to be west of Building 28, southwest of the subject property. In 1987 and 1988, approximately 110 cubic yards of contaminated soil was excavated and treated on site. No data from the remedial action was included in the site file. Sigma reviewed an excavation photo included in the site file. Based on aerial photographs and site maps from the 1980s, the excavation was most likely to the west of Building 43, directly west of the subject property. Considering the general southerly direction of groundwater flow on the subject property and the relative locations of the two identified areas of groundwater impacts, it is unlikely that spill of chlorinated solvents was the source of those impacts.

A review of the site file indicates that at least three sources of chlorinated compounds are likely to have impacted the subject property via soil and/or groundwater.

This assessment has revealed evidence of the following off-site RECs at the subject property:

- The Oscar Mayer Former Filling Station East site (BRRTS #02-13-580722) is an open ERP site located in the east-central section of the 910 Mayer Ave parcel. The ERP case was opened in 2017 to address soil and groundwater contamination discovered in the vicinity of three former filling stations, which were razed around 1968. The northernmost filling station was located directly south of the southeast corner of the subject property. While no records of UST removals were identified, ERM did not find evidence indicating that the USTs were still present. Contaminants of concern include VOCs, PAHs and lead. As of October 2018, when a SIWP was submitted to the WDNR by ERM, the extent of groundwater impacts had not yet been delineated; however, impacts were identified within 50 feet of the subject property. Impacts from this site may have impacted the subject property via soil, groundwater, and/or vapor.

- Chet's Car Care Center, located at 2020 Aberg Ave, directly north of the subject property across Aberg Avenue, was identified in the RCRA database as a Very Small Quantity Generator (generates less than 100 kg of hazardous waste during a calendar month) of ignitable wastes and lead. Based on RCRA records, the facility has been in operation since circa 1991. The company website indicates that it opened in 1984. No violations were reported for the site. Two 878-gallon waste/used oil ASTs are registered to the site. While no violations have been identified, Chet's Car Care Center is located upgradient from the subject property and has been in operation for around 30 years. Potential releases associated with automotive repair activities may have impacted the subject property via groundwater.

The Burke Wastewater Treatment Plant site (BRRTS #02-13-315773) was identified in the ERP and PFAS databases as an open ERP site. The site is located at 1401 Packers Ave, northeast of the subject property across the intersection of Packers Ave and Aberg Avenue. According to site documents, the Burke Wastewater Treatment Plant operated on this site from 1914 to 1936 and 1942 to 1978. Prior to 1950, the plant was a public utility and received domestic sewage. After 1950, the plant was operated by Oscar Mayer and treated wastewater from the Oscar Mayer plant. Oscar Mayer constructed a series of sludge lagoons in the northeast section of the site and also used the site for landfilling of ash from coal combustion and waste products (hair and toenails) from the meat processing plant. In 1981, the site was sold to Reynolds Transfer and Storage Co. In the 1980s and 1990s, the lagoons were filled in and buried.

In March 2002, REA advanced soil borings and installed groundwater monitoring wells on the ERP site. Soil and groundwater samples were collected from the southwest section of the site, near the historical sludge drying beds. Soil samples from the southwest section of the site contained concentrations of arsenic and cadmium which were greater than their respective groundwater pathway RCLs and BTVs. The arsenic concentration was also greater than the direct contact RCL. Chromium and lead were present in groundwater samples collected from the southwest section of the site at concentrations greater than their respective ESs.

In August 2019, soil and groundwater samples from the Burke Wastewater Treatment Plant site were tested for the presence of PFAS. One or more PFAS constituents was detected in each sample. At the time of this report's publication, Wisconsin does not have final groundwater standards for PFAS constituents; however, the groundwater sample collected closest to the subject property (TW-4, located roughly 650 feet east northeast of the subject property) contained a combined concentration of PFOS and PFOA of 23.7 ng/L, which is greater than the proposed groundwater ES of 20 ng/L. The Amended SIWP for the site, submitted to the WDNR in December 2018 by Seymour Environmental Services Inc., indicates that groundwater flow on the ERP site is to the southwest. The site is bordered to the north by the former Truax Field Landfill, which was used by the City of Madison and the U.S. Army from 1942 to 1972. The Truax Field Landfill was identified in the State Hazardous Waste Sites (SHWS) database. The landfill was added to the hazard ranking system list in 1994. Considering that the landfill was used by a nearby airfield, the PFAS contamination may have originated at the landfill.

It should be noted that, based on a review of aerial photographs, Burke Wastewater Treatment Plant operations likely extended onto the eastern edge of the subject property until the re-alignment of Packers Avenue in the mid-1960s. A roughly 6,000 square-foot section of the subject property, which was then east of Packers Ave, is depicted as disturbed land in the 1955 aerial photograph. Groundwater contamination from the Burke Wastewater Treatment Plant site and/or Truax Field Landfill may have impacted the subject property. Additionally, waste materials associated with the Burke Wastewater Treatment Plant may be buried on the subject property.

This assessment has revealed evidence of the following off-site CRECs at the subject property:

- The Madison Metro North Transfer Point site (BRRTS #02-13-524010) was identified in the ERP database as a closed ERP site with continuing obligations. The site is located at 1201 Huxley Street, adjacent to the west of the subject property across the railroad right-of-way. The ERP case was opened in 2004 to address impacts from four 10,000-gallon fuel oil USTs and eight 10,000-gallon fuel oil ASTs. According to the continuing obligations packet, contaminants of concern included benzene, toluene, ethyl benzene and xylenes, as well as select PAHs. Soil and groundwater samples collected in 2004 and 2005 indicated that soil and groundwater extended into the railroad right-of-way. The ERP case was closed in 2006, with residual soil and groundwater contamination. While groundwater samples collected from one monitoring well on the subject property did not contain any exceedances, impacts may extend onto the subject property.

The conclusions included in this assessment report should not be construed as legal advice. This practice is intended to reflect a commercially prudent and reasonable inquiry. No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with the subject property. Performance of the ASTM E 1527-13 practice is intended to reduce, but not eliminate that uncertainty. Finally, even a finding of no recognized environmental conditions is not a warranty or guarantee that the property is free from contamination.

10.0 DEVIATIONS

There were no intentional deviations from or additions to standard practices identified in the ASTM standard for Phase 1 ESAs ASTM-1527-13 except as noted within this report.

11.0 REFERENCES

Published referenced sources relied upon in preparing this Phase I Environmental Site Assessment are as noted in the body of the report.

Hartmeyer Natural Area and the Oscar Mayer Special Area Plan
2007 Roth Street, Madison
Legistar # 59745

Beth Sluys Lerdahl Park Neighborhood Alder District 18

The Hartmeyer Natural Area is a unique resource for Madison's Northside and presents an extraordinary opportunity for the city to partner with area groups, Groundswell, and Dane County, granting agencies, as well as private donors to create a legacy park unlike any other in Madison's city limits. It is a once in a lifetime moment for us to consider preserving an historic piece of Madison that has always been a marsh and wetland, just disrupted by human industry and the use of this parcel of land. ***This is a legacy moment, and one that has a precedent in Madison.***

Madison has a rich history of successful public and private partnerships when looking to preserve natural areas or to create public park spaces. It is this history of public private partnerships that has been at the fore of many of Madison's parks. The Parks and Pleasure Drive Association formed to build parks and drive ways in and about Madison. Between 1903 and 1905, the association gave private donations to the city that amounted to around $104,000. Before 1899, the city owned 3.6 acres of park area, due to the PPDA donation efforts, by 1905, the partnership increased park area to 150 acres of land.

In 1953, when the prospect of creating a northern pike spawning ground in the marsh area of Warner Park came into the forefront, local residents, like **Alvina Neibuhr**, a bait shop owner on Madison's north side, put out a donation can in her bait station. This photo is of Alvina, who is shown here "holding the *winning* contribution can in the campaign to finance the purchase of a northern pike spawning and rearing area in Castle's Marsh near Warner Park."

This extraordinary opportunity to consider purchasing ALL 30 acres of the Hartmeyer property is akin to the one that the city took up when Olbrich Park was created. It relied on a public private partnership with the Botanical Society to help fund the park and its operations -a partnership that continues today and into the

future. Why not consider a partnership when considering the purchase, as there are partners eager to meet and discuss this opportunity. The city could purchase a portion (14 acres) and the balance could be purchased in collaborative effort. Area residents are already contributing money to the Friends of Hartmeyer Natural Area, without even asking. There is such support.

Planning, Support and Recommendation

Madison is a wonderful place to live, and a great city known for its planning efforts. As we endeavor in our work to preserve this vestige of how most of Madison's lake shoreline used to be, we understand that the planning process requires that the various needs and wants of the public, city leaders, planners and landowners are each represented in the final plan. To date, the option to keep ALL 30 acres as a green area on the land use map is a very viable one and helps to fulfill the goals and recommendations of most of the public plans currently guiding redevelopment and land use in Madison. Based on Northside resident input, the map can look like this:

Madison has often taken on "low quality" land situations and turned lemons to lemonade, but for redevelopment focused on hardscapes and buildings. The issue at hand is turning an altered wetland into one that will continually improve and be restored. Is it a perfect natural area accessible to everyone? Not yet. Even the "high quality" Cherokee Marsh contains vast areas of reed canary grass and other invasive species that require a rather high level of spraying of grass killer in the marsh, but yet, through a strategic partnership, the land was purchased. If canary grass and other invasive plants are the litmus test for decision-making, then how have we ended up with hundreds of acres of parks that contain invasive plants throughout

the park system? It does not make for a consistent rationale. **There is a request on the table for conducting an ecological evaluation of the site using the funds designated in the budget towards the Hartmeyer property. Alder Abbas secured those funds. Let's dedicate and investigate.**

Rather than speculate on the quality of the Hartmeyer site or what area residents would want at the location, let's consider placing ALL 30 acres on the land use map as GREEN, and conduct an ecological opportunities assessment. Through this effort, we can achieve a level of understanding of the ecological and social opportunities in a simple format to be useful to allow for well rounded and community-informed planning, review and recommendations by stakeholders and potential funding partners, including Deputy Mayor Christie Baumel, City Planning and Engineering, Madison City Alder Abbas and Kemble, and the Board of Park Commissioners, the Friends of Hartmeyer Members and Supporters, Dane County, WDNR, Groundswell, and others. In the 2009 plan for the Sherman Neighborhood, the plan contained a development concept for the Hartmeyer land, and then language that states: "The Steering Committee worked with City staff to generate the designs recognizing that they offer two of many potential solutions. It should be noted, that Oscar Mayer/Hartmayer Estates has no near-term plans to redevelop/develop these lands."

This plan could contain ALL 30 acres designated, and include similar language such as ***"The Board of Park Commissioners reviewed the various design options recognizing that each has intrinsic benefits and costs. At this time, the Hartmeyer Partnership has not indicated near-term plans to sell the land, nor a selling price, based on repeated inquiry by city planning staff. Should the property become available for sale, the city will convene a consortium of interested stakeholders and approach the Partnership regarding the purchase."*** 30 acres for 2-3 million dollars seems like a great deal given the city's willingness to purchase 15 acres of land at OM Station for almost 15 million dollars. City parks recently purchased 0.2 acres for $275,000 dollars to expand a park on Milwaukee Street, which requires additional expenditures for demolition of the house. And, given the expressed interest of groups and organizations in Madison towards a purchase, the city would **not be responsible for the entire purchase price**. As such, the numbers presented in the city staff comments **are speculative**, and most importantly, not based on spirit to create a consortium of stakeholders. We can do better and more when we join together.

If the roadway design to connect Roth Street uses the existing railroad crossing, as shown in my design in the above land use designations, the city would save close to a million dollars. A current railroad bridge project on Troy Drive (Alder Kemble D18), through a combination of efforts by the city and the WSOR, a better cost saving design was created and it has saved the city funds that could be allocated towards this purchase, estimated at a savings of up to $500,000. If the Coolidge Street extension is opened to pedestrian and bike pathways only, modeled after the ***Leonard Street and Monroe Street connection***, there would also be a cost savings related to that work. If we look to creative planning and budget options, we could save over 1.5 million dollars that could go towards the purchase of the Hartmeyer land. Currently the zoning is Industrial with a wetland overlay. Let's be creative, collaborative and look outside the standard options in this legacy moment to preserve these 30 acres of post-industrial wetland ecosystem and future greenway. We can do this.

Existing Plans Support this Concept

Various city plans contain language that supports the idea of a preserving this natural area:
"Society exists within environment that must be respected and preserved for future generations…the preservation of important natural features and systems is critical to maintaining a healthy environment and ecological balances." - Madison Comprehensive Plan (2018)

"A wetland exists on the Hartmeyer property that not only serves an important retention function, but as a natural feature for residents as well." "Partner with the current owners of the wetlands near Roth Street to preserve and maintain them as open space."– Oscar Mayer Area Strategic Assessment Report (2018)

"Preserving and enhancing the existing wetland area and the natural open space features that surround it may promote community building and identity in this area serve employers/employees and serve as a green space gateway to the Northside." Northport-Warner Park-Sherman Neighborhood Plan (2009)

The Parks and Open Space Plan identified the Sherman neighborhood area as deficient in access to a park.

Acquiring ALL 30 acres of the Hartmeyer land fulfills 6 out of the 9 strategies in the Madison Comprehensive Plan:

1. Protect Madison's water supply and infrastructure to provide safe, clean drinking water – the wetland can be a place for natural water infiltration and particulate removal
2. Improve lake and stream water quality – the wetland captures a large volume of water with each rain event and keeps it from storm sewers and slowly releases the water through infiltration
3. Acquire parkland and upgrade park facilities to accommodate more diverse activities and gatherings – the Hartmeyer property offers a great space for people of all ethnicities and ages and socioeconomic backgrounds to find a peaceful spot in the urban landscape for a quiet connection to nature and wildlife and nature education programming provided by city volunteers
4. Improve and preserve urban biodiversity through an interconnected greenway and habitat system – the back end of the Hartmeyer property runs along a rail corridor that offers a natural greenway that connects area open spaces for all urban wildlife
5. Develop a healthy and diverse tree canopy – there are several ancient oaks on the uplands that add to the variety of trees in the area with land enough to plant additional oaks; preserve the woodland buffer on the south edge of the property
6. Support sustainable farming and gardening practices that protect the ecosystem and public health- if preserved, the Hartmeyer natural area would be cleaned up and restored to include native plantings to provide habitat and enhance the ecosystem.

While the current Comprehensive Plan may recommend development that includes infill and redevelopment, the Northport-Warner Park-Sherman (NWS) Neighborhood Plan, the *adopted* sub-area plan (Nov 2009), shows that there is a desire for open space shown for the Hartmeyer property, it is based on the wetland delineation of that time.

Overwhelmingly, the area residents who live in the adopted plan area and all the area neighborhoods are supportive of preserving the wetland ecosystem of the Hartmeyer property. Overwhelmingly at OMSAP-related meetings with area residents, young, old and millennials, *the majority opinion expressed was support for preserving ALL 30 acres and the creation of a public access natural area at the Hartmeyer property.* The wishes of the Sherman Neighborhood Association, Eken Park Neighborhood Association, the Emerson East Neighborhood Association, Madison Audubon Society, Sierra Club, Friends of Hartmeyer Natural Area and area residents and businesses is to conserve ALL 30 acres for a public natural area.

Storm water and Wetland Information

The aerial photos from the 1930s forward, show the land already disrupted - various fill, farmed, coal piles, diesel fuel tanks, baseball fields, dirt roads and the like, remnants of its history, its natural history are re-emerging as we no longer overuse the groundwater and climate change brings us a massive volume of rainfall, similar to the rain we are experiencing right now. The Hartmeyer natural area is re-emerging to its once marshland and wetland condition, not because we have done something to it, but ***because we have <u>not</u>.*** The groundwater levels are rising due to the abandoning of high capacity wells at the Oscar Mayer plant (due to contamination with TCE) and increased rainfall causing rising lake levels, all one integrated system in the Yahara River watershed.

Currently, surface water runoff from the paved parking area enters the low lying area but would have done so even if the area were not paved, as it sits on a slight rise above the low lying area, with a pitch towards the water feature. Madison allows untreated polluted storm water to enter into all sorts of systems within the Yahara River Watershed including the discharges into area lakes including Lake Mendota from the surrounding neighborhoods and into Starkweather Creek.

In understanding hydric soils, they function in this manner: 1. They facilitate and regulate the flow of water between groundwater systems and surface water systems. 2. They act as a recharge point that allows for the movement of water from surface water to groundwater and 3. They release groundwater to soil.

The wetland does serve to gather and absorb surface runoff as well as acts as a holding area to allow for gradual absorption. In addition, this wetland ecosystem provides for carbon sequestration, with soils being the largest carbon reservoir in the terrestrial carbon cycle. So by restoring the wetland ecosystem, we not only provide a beautiful wetland natural area, a public space for learning about and observing nature, a gathering place that is not about hard structures, we also can help in the reduction of our carbon footprint related to the planned increase of carbon in the north side due to the future home to over 200 Metro buses, the F35 jets and more diesel trucks related to the MG&E fleet of service trucks, and the increase in cars to the north side due to more people living on the north side.

On the following pages, are some images showing the use of the Hartmeyer land through time, and the wetland marsh area showing on aerial photos from throughout the decades, pre-1993. (The red outline indicates the boundary of the Oscar Mayer property on some images). Historic topographic maps and show that the Hartmeyer land was once marsh and wetland/upland. In truth, most of the lakeshore areas that are now all developed and being redeveloped in the Madison area were once open marsh and wetland supporting the Yahara River watershed. It was through the infilling of the wetlands and marsh areas with soil, public trash, rubble, construction debris, coal ash, and industrial toxic and hazardous waste, that we filled the wetlands and marshes in, and now redevelop and live on top of it. But the wetland and groundwater systems remain, despite our infilling. Wetland subsurface systems remain in place, and are not destroyed. As the saying goes, *a river runs through it*.

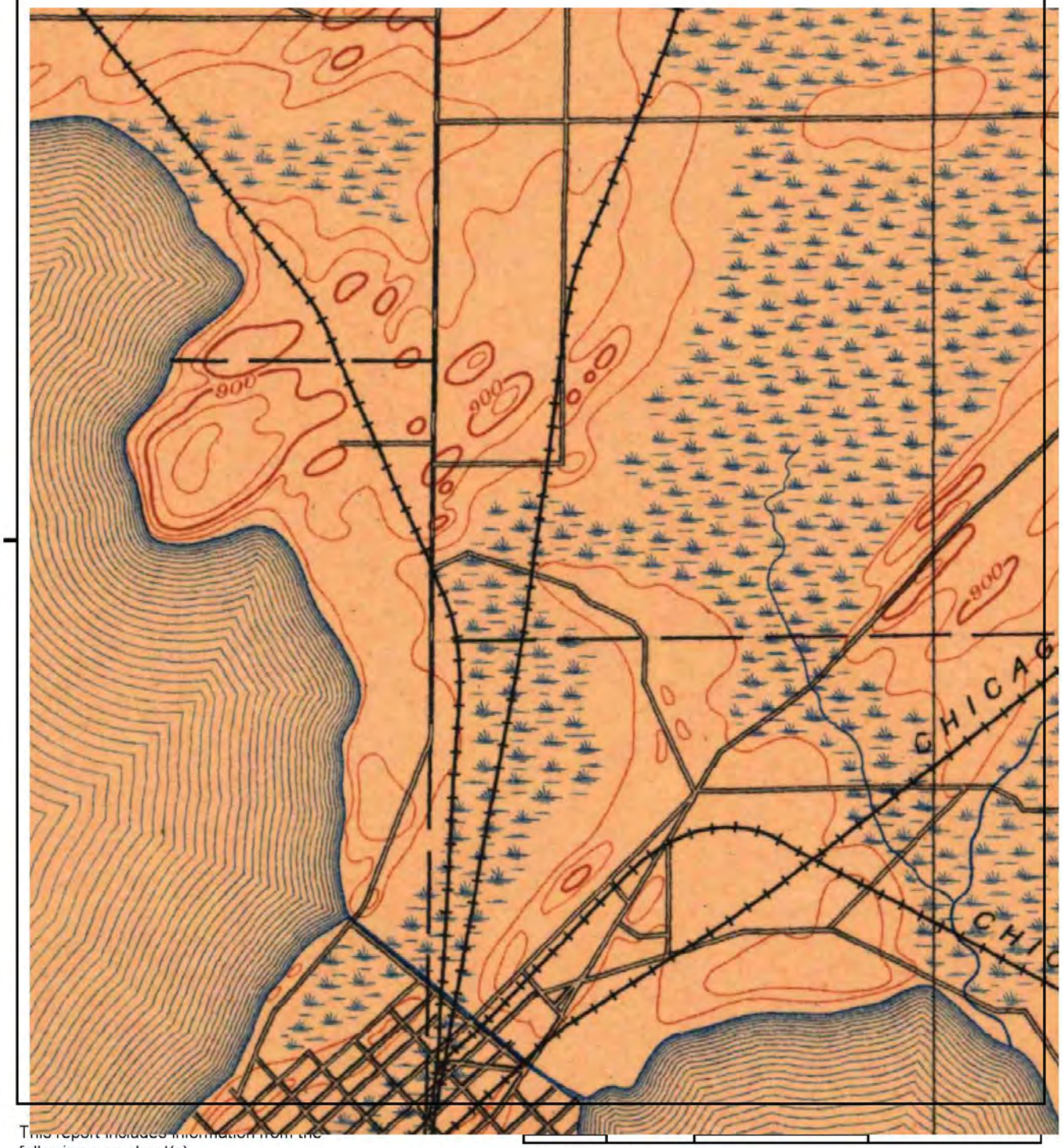
This image shows a **1947 view of Oscar Mayer and the Hartmeyer land**. It appears to show a large water feature on the property, with infill occurring in the current location of the Esquire Club and dental office along the western edge of the wetland along Sherman Avenue.

The pre-1993 photos that follow show a clear outline of a naturally occurring water feature throughout the decades. Take this pictorial tour of the Hartmeyer land as well as the Oscar Mayer site. The images show a regular water feature over time on the Hartmeyer wetland as well as some of the issues being faced now with the environmental clean up required including the storage tank locations and the location of the large coal pile along the rail corridor. Enjoy a bit of time travel…

EDR

Historical Topo Map

1890



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Madison, 1890, 15-minute

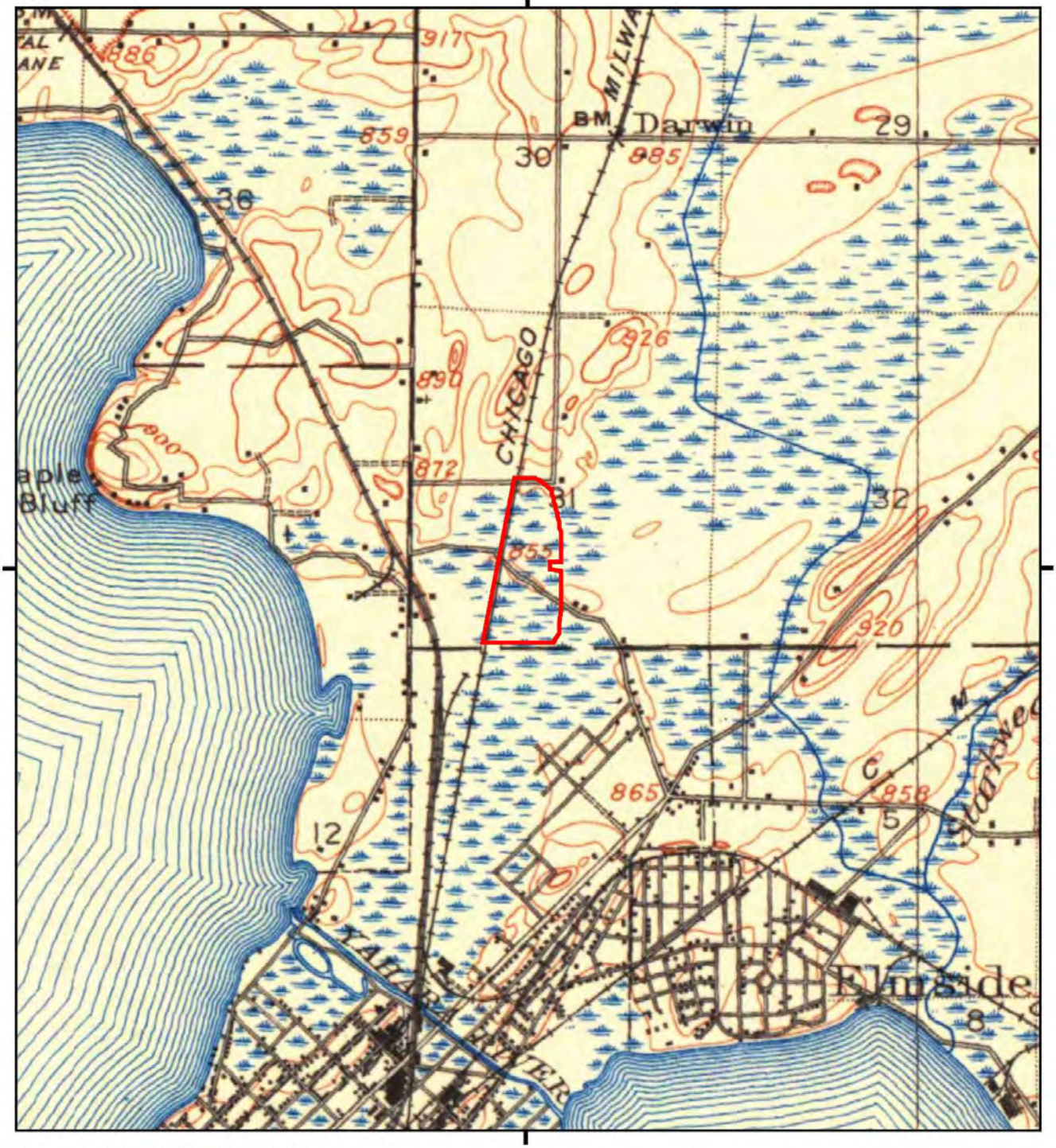
SITE NAME: Kraft Foods
ADDRESS: 910 Mayer Ave
Madison, WI 53704
CLIENT: ERM, Inc.

N

The dotted horizontal line is the quarter section line and also where Commercial Ave is located.

Historical Topo Map

1904



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

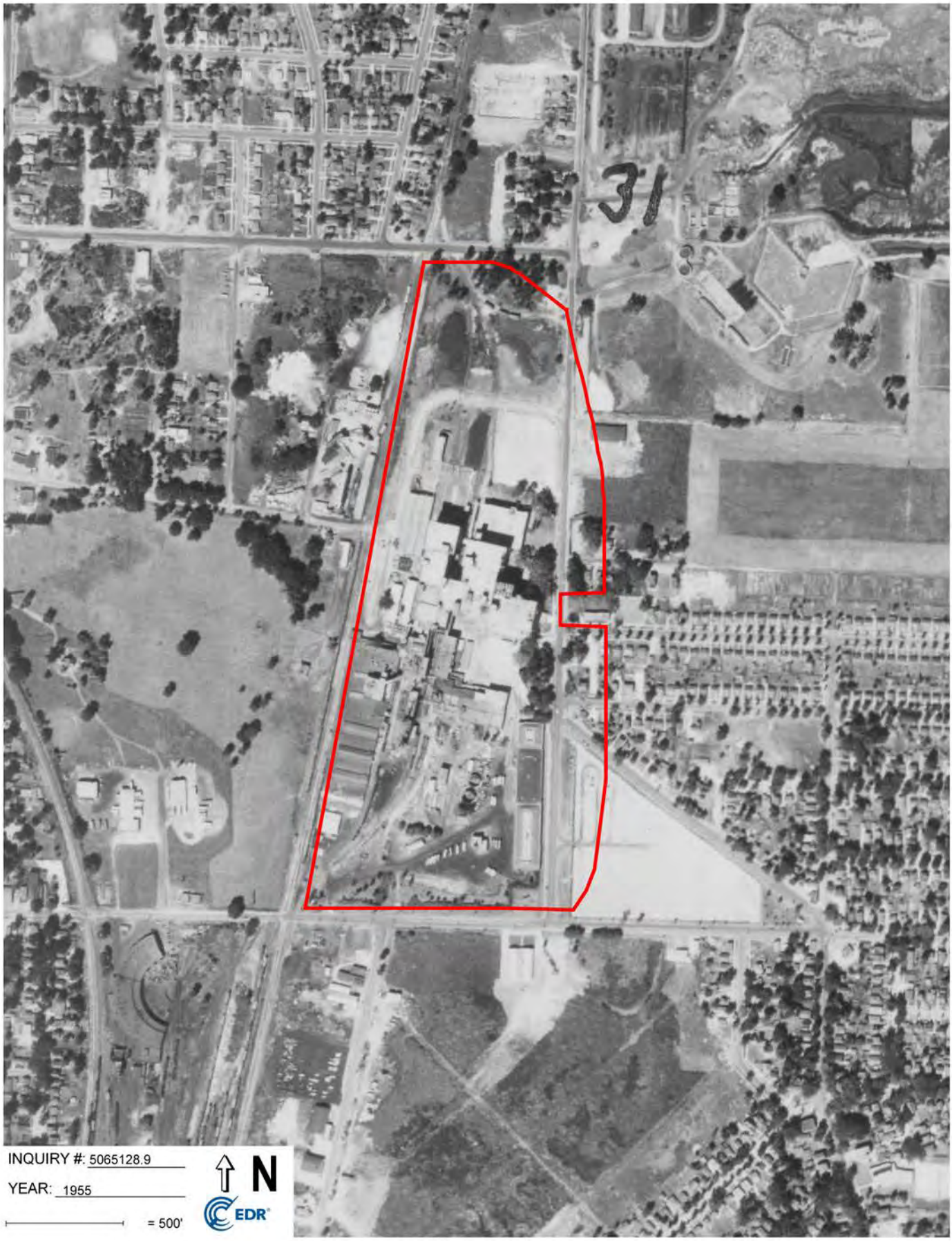
NW N NE
W E
SW S SE

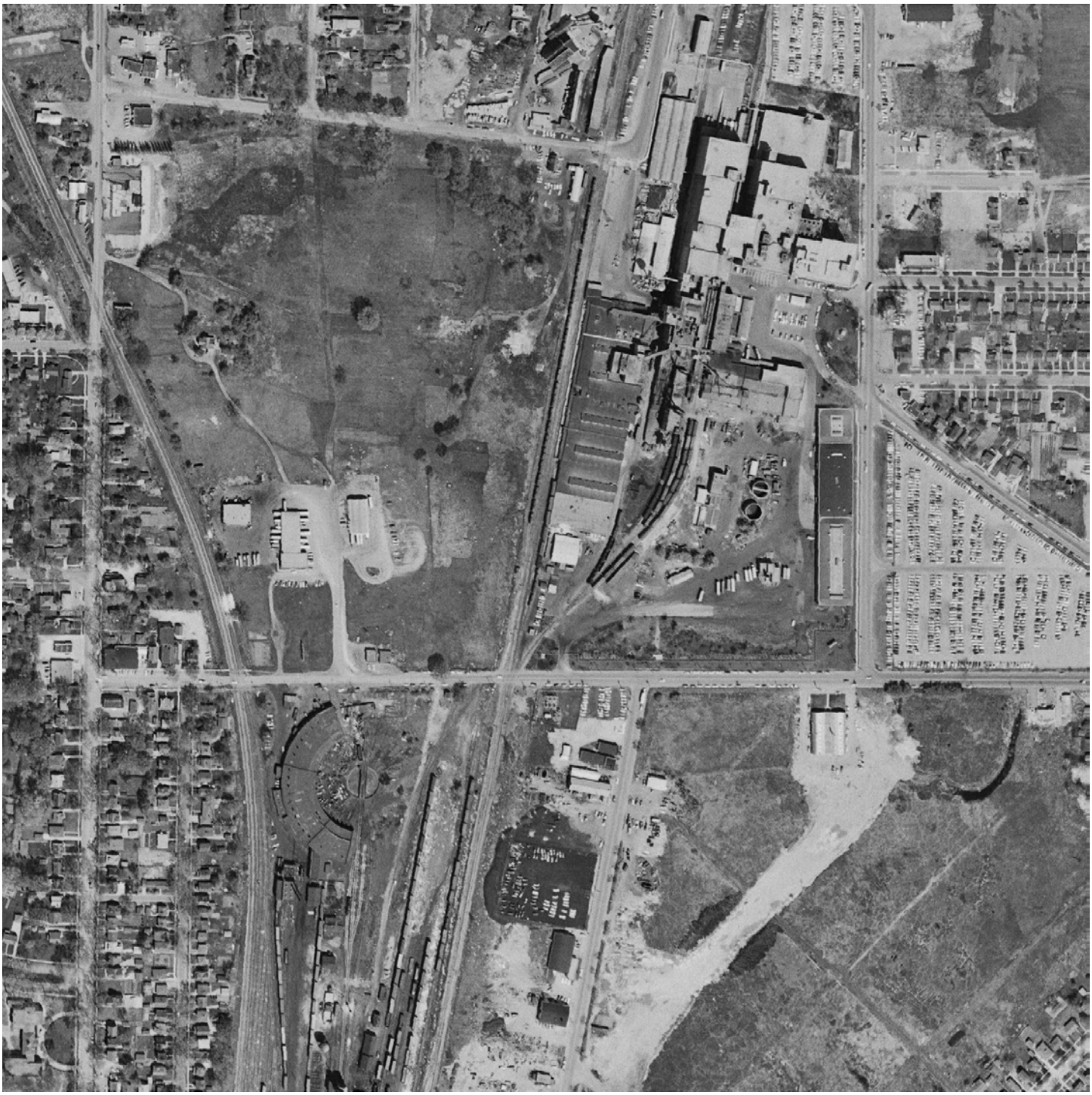
TP, Madison, 1904, 15-minute

SITE NAME: Kraft Foods
ADDRESS: 910 Mayer Ave
Madison, WI 53704
CLIENT: ERM, Inc.

N

1937 Showing very low water levels in Lake Mendota due to severe drought conditions. This would likely be why no indication of the wetland area is showing on the Hartmeyer land.


31
INQUIRY #: 5065128.9
YEAR: 1955
= 500'
N
EDR



1957


INQUIRY #: 5065128.9
YEAR: 1980
= 500'
N
EDR

We should consider the wetland ecosystem as an existing context for the neighborhood area. True context-sensitive design is required, as the Hartmeyer land is a key component of the neighborhood character and it offers a place in which community members feel ownership. Area businesses rely upon the wetland as a critical part of their business branding. The dental office facility on Sherman Avenue faces out onto the wetland and uses its visual calming effects to help their patients.

2000

Aerial photos show the wetland ecosystem, despite the challenges presented, is thriving as it returns to its historic capacity within the urban setting. The outline of the baseball diamond is still present.

2018

Cultural Inclusion and Equity

Recently, the Historic Preservation Plan was developed in Madison and it includes the "identification, evaluation, designation, protection and retention of significant architectural, historic, and cultural resources in the built and **natural environments***."* **The draft preservation** plan makes recommendations about education, outreach and tourism.

The plan includes an inventory of places that are significant to traditionally marginalized groups. There's also consideration given to religion, arts and literature, social and political movements. Strategies for marking these histories include creating storytelling plaques, promoting cultural tourism, and organizing educational events likes history tours. These are the very activities that could be taking place at the Hartmeyer natural area. The promotion of historic preservation as a driver of economic development is emphasized. The property could be eligible to receive historic tax credits.

The Comprehensive Plan also offers that we "preserve historic and special places that tell the story of Madison and reflect racially and ethnically diverse cultures and histories." Part of the Hartmeyer natural area is a confirmed Native American site and has documented archeological and human burial grounds, from early surveys. While the property has had some surveys completed through the years, there has not been one conducted near the three large oak tree area located along Roth Street. These large ancient trees are at least 200 years old and have witnessed the changes of time to their landscape. You can see them standing tall in all of the aerial photos. In speaking with the Wisconsin State Historic Society, the first place that a field survey team would look would be towards old trees when conducting a pre-construction survey. The ground around and under these trees would not have been disrupted, and so if there were artifacts to be found, it would be in the area of the old oaks. I would suggest that in these days of equity and trying to look towards a better way, we consider all people of color in this process. I have attended many city events where an

announcement is read aloud acknowledging the Ho-Chunk nation. I say, let's have an archeological survey completed in the area of the old oaks on Roth Street and create a true tribute to the tribe and their loved ones, as part of the Hartmeyer natural area story. So often the mounds are removed and then the site is no longer considered a sacred burial site.

The exploration of the history of the Hartmeyer Natural Area should be ongoing, and it will rely on help from local cultural organizations, preservation groups, neighborhood associations and Native American nations.

These are still sacred grounds to the Ho-Chunk, and should be for all of us. The Friends of Hartmeyer met with Ho-Chunk representatives in 2019 to discuss the possibility of naming the various wetland ecosystem areas, to provide historic information related to footpaths and trails, etc. The FHNA looks to continue this partnership and continue to learn about the land use in the area by the Ho-Chunk and how best to share that information. **Please insist that a site survey near the old oak trees be completed prior to any work on this site.**

The Friends of Hartmeyer Natural Area group formed a little over a year ago. It started out as an invitation to area residents, and many bags of trash, car tires and debris were removed. But more importantly, the wonderful diverse group of residents who showed up to share in that event was terrific. Many hands, of all colors, made light work. There is great enthusiasm from area residents to create a public access natural area and one that will be tended by the public that is already engaged in this work.

Recently, as a result of a horrible incident involving an African American birder in New York's Central Park, the Audubon Society chose to highlight this incident and take up the challenge to talk about Black Birders. They hosted a Black Birder Week to open up dialogue. As MAS states on it's website: "The birding community, the conservation community, outdoor-lovers in general—we all have a lot of work to do. We need to make sure that everyone feels safe exploring the natural world that we all share. We need to make birding an inclusive and welcoming space for everyone, regardless of their skin color. We need to listen to Black voices when they tell us what we could be doing better."

Rather than basing part of a major decision on city *staff anecdotes*, why not consider asking people of color to speak to their outdoor experiences and how they experience nature. This is a great opportunity to create an urban natural area that would be safe, accessible by all modes of transportation and inviting to all people. While Annette Miller did conduct meetings with underrepresented residents, only 39 people participated in her focus groups. This is not really a clear representation of what people of color on the north side think about this natural feature given they were told it would be a small neighborhood park. **Being denied the review of all options seems wrong.** Because the public was not invited to attend these meetings, the Conservation option "C" of ALL 30 acres was **not presented.** Is this an equitable planning process? Given what we are seeing in our country, in our city, the cultural shifts taking place every day, and public awareness towards the issues related to the *Black Lives Matter* movement, I believe that more people of color would use such a natural area if they felt safe enough to just leave their homes. Let alone go for a walk in an open space.

We can do better and have an opportunity towards inclusion in this placemaking process.

The Return of Species

As this area has slowly regained its natural appearance and historic wetland, area birds such as sandhill cranes and osprey, amphibians and other species have found this small 30 acres and call it home. The sandhill cranes raise colts in the wetlands and uplands each Spring, and there is the potential for native plant species that have long been cut back or under fill that could emerge, given time.

If there is a willingness to preserve this unique resource, Dane County and GroundSwell have also indicated interest in preserving this property (per County Supervisor Paul Rusk and GroundSwell Executive Director, Jim Welsh). **Please convene a meeting with the stakeholders and community members and groups, and the Board of Park Commissioners to share information and details and to discuss the purchase of the complete 30-acre ecosystem**. Area residents and businesses would also donate towards the creation of this park through crowd sourcing. The current information provided by the city staff does not take into consideration the ***shared costs*** that could occur if the various parties are brought to the table.

Current city purchases of land being considered in the area also include highly toxic chemical contaminated land (about 15 acres, Lots 1 and 2) at the north end of OM Station for the Metro bus operations. It was this very contamination that caused the closure of the use of high capacity wells on site for meat processing at Oscar Mayer. There is precedent for considering land that contains issues related to contamination concerns, throughout Madison, however the Hartmeyer land has much less to consider than is present at OM Station. The current owners of the Hartmeyer land are currently in a lawsuit to ensure that the property is cleaned up,

so the city would not have any liability for that process. Subsurface contamination could be excavated, as PAHs tend to cling to the soils and not move off site very much. The arsenic in the surface soils could be mitigated with strategic plantings and use phytoremediation to remove the arsenic over time. There are creative options for dealing with the contamination, let's look outside the box for solutions.

Let us consider creating an innovative natural area at the Hartmeyer land where the residents of the high-density, low-green space developments can go for nature recreation and ecology education.

Putting roads and high-density housing at Hartmeyer does not serve the residents of the Sherman Neighborhood, and having an open space as the redevelopment of OM Station property is underway, can only enhance the lifestyle of all area residents, both current and those yet to come. The current trend in the city is to plan for public transportation supporting existing and new development, rather than adding more cars and roads. We do not want added roadways throughout the Hartmeyer property. Transit oriented development does not mean adding cars and roads, but rather considering the best way to connect people to transit freedom: How do I travel today around Madison? Walk, bike, take the bus, light rail or the car (as a last resort option). The **Mayor is clear that she prefers fewer cars and is reducing roadways around the city.** Let's not add more cars and roads.

In these times of global pandemics and contagious disease, and the required personal distancing, and global climate change and our flooding issues, it is clear that open spaces are more important than ever for public health and safety. Let us provide area neighborhoods and residents, and all of Madison, an opportunity for a natural area that provides for outdoor recreation and a place to visit in times of distress to be provided with a calming place. Let us not forget that we are dealing with climate change, in the midst of a global pandemic.

The Hartmeyer natural area provides a balance point for public health, both mental and physical as well as a site for carbon sequestration and provides a safe and beautiful location for people to find solace in nature.

Let's see it for the unique resource that it is, how we can improve it, restore it and ecologically and economically remediate it. With a collaboration of stakeholders, an active Friends group and a community that clearly supports preservation of this historic site, we can make this natural area a reality. We need only be willing to decide to be innovative.

Please consider saving ALL 30 Acres. This is a once in a lifetime opportunity to keep this unique resource for the public benefit through a creative partnership, for now and in the future. For the Good of All of Madison.

Submitted in tribute to Alvina and all of the Madisonians that dared to dream, and took action.

WORKING PAPER
RESPONSIBLE PROPERTY INVESTING CENTER, UNIVERSITY OF ARIZONA
BENECKI CENTER FOR REAL ESTATE STUDIES, INDIANA UNIVERSITY

THE WALKABILITY PREMIUM IN COMMERCIAL REAL ESTATE INVESTMENTS

GARY PIVO[1] *AND JEFFREY D. FISHER*[2]

February 2010

ABSTRACT

The purpose of this study was to examine the effects of walkability on property values and investment returns. Walkability is the degree to which an area within walking distance of a property encourages walking for recreational or functional purposes. It is of particular concern to developers, investors and others interested in sustainable and responsible property investing because of its potential social and environmental benefits. We used data from the National Council of Real Estate Investment Fiduciaries (NCREIF) and Walk Score to examine the effects of walkability on the market value and annual investment returns of more than 4,200 office, apartment, retail and industrial properties over the past decade in the USA. We find that, all else being equal, the benefits of walkability are capitalized into office, retail and industrial property values with more walkable sites commanding higher property values. On a 100 point scale, a 10 point increase in walkability increases property values by 1 to 9 percent, depending on property type. We also find that walkability is associated with lower cap rates and higher incomes, suggesting that the higher values are caused by both higher incomes and expectations of less risk, greater income growth, or slower depreciation. Walkability had no significant effect on historical total investment returns. All walkable property types generated higher income and therefore have the potential to generate returns as good as or better than less walkable properties, as long as they are priced correctly. Developers should be willing to develop more walkable properties as long as any additional cost for more walkable locations and related development expenses do not exhaust the walkability premium.

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INTRODUCTION

The emerging field of Responsible Property Investing (RPI) is concerned with real estate investments that benefit both investors and the common good. It examines portfolio, asset and property management activities that go beyond compliance with minimum legal requirements to better manage the risks and opportunities associated with social and environmental issues. RPI encompasses all kinds of efforts to address ecological integrity, community development, and human fulfillment in the course of profitable real estate investing. It seeks to reduce risk and pursue opportunities while addressing challenging public issues facing present and future generations. Its goal is to address social and environmental problems related to the built environment through better understanding of financially prudent property investments that are consistent with principles of corporate social responsibility, smart growth, green building and sustainable urbanization.

In a recent effort to rank RPI criteria based on both financial materiality and the public interest, Pivo (2008a) found agreement among real estate, investment and academic experts that a high priority should be placed on the development of "higher density, mixed-use walkable places." However, in another study, real estate executives expressed the opinion that insufficient financial performance could be the biggest obstacle to RPI, even though 85% agreed they would increase their allocation to it if it met their risk/return criteria (Pivo 2008b). This study was designed to address this concern by examining the effects of walkability on the financial performance of real estate investments. In particular, we sought to determine whether walkable properties had market values, incomes, and investment returns that were equal to or better than less walkable forms of development.

This study is significant because it is the first to examine the effects of walkability per se on property income, values and returns on a national scale for office, retail, apartment and industrial properties. Walkability has become a prominent issue for real estate investors and developers as urban planners, governments, and public health leaders have increasingly embraced the goal of increasing pedestrian mobility. For example, according to a new global policy report by the World Cancer Research Fund/American Institute for Cancer Research (2009), in order to reduce preventable cancers linked to obesity and inactivity, governments should require increased walking facilities, developers should construct more projects that promote walking, and employers should occupy buildings that facilitate physical activity. This idea also was endorsed by former HHS Secretary Donna Shalala in her keynote address to the annual fall meeting of the Urban Land Institute in 2006 (Riggs 2006). Similar recommendations are emerging from global policy discussions on global warming (Ribeiro et al. 2007, Ewing and Rong 2008, Marshall 2008).

Our study is also significant because it is the first to examine Walk Score, a new measure of walkability and the first to be widely used in the marketplace. Every day, nearly 3 million walk scores are displayed online to people interested in knowing the walkability of a property. Walk Score is used on over 3,000 websites, has been featured in over 500 print publications and 50 TV and radio segments, named as one of the 7 ideas changing real estate by Inman News, and featured in discussions by the Wall Street Journal on the growing importance of walkability in the real estate market (Front Seat 2009).

Finally, this study links the subject of walkability back to the traditional literature on the determinants of property value and demonstrates how it builds on more than 40 years of related studies and reinforces our traditional framework for understanding such problems. It also makes contributions to small but significant lines of work on "local accessibility", which has been largely overlooked in the accessibility literature, and the economic consequences of land use mixing, something that was studied in the 1970s and 80s and has recently begun to reappear in the field of real estate and urban economics.

THE NATURE OF WALKABLE PLACES

Walkable places are streets and districts with physical attributes that encourage walking for functional and recreational purposes. They are found in various settings including new neo-traditional subdivisions, turn of the century streetcar suburbs (Southworth 1997), urban and suburban centers (Lang et al. 2008), greenbelt new towns (Ahrentzen 2008) and rural villages (Dalbey 2008).

Researchers have suggested that walkable places may produce a variety of environmental and social benefits. Environmental benefits may include less air pollution, auto use, and gasoline consumption (Frank et al. 2000, Ewing and Cervero 2001, Frank and Engelke 2005). Social benefits could include greater physical activity (Frank et al. 2006, Doyle et al. 2006, Kerr et al. 2006, Pikora et al. 2006, Forsythe et al. 2007, Frank et al. 2007) and increased social capital including more community cohesion, political participation, trust, and social activity (Leyden 2003, duToit et al. 2007). These benefits remain a topic of ongoing research, though evidence supporting them is emerging from well controlled studies (Handy 2005, Cao et al. 2006, Frank et al. 2007).

We define walkability as the degree to which an area within walking distance of a property encourages walking trips from the property to other destinations. It interacts with the property users' walking preferences and capabilities to produce the timing, quantity and distance of walking trips that occur. Several different physical and social attributes of the area around a property can affect walkability. As such, it is a multi-dimensional construct composed of different factors which together comprise a single theoretical concept. Contributing attributes include urban density, land use mixing, street connectivity (i.e. the directness of links and the density of connections), traffic volume, distance to destinations, sidewalk width and continuity, city block size, topographic slope, perceived safety, and aesthetics (Frank and Pivo 1994, Hoehner et al. 2005, Cao et al. 2006, Lee and Moudon 2006, Parks and Schofer 2006).

Of all these attributes, the presence of desired destinations within walking distance of a property may be most important. Hoehner et al. (2005) found it was the strongest correlate with home-based walking trips when compared to other social, transportation and aesthetic features. Lee and Moudon (2006) also found that distance to routine destinations, such as grocery stores, eating places and banks, is particularly useful for predicting pedestrian activity. This dimension of walkability is similar to what Handy (1992) calls "local accessibility" which is "primarily determined by nearby activity, most of which is oriented to convenience goods, such as supermarkets and drug stores, and located in small centers". As Li and Brown (1980) observed, access has traditionally been measured in relation to regional centers, but also important are access to the corner grocery, the neighborhood park, or local schools. The main difference, however, between local accessibility and walkability to desired destinations is that local accessibility presumably includes opportunities that are easily reached by all transport modes, including cars, while walkability depends on opportunities that are easily reached on foot. As such, walkability is concerned with the availability of destinations in a much smaller area around a given property than local accessibility (e.g., within ¼ to 1 square mile).

DEMAND FOR WALKABLE PLACES

Some researchers forecast growing demand for walkable places. Myers and Gearin (2001) point to a desire for walkable communities, especially among older consumers. They predict that as older consumers grow as a proportion of the total population, demand for walkability will grow as well. They also list other trends supporting this shift including growing traffic congestion, falling urban crime rates, more attractive ethnic enclaves and urban vitality produced by immigration, a growing café culture, and a growing record of fashionable and successful higher density housing. Bailey and Humphrey (2001) list additional drivers that could support the market for walkable urban places

including urban job growth, tight urban housing markets, preferences for urban amenities, and support for public policies and investments that favor revitalization, alternative transportation modes, historic preservation, and urban parks and open space. Shiller (2007) has recently suggested that concerns about pollution, the environment and energy conservation may stimulate a move toward walkable urban centers, though he is uncertain it will occur, and if it does, he thinks it could take many years. But others conclude that unmet demand already exists today. Levine and Inam (2004) found in a national survey that developers perceive considerable interest among consumers in alternatives to "conventional, low-density, automobile-oriented suburban development" including higher density, mixed use, pedestrian oriented places. They also found that developers think there is an inadequate supply, which they attribute to restrictive local government regulations. A survey of residents in Boston and Atlanta by Levine et al. (2002) supports the developers' impressions: there seems to be a mismatch between the desire for pedestrian-friendly neighborhoods and the choices available to consumers. A more recent study by Levine and Frank (2006) also found a correlation between the desire for walkability and the desire for neighborhood change, lending further credence to the view that there is an undersupply of walkable neighborhoods relative to demand. Generally then, there may be an unmet demand for walkability that is increasing with the passage of time.

THE EFFECTS OF WALKABILITY ON PROPERTY VALUES AND RETURNS

Developers and investors would be key players in the creation of more walkable cities, but the real estate economics of walkability is not well understood. Does it add or detract from property values? How does it affect investment risks and returns? If walkability improves profits and returns, we could expect the private sector to produce more walkable places, so long as land use controls permit it (Levine 2006). If, however, the financial effects are more neutral or negative, then producing more walkable places may require public subsidies, mandates or partnerships.

WALKABILITY AS A DETERMINANT OF URBAN LAND VALUES

Determinants of urban land values have been studied for over 100 years. Seminal works focused on the role of accessibility and transportation systems (Hurd 1903, Haig 1926, Alonso 1960), but scholars have long understood that other factors, such as site advantages, can also be consequential (Wendt 1957). Brigham (1965) was perhaps the first to offer a comprehensive set of determinants and to quantify their contribution using regression analysis. In his work on single-family home values, he identified four groups of explanatory factors: accessibility (e.g. distance to workplaces and other desired destinations), amenities (e.g., air quality), topography (e.g., slope, elevation and views) and historical factors (i.e. conditions extant when development occurs). Within 10 years, Stull (1975) was able to observe that "it has become customary to think of a single-family parcel as a bundle of characteristics" that can be classified into four "mutually exclusive and exhaustive" categories including accessibility (e.g., distance to desired destinations), physical site characteristics (e.g., building age), environmental features around the parcel (both social and bio-physical), and public sector factors (taxes and services).[3]

Walkability seems to fit rather well within this traditional theory of land value determinants with one exception; the factors that determine walkability bridge two of Stull's categories. The presence of

[3] Ball (1973) reviewed the work of these and other pioneers. Since then, the research has been extended to cover nonresidential properties and other determinants beyond Stull's four categories including buyer and renter characteristics, property management quality, lease provisions, regional economic drivers and macroeconomic conditions (Ogur 1973, Hoag 1980, Guntermann and Norbin 1987, Glascock et al. 1990, Sirmans and Benjamin 1991, Mills 1992, Ambrose 1990, Sirmans and Guidry 1993, Asabare and Huffman 1996, Kim and Nelson 1996, Benjamin et al. 1997, Buttimer et al. 1997, Sivitanides 1998, Frew and Judd 2003, and Rosiers et al. 2005.

desired destinations within walking distance falls within the "accessibility" category, while factors such as path connectivity, topography and safety would fit under "other environmental features around the parcel". Walkability includes characteristics that may not fit neatly into just one of the traditional "mutually exclusive" categories, but neither does it require going beyond the categories identified by Stull over 30 years ago.

Most of the work by Brigham, Stull and others focuses on single family property values. In this paper, however, we look at offices, apartments, retail and industrial properties. Is the prior work transferable? Following traditional reasoning about accessibility, one could argue that walkability can be expected to lower the cost of transportation to food, recreational, financial, and retail services which are desired by the tenants, workers, and customers who frequent these other types of buildings. And in a world of more single adult and two-worker households, where time budgets for daily tasks are severely constrained, as well as a world of growing traffic congestion and transportation costs, where the costs of mobility are rising, it may well be easier in more walkable places for apartment owners to attract and retain renters, for office, retail and industrial employers to attract and retain employees, and for retailers to attract customers. These benefits to tenants would then be capitalized into higher rents and lower turnover, which would increase property incomes and values.

It is possible that walkable places have other merits as well that are capitalized into property values. For example, they may be more widely recognized as distinctive "places" with greater prestige than other locations, which, as Gertrude Stein famously put it, "have no there there". Walkable places may also be valued for the interesting diversity, sense of community and vitality which they can offer the residents, workers, and customers who use them.

Thus, in theory, there are reasons to expect higher property values in more walkable places. Although we have no empirical papers so far directly confirming it, there are a number of related studies that would support the proposition that walkability increases property values.

Two teams of researchers have examined the value of "new urbanism" or "traditional neighborhood development", which emphasizes pedestrian-oriented design. Tu and Eppli (1999) studied Kentlands, a community in Gaithersburg, Maryland which they describe as "one of the best and most complete" new urbanist cases. Using data on single family home transactions and hedonic models, they found a 12 percent premium for Kentland properties. They later expanded their work to include cases from Sacramento and Chapel Hill and again found a 4 to 15 percent premium which could not be explained by housing characteristics other than the more pedestrian-friendly design (Tu and Eppli 2001). Similar work was completed by Song and Knaap (2003) on the Portland, Oregon region. They looked at separate measures of urban form that are associated with walkability, including the percent of homes within ¼ mile of commercial uses and bus stops, density, mixed use, circulation system design, and the availability of non-auto travel modes. They found buyers prefer pedestrian access to commercial uses and a 15.5 percent premium for houses in neighborhoods with new urbanist features.

Other researchers, studying the determinants of rent, have included variables in their analyses that pertain to walkability. Sivitanidou (1995) looked at the effect of "utility-bearing worker amenities" on office rents in over 1,400 properties in the Los Angeles area and found that the level of retail amenities in the surrounding area increased rents. This is consistent with Mills (1992) who found that the presence of a bank and restaurants in an office building increased office rents per square foot. Working on apartment buildings, Des Rosiers and Theriault (1996) found that the distance to primary schools and shopping centers were inversely related to rents. Except for Mills' work, its unknown whether the schools and shopping examined by these researchers were within walking distance of the properties, but their positive association with rent suggests that access to them is an amenity for office workers and apartment tenants that can increase rents and values.

Other work has focused on the effect of land use mixing on residential property values. This line of work grew from interest in the effectiveness of zoning; particularly whether separating land uses improves property values. These studies were not concerned with walkability *per se*, but land use mixing, which is analogous to proximity to desired destinations.

According to Matthews (2006) there are two views, grounded in urban economic theory, on how the presence of nonresidential uses in a residential area should affect home values. On the one hand, microeconomic theory predicts that value is related to transportation costs. So as the distance to destinations, like work or shopping or entertainment, declines with less separation between uses and increased mixing, residential values should increase. This has been called the proximity effect. It should be noted, however, that this increase in value should come about because it is less expensive to access opportunities by all modes of travel, not just by walking. So, even if land use mixing and greater proximity to desired destinations improves walkability, it is not just the greater ease of walking that would drive values higher, it is the lower cost of all forms of transportation that is being capitalized into property prices. This should be kept in mind later when considering the results of our study. Nonetheless, walkability can be associated with higher property values, even if those higher values are not the result of greater walkability alone.

The second view on how nonresidential uses should affect home values recognizes that there may be disamenity effects from land use mixing. Nonresidential uses can produce negative externalities, such as noise, traffic or litter, and that can reduce residential values.

Some prior empirical work found no evidence that land use mixing affects property values (Crecine et al. 1967, Rueter 1973). Other quantitative studies produced evidence that both proximity and disamenity effects are operating simultaneously. For example, Kain and Quigley (1970) found evidence of the disamenity effect when they showed that commercial and industrial uses in the immediate vicinity of housing lowered apartment rents and single-family home values. Stull (1975) also found that industrial, vacant and multifamily land uses negatively affected single family values as did commercial properties after it exceeded 5% of the land area. More recently, Mahan, Polasky and Adams (2000), found a negative relation between residential values and proximity to commercial and industrial zones. All of these studies demonstrate disamenity effects on residential uses from land use mixing. However, evidence of proximity effects on residential values, especially from commercial and recreational uses, has been published by Li and Brown (1980), Cao and Cory (1982), and Song and Knaap (2004).

Li and Brown (1980) and Colwell et al. (1985) have paid particular attention to the trade-off between the proximity and disamenity effects. They hypothesize that the net of the two effects on home values is negative where non-residential uses are close to homes and positive farther away.

After reviewing much of this literature, Matthews (2006) concludes that both positive and negative effects may decline with distance, and that the negative effects probably extinguish more quickly than the positive ones producing a net benefit reflected in higher values for residential uses located more than a minimum and less than a maximum distance from nonresidential uses. He goes on to combine this conclusion with data that suggest that the effect of proximity depends on street layout. For example, curvilinear and cul-de-sac streets can make it difficult to access retail services from homes even if they are close by as measured by straight-line distance. The net benefits are only possible when desirable destinations are both proximate and accessible (Matthews 2006, Matthews and Turnbull 2007). This important insight, that accessibility is a function of both proximity and connectivity, was also offered by Brigham (1965) four decades earlier.

There are two additional conclusions suggested by the literature. One is that once the mix of nonresidential uses exceeds a certain level in an area, the disamenities effects may begin to dominate. The other is that some non-residential uses, such as retail, parks, and offices, tend to have a more

favorable impact on single family values compared to apartments and industrial uses. It seems logical to expect that both the precise amount and the specific mix of uses in an area can affect property values. Moreover, each type of property may differ in how it responds to different amounts and types of other uses. For example, shops and parks and restaurants may benefit residents in homes and apartments and workers in non-residential properties, while industrial uses may always do best when located away from homes and shopping. A search for such "optimum blends" has not been conducted by researchers so far, but it is logical to expect specific uses to benefit most from proximity to a specific amount and mix of other uses.

Market Values and Investment Returns

All of these prior studies suggest that walkability could well produce higher property values. If demand for walkable places is growing and currently exceeds supply, if homes in new neighborhoods designed to promote walking sell at a premium, if access to schools, banks and shopping increase office and apartment rents, and if land use mixing increases property values, then it seems reasonable to hypothesize that walkability improves incomes and values. But properties which produce more income at any given point in time will not automatically generate higher investment returns if the higher income was already expected when the property was acquired and purchased at a price that reflects that expectation. Assuming the same risk, for actual (*ex post*) returns to be higher for walkable properties, income would have to be higher than was expected when the property was acquired or appraised. This is because property values are generally a function of expected earnings, given a certain level of risk. If income for walkable properties was higher than expected, they would have generated higher *income returns*. And if walkable properties appreciated more than was expected, due to faster than expected income growth or a decline in perceived relative risk, they would have generated higher *appreciation returns*.

Prior studies have shown that certain macroeconomic conditions affect property returns including GDP, inflation, vacancy rates, and employment growth (Sivitanides 1998, de Wit and Van Kijk 2003). But unanticipated effects in these conditions would likely have the same effect on both more and less walkable properties. Unanticipated effects on incomes or values that might selectively affect more walkable properties could include changes in the cost of vehicular transportation and congestion, a cultural shift in favor of health and exercise, or more favorable attitudes toward street life and urbanism. The demand studies, discussed above, point to recent trends which may not have been anticipated by investors and could have uniquely affected more walkable properties. If, as some argue, demographic changes and other factors are causing an unanticipated shift in demand toward more walkable properties, then unexpected growth in earnings and values could well have caused more walkable properties to outperform as investments.

So, the effects of walkability on property values and incomes on the one hand and investment returns on the other must be considered as two separate questions. Values will be higher if there are benefits from walkability that are capitalized into property prices. Returns will be higher if incomes or appreciation are larger than were expected when walkable properties were appraised or acquired.

Based on this review, we concluded that walkability may well be producing benefits that are reflected in higher market values and incomes. We also suspected that a shift may be occurring in the marketplace in favor of more walkable places which has not been fully anticipated by investors or appraisers. Therefore, we hypothesized that walkable properties have been valued as much or more and produced investment returns as good as or better than other more auto-oriented real estate.

METHODS

To test our hypotheses we combined real estate performance information from the National Council of Real Estate Investment Fiduciaries (NCREIF) with walkability data from Front Seat. NCREIF is a non-partisan source of real estate performance information based on property-level data submitted by its data contributing members, which include tax-exempt institutional investors and investment managers. Front Seat is a civic software company that developed Walk Score, an online tool that provides walkability ratings for any address in the USA.

NCREIF has information on the financial performance, physical features and location of office, hotel, apartment, retail, industrial and other properties. Properties owned by contributing members are included in the pool, and added or removed as the members acquire or sell holdings. The financial data for each property are quarterly observations for those quarters when it was held by a contributing member. Most properties do not have quarterly financial information from 1977, when the dataset was established, until the present because they were not held for the entire period.

For our work, we selected all stabilized office, apartment, retail and industrial properties that were in the NCREIF pool for at least one quarter from 2001-2008 and had complete addresses. Addresses were needed so we could obtain geocodes, which were needed to obtain information from other data sources (discussed further below). That came to a total of 4,237 properties with a market value of over $211 billion. We obtained Walk Score ratings from Front Seat for each of these locations.

Because the dataset increases in the quarter a new property is acquired (or a new member joins NCREIF and starts contributing) and data is no longer available in quarters after a member sells a property to a non-member, our dataset varied for any given quarter. Altogether, we had 44,169 observations with Walk Score ratings.

In order to understand how well our final dataset represented all US commercial properties, we compared the final sample to data from the US Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS), which estimates the number of commercial buildings in the nation by region and type. Excluding apartments, which were also in our dataset, the distribution of our sample by region and by property type fell within the 95 percent confidence intervals for the estimates for the entire US commercial building stock generated by the EIA from CBECS. Nonetheless, when we compared our sample of commercial buildings to the CBECS population estimates, our sample was over-weighted toward industrial properties, over-weighted toward western properties, and under weighted toward all other types and regions. To address any bias this may have introduced in our results, we conducted separate analyses by property type. We also tested the robustness of our results by running separate analyses by region, property value, and regional walkability. One bias we could not check the sample for was financial performance. If NCREIF members drop low performing properties from their portfolios, then our sample would be biased toward higher performing properties. And if the effects of walkability covary with property performance, this could limit the ability to generalize our findings to properties that do not perform to institutional standards. This could put some limitation on the external validity of our study but it would not affect its internal validity since it would not change any relationships we observed between walkability and our dependent variables.

We used ordinary least squares regression analysis to test our hypotheses. Because the sample had characteristics of an incomplete panel, we also used the random effects panel regression model, which is discussed further under Robustness Checks. Table 2 gives definitions and summary statistics for the variables used in the study.

Table 2: Variable definitions and summary statistics

Variable	*Definition*	*Obs.*	*Mean*	*Std. Dev.*	*Min.*	*Max.*
WALK SCORE	Walkability index based on distance to desired destinations.	47,263	60.17	22.90	0	100
VALUE	Value of the property at the end of the quarter.	47,262	43,500,000	77,500,000	209,850	1,730,000,000
NOI	Net operating income per square foot	45,946	2.48	2.27	0.00	48.33
INCRET_QTR	Mean income return (cap rate) for the current and prior three quarters.	47,263	0.017	0.012	-0.341	1.656
APPRET_QTR	Mean capital return for the current and prior three quarters.	47,263	0.011	0.186	-10.751	27.819
TRET_QTR	Mean total return for the current and prior three quarters.	47,263	0.028	0.187	-10.843	27.912
REG_EMP	9 quarter moving average employment growth rate in the CBSA, expressed annually.	49,987	1.68	2.23	-8.73	25.64
SUPPLY	9 quarter moving average office building growth rate in the CBSA, expressed annually.	59,898	1.94	2.14	0	29.02
OCC_CBSA	Average occupancy rate for the property type in the CBSA for the quarter.	47,263	0.91	0.58	0.02	1.00
RET_CBSA	The average quarterly total return in the CBSA for all property types in the current and prior three quarters.	47,263	0.027	0.052	-0.972	0.923
NPITOTRET	Quarterly return for all properties in the NCREIF Property Index.	47,263	0.024	0.029	-0.083	0.055
AGE	Age of the property (years).	43,219	18.60	15.21	0	124
SQFT	Size of the property (square feet).	47,263	277,288	329,086	5,858	2,260,000
FLOORS	Number of stories.	47,263	3.3	6.6	0	76.0
FLOORS2	Number of stories squared.	47,263	54.6	253.1	0	5,776
PROPCRIME	Property crimes in city per 100,000 persons.	38,487	4,589.6	5,187.1	353.9	150,000
PROPTAX	4 quarter moving average property tax per $ of property value (in dollars).	46,704	0.014	0.005	0.000	0.066
BGPOPDEN	Census block group population density in persons per square mile in 2007.	47,263	5,405.3	14.464.9	0	226,900
TRANSITHALF	A dummy variable where 1 = within ½ mile of a fixed rail transit station.	47,263	0.14	0.34	0	1
TRAVHOMEWORK	Mean travel time (minutes) from home to work in the census tract for all workers and all 11 categories of means of transportation to work.	46,875	25.17	5.68	0	71
MSADEN	Persons per square mile of land area in the city or census designated place.	50,633	939.74	1,065.32	6.81	6,683.03

WALK SCORE

The walkability measure used in the study was Walk Score. It rates the walkability of an address by determining the distance to educational (schools), retail (groceries, books, clothes, hardware, drugs, music), food (coffee shops, restaurants, bars), recreational (parks, libraries, fitness centers), and entertainment (movie theaters) destinations. The algorithm awards points based on distance to the nearest destination of each type using Google Maps. If the closest establishment of a certain type is within one-quarter mile, Walk Score assigns the maximum number of points for that type. The number of points assigned declines as the distance approaches 1 mile and no points are awarded for destinations further than 1 mile. Each type of destination is weighted equally and the points assigned to each category are summed and normalized to yield a score from 0–100.

Some of the destinations analyzed in Walk Score are most likely to be accessed from homes or hotels (e.g., movie theaters and schools) but most could be desired destinations from both residences and workplaces. Consequently, it is reasonable to expect Walk Score to have an economic effect on both residential and nonresidential properties. Positive effects would likely be greatest for buildings whose value is most sensitive to the locational advantages, amenities and services that walkability provides its occupants. So we thought that walkability might be most beneficial for apartment and offices. For industrial properties, we thought there could be a negative effect because of the desire to avoid conflicting land uses and pedestrian activity. For retail properties, we the outcome seemed less clear. Higher Walk Score could mean more competition but it could also mean more foot traffic and agglomeration economies.

A few limitations of Walk Score should be noted. First, it weights all destinations equally. Lee and Moudon (2006), however, found that out of the 24 destinations they studied, only groceries, schools, banks, restaurants and bars were significantly associated with home-based walking. Walk Score does not count banks. It is also possible for a property to have a relatively high Walk Score without being close to what Lee and Moudon found were the most significant destinations. A second limitation is that it does not account for other factors that have been empirically or theoretically linked to walkability. The most notable is connectivity. As noted above, walkability is a function of both proximity and connectivity. Walk Score measures proximity but it does not consider topography, physical barriers, connectivity and street patterns, which can affect accessibility (as measured by travel time, effort, or distance) to proximate destinations (as measured by straight line distance). Other correlates of walking not measured by Walk Score include block size, sidewalk length and width, population density and security (Hoehner et al. 2005, Lee and Moudon, 2006).

Despite these limitations, Walk Score offers two important advantages. First, it measures proximity to desired destinations, which prior research has found is the best predictor of walking. Second, it covers all properties nationwide, allowing it to be used for a national study in combination with the NCREIF dataset. Both Moudon and Lee (2003) and Parks and Schofar (2006) discuss other more comprehensive indices of walkability, but so far no one approach has become the standard and no other measure of walkability is available nationally other than Walk Score.

Other caveats should also be mentioned to prevent misinterpretations of the results. First, Walk Score is not a traditional measure of land use mixing which is usually measured by taking into account the total amount and intensity of other land uses in a given area. Walk Score only measures whether there is at least a single case of various establishments nearby. It does not recognize the size or intensity of those uses, it does not count the percentage of a given area devoted to various uses, and it does not measure uses other than the 14 that it tracks. The reader should therefore be careful when comparing the findings from this study to other work dealing with land use mixing. While Walk Score does capture a particular type of land use mixing, it is a unique measure of that phenomenon (Hess et al. 2001, Krizek 2003). Second, Walk Score captures accessibility to desired locations within walking distance

from a given origin. But, as we previously noted, any economic value associated with greater walkability probably reflects the value of greater accessibility by other travel modes as well. As we previously warned, the reader should be careful not to assume that any walkability premium is only due to the added value placed by consumers on the ability to walk. In all likelihood it also reflects the value placed on the ability to easily drive or bicycle to nearby destinations. Nonetheless, the fact that walkability may produce accessibility benefits for non-walkers does not diminish the validity of any findings that walkable urban form is associated with higher property values. It only means that it brings with it an indivisible package of benefits that accrue to other forms of transportation as well. Third, for retail properties, walkscore does not differentiate between enclosed malls, shopping centers and freestanding retail outlets. A retail property in a mall could have the same Walk Score as a freestanding retail property, depending on its proximity to other services. And fourth, Walk Score does not differentiate between whether an address is a residence, workplace, retail outlet or other use. High walkability from a residence implies the potential for a relatively car-free lifestyle while high walkability from an office building or retail outlet does not because it may still require pedestrians to travel to the location from their home, and that could require other travel modes. Walk Score does not account for the distance to housing and as such is dissimilar from concepts such as jobs-housing balance, retail-housing balance or urbanism which imply a mix of housing, jobs, shopping and other daily needs all located in close proximity to one another.

Figure 1 gives two examples of the Walk Score method using maps of two neighborhoods in Jacksonville, Florida. On each map there is a star showing the location of a property being scored and icons indicating the locations of destinations surrounding the property. Tables are also presenting listing distances to the nearest destinations of each kind. The map for the San Marco neighborhood also illustrates one of the limitations of the method. There is an east-west freeway that may block access from the property being scored to services north of the freeway. The Walk Score protocol does not account for such barriers which, if impenetrable, should lower walkability. To help the reader interpret our findings presented later in the paper, we will compare our results in terms of properties with walk scores of 80 and 20. Figure 1 will help the reader understand the difference between these scores.

FINANCIAL VARIABLES

Data for whole buildings were provided by NCREIF on net operating income, market value and quarterly investment returns. Actual accounting data were available for net operating income. Appraised values were available for the properties that had not sold and transaction prices for properties that had sold -- the same appraisals and transaction prices used to calculate the quarterly NCREIF Property Index. Many studies have shown that appraised values tend to lag transaction prices by a quarter or two in appraisal-based indices. One reason for this is the nature of the appraisal process which relies on historical data such as comparable sales. Another reason is that not all properties are actually revalued every quarter. Some may only be revalued two or three times a year. However, virtually all of the properties are revalued at least once a year. Since the purpose of this study was to examine cross-sectional differences in property values as a result of different RPI characteristics, a delay of a quarter or two in updating the appraised value of a particular property did not significantly impact the relative cross-sectional differences in properties. Said differently, since properties with and without a particular RPI characteristic have the same appraisal lag, the cross-sectional comparisons are on an apples-to-apples basis.

The log of the end of quarter market value was used in the market value regressions. Return variables were based on the average compound return over the current and prior 3 quarters. The log of 1 + return was used in the return regressions because the values could be negative. Three components of return were analyzed: Income Return which measures that portion of total return attributable to each property's net operating income, Capital Return which measures the change in market value from one period to the next and Total Return which is computed by adding the Income Return and the Capital Return. Appendix A provides a more detailed description of the return variables.

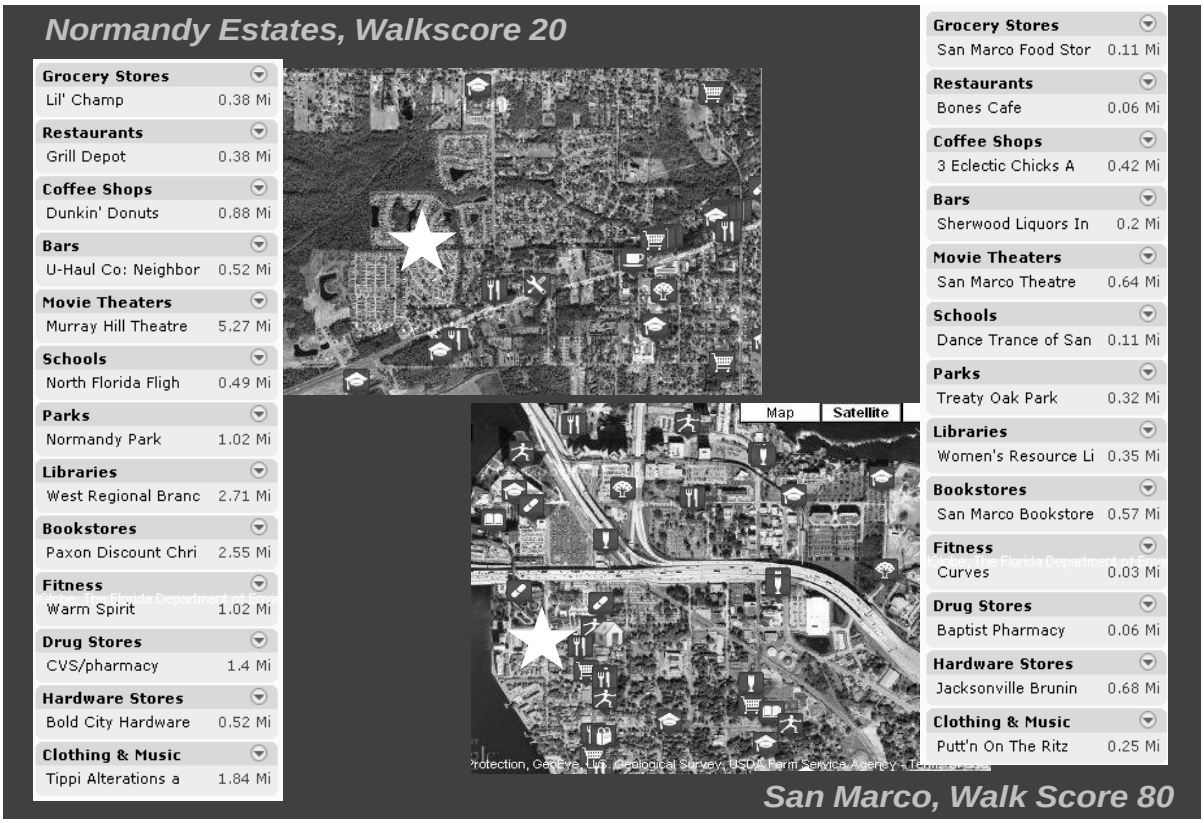

Figure 1: A comparison of two neighborhoods in Jacksonville, Florida with low and high walk scores.

It should be noted that bias associated with appraisal smoothing at the individual property level is different from that at the index level. There are "unsmoothing techniques" that can be applied at the index level to account for the fact that not all properties are revalued every quarter. But this is not appropriate for individual properties. The problem caused by individual properties not being revalued every quarter is that in those quarters the property is not revalued, there will be no change in value and the return is biased toward zero. Furthermore, when there is a revaluation, the return will reflect all the change in value since the last appraisal. Virtually all properties in the index are revalued at least once a year. Thus, we use a four quarter moving average of returns as our dependent variable. This allows us to better capture the trend in returns than using single quarter returns. Each quarter will reflect how values have changed on average over the past four quarters rather than having some quarters with no change in value and others with a too high (or too negative) change in value that reflects more than one quarter. Because quarterly returns will tend to be correlated over time, we used a panel regression with clustering at both the property and year level as a robustness test to be sure the independent variables of interest were still significant and we found they were.

CONTROL VARIABLES

Prior studies on urban land values and investment returns have identified a variety of correlates. In order to isolate the effects of walkability, we introduced controls for many of them. To identify necessary controls we reviewed 35 published papers that model rent, value or returns for various property types. We cite many of them under Walkability as a Determinant of Urban Land Values. There is a good deal of variation in the controls used in the literature, but most fall into five dimensions: accessibility, physical characteristics of the building, neighborhood features, taxation and services, and

overall market conditions. More rarely, owner, renter, lease, and property management characteristics are included. For this study, we used one or more controls from each of the five common dimensions.

The NCREIF market index was used to control for overall market conditions. As noted, appraisal smoothing was not an issue because the index and the returns for individual properties were both appraisal based (Fisher and Geltner 2000). Regional employment growth was used as a measure of local demand. Growth of the regional building stock (for each property type) was used as a measure of local supply. Regional occupancy rates were used to control for the balance between supply and demand. We also used a regionally disaggregated NCREIF market index as a substitute for regional occupancy rates but they produced similar results (see Robustness Checks). Dummy variables were used to control for regional location. We tried both CBSA and State dummy variables and found that state controls produced better though similar results. Any factor not otherwise controlled and which varied systematically by state was controlled by the state dummies. This includes climate and demographics, which could affect the degree to which walkability is valued by building users. Building size, stories and age data from NCREIF were used to control for individual property characteristics. Property crime rates at the city-level published by the U.S. Department of Justice for 2006 were used to control for security conditions. Effective tax rate paid by each property was computed from NCREIF tax expenditure and property value data and was used to control for the cost of local government services.

We also controlled for regional accessibility from each property's location. Locations may be more walkable because of the higher local accessibility that comes from the higher density normally associated with increased regional accessibility. It was therefore important to control for regional accessibility. We did this by using three proxies for regional accessibility: a dummy for whether or not the property was within ½ mile of a fixed rail transit station, the mean travel time to work by all modes of travel from homes in the census tract of each study property, and the 2007 population density in the block group where each study property was located. Transit station locations were obtained from the US Bureau of Transportation Statistics and Google Earth, journey to work times were obtained from the 2000 US Census Transportation Planning Package, and density was obtained from the US Census. We would have used traditional gravity-based and distance to CBD measures but it was infeasible to obtain them for our large number of study properties (Song 1996, Geurs and Wee 2004). Nevertheless, Levinson (1998) has demonstrated that journey to work time is a good proxy for gravity-based accessibility measures and according to Heikkila and Peiser (1992), accessibility depends on urban density. We also controlled for regional congestion and mobility levels by using CBSA density, which we found to be a good proxy for more specific congestion measures which are not available for all the regions studied.

REGRESSION MODELS

OLS regression models were used to test our hypotheses. We used log transformed dependent variables to reduce skewness and facilitate interpretability of the coefficients.

All models were of the following form:

> Financial performance = f (walkability, regional supply, regional demand, regional property market conditions, national property market performance, individual building characteristics, local security conditions, property tax rates, density, transit access, journey to work time, regional congestion, state location)

Data were cross-sectional and time-series. The number of observations in any particular regression depended on the specific variables used because of missing variables (null values) for some data points for some properties. Since our focus was on the relationship between walkability and economic outcomes, we were primarily concerned with the coefficient and significance for Walk Score and

control variables that could be affecting its relationship with the dependent variable. The R-squares were of secondary importance as the models were not developed for predictive purposes.

Table 3 gives the correlations among the regressors. None were strongly correlated indicating a lack of multicollinearity problems.

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
1. Walk Score	1														
2. REG_EMP	-0.11	1													
3. SUPPLY	0.04	0.09	1												
4. OCC_CBSA	-0.04	0.25	-0.15	1											
5. npitotret	0	0.02	-0.44	0.11	1										
6. age	0.25	0.09	-0.17	-0.01	0.08	1									
7. sqft	0.07	-0.01	-0.02	0	-0.03	0.08	1								
8. Floors	0.46	-0.1	0.07	-0.14	-0.03	0.1	0.24	1							
9. floors2	0.32	-0.08	0.04	-0.08	-0.01	0.06	0.27	0.89	1						
10. propcrime	-0.04	0.09	0.09	-0.02	0.01	-0.02	0.04	-0.02	0.01	1					
11. proptax	-0.03	-0.14	0.19	-0.13	-0.17	-0.06	0.02	0.08	0.04	0.09	1				
12. BGPOPDEN	0.35	-0.09	0.03	0.07	0	0.14	0.04	0.36	0.25	-0.14	-0.01	1			
13. transithalf	0.51	-0.15	-0.02	-0.04	0.02	0.24	0.11	0.46	0.31	-0.05	0.04	0.39	1		
14. travhomework	-0.19	0.01	-0.07	0.14	0.01	-0.05	-0.01	-0.13	-0.08	-0.21	-0.15	0.04	-0.1	1	
15. MSADEN	0.33	0.19	-0.16	0.11	0.02	0.25	0.05	0.25	0.17	-0.39	-0.12	0.51	0.3	0.18	1

ANALYSIS AND RESULTS

MARKET VALUE

Table 4 presents our results for market value. In every model but industrial, the coefficient for Walk Score was positive and significant. A 1 unit increase in Walk Score produced a 0.9, 0.9 and 0.1 percent value premium for office, retail and apartment properties, respectively. All else being equal, an office property with a Walk Score of 80 was worth 54 percent more per square foot than an office with a 20 Walk Score. For retail and apartment properties, 80 Walk Score properties were worth 54 percent and 6 percent more, respectively.

We were unsurprised to not find a walkability premium for industrial properties. Most of the industrial properties in the dataset were warehouses and the non-industrial uses and pedestrians associated with walkability probably conflict with the trucks, trains, and noises typical of warehouse districts.

It was also interesting to find that walkability had a relatively small positive effect on apartment properties. As noted above, prior research has found both positive proximity and negative disamenity effects on residential property values from nearby non-residential uses, with the disamenity effects increasing as non-residential uses get closer to homes. Our findings suggest that these mixed effects could well have been present in our dataset, especially since the Walk Score protocol assigns the highest score to apartments with the most types of non-residential uses within ¼ mile. In these circumstances there could be insufficient distance between the apartments and nonresidential uses to fully extinguish negative externalities. We suspect the reason we did not see this effect in the other uses was that the noise, traffic, security and other disamenities from nonresidential uses may have more disutility for apartment dwellers than for the users of the other property types. It appears however, that any disamenity effects did not fully offset the positive proximity effects from walkability on apartments. On net, walkability was associated with higher apartment values.

Table 4: Regression results for log of market value

	All Types	*Office*	*Retail*	*Apartments*	*Industrial*
WALK SCORE	0.011***	0.009***	0.009***	0.001**	0.001
REG_EMP	0.050***	0.018***	0.056***	0.062***	0.035***
SUPPLY	0.052***	-0.038**	-0.118	0.028**	0.036*
OCC_CBSA	1.301***	1.684***	2.799***	-0.497*	-0.412*
NPITOTRET	9.060***	8.909***	10.021***	10.709***	3.347***
AGE	-0.011***	-0.011***	-0.001	-0.017***	-0.011***
SQFT	1.37e-06***	6.83e-07***	2.06e-06***	1.56e-06***	1.77e-06***
FLOORS	0.063***	0.043***	-0.060*	0.032***	0.188***
FLOOR2	-0.001***	-0.000***	0.023***	-0.000***	-0.129***
PROPCRIME	-0.000***	-8.25e-07	4.67e-06	-0.000***	-0.000***
PROPTAX	-30.562***	-58.452***	-0.102***	-22.492***	5.829
BGPOPDEN	-4.11e-07	5.33e-07	5.52e-06	1.18e-06*	3.46e-06
TRANSITHALF	0.182***	0.176***	0.292***	0.086***	0.276***
TRAVHOMEWORK	-0.006***	-0.002	0.002	-0.011***	-0.014***
MSADEN	0.041***	0.178***	0.010	0.201***	0.099***
STATE	Not shown	not shown	not shown	not shown	not shown
Number of obs	20638	6343	2174	4637	7484
R-squared	0.58	0.57	0.73	0.63	0.65
Prob > F	0.000	0.000	0.000	0.000	0.000

* = sig. at .05 level, ** = sig. at .01 level, *** = sig. at .001 level

Nearly all controls had the expected signs and most were significant. FLOORS was significantly negative in the retail model, but there may well be economic disadvantages to shopping centers with more than 2 or 3 stories due to functionality and convenience issues (Brown 1999).

NET OPERATING INCOME

Table 5 presents our results for net operating income (NOI). Since property values are normally a function of the income they produce, we expected higher market values to be associated with higher incomes and that is what we found. For each 1 unit increase in Walk Score, we found that NOI was 0.7 percent higher for office, 0.7 percent higher for retail, and 0.1 percent higher for apartments. There was no difference for industrial, consistent with our findings for market value.

Comparing properties with 80 and 20 walk scores, NOI per foot would be 42 percent higher for office and retail and no different for apartments. For each of these types, the higher incomes were insufficient to fully explain the higher values. However, as we will see in the next section, an additional portion of higher market values can be explained by lower cap rates, which increase value independent of NOI.

Table 5: Regression results for log of net operating income

	All Types	*Office*	*Retail*	*Apartments*	*Industrial*
WALK SCORE	0.010***	0.007***	0.007***	1.67e-06	0.001
REG_EMP	0.029***	-0.007	0.034***	0.057***	-0.003
SUPPLY	0.072***	-0.008	0.027	0.022*	0.129***
OCC_CBSA	1.468***	2.403***	5.094***	0.317	-0.059
NPITOTRET	0.248	-0.822	1.961	2.690***	-3.660***
AGE	-0.011***	-0.012***	-0.003***	-0.018***	-0.013***
SQFT	1.34e-06***	6.52-07***	2.14e-06***	1.56e-06***	1.75e-06***
FLOORS	0.059***	0.040***	-0.031	0.025***	0.189***
FLOORS2	-0.001***	-0.000***	0.015***	-0.003**	-0.120***
PROPCRIME	-0.000***	0.000**	4.48e-06	-0.000***	-0.000***
PROPTAX	-24.657***	-42.094***	-4.458	-17.972**	3.018
BGPOPDEN	-1.65e-06**	2.05e-06	3.99e-06	1.47e-06**	6.10e-06
TRANSITHALF	0.138***	0.155***	0.357***	0.030	0.189***
TRAVHOMEWORK	-0.005***	0.004	-0.006	-0.015***	-0.012***
MSADEN	0.039**	0.115***	0.026	0.177***	0.134***
STATE	Not shown	Not shown	Not shown	Not shown	Not shown
Number of obs	20048	6112	2140	4588	7208
R-squared	0.47	0.41	0.64	0.52	0.53
Prob > F	.0000	.0000	.0000	.0000	.0000

RETURN ON INVESTMENT

Table 6 gives the results for appreciation, income and total returns for all properties types combined. The models had low r-squares, but as stated above this was not a concern since the models were not developed to make predictions, but rather to examine the relationships between Walk Score and the dependent variables.

A one point increase in Walk Score increased the appreciation rate by 2 basis points and reduced income returns by 0.7 basis points. Income return is analogous to the cap rate, so in effect investors were willing to accept a .007 percent lower cap rate and pay .007 percent more per dollar of income for each unit of increase in Walk Score. For an 80 versus 20 Walk Score property this converts into 1.2 percent faster appreciation per quarter and a 0.42 percent lower cap rate.

Total return is the sum of appreciation and income returns. According to the third model, for every 1 unit increase in Walk Score, total returns increased by 1.3 basis points, which as it should be, is equal to the sum of the Walk Score coefficients in the appreciation and income return models. However, the Walk Score coefficient in the total return model was insignificant suggesting that higher appreciation and lower income returns offset one another, resulting in a statistically neutral effect on total returns.

We used the same controls in the return models as we did in the market value and NOI models. We only expected the regional and national economic variables (REG_EMP, SUPPLY, NPITOTRET, OCC_CBSA) to be significant, but we included all the controls to demonstrate that the Walk Score coefficients were not erroneously inflated from an under-specified model. As expected, the economic controls were significant and had the expected signs. Most other controls did have signs that were plausible and were significant in many instances. The most significant effects among these were from property tax rates which increased cap rates and lowered appreciation and total returns.

Table 6: Regression results for return measures for All Types

	Appreciation	*Income*	*Total*
WALK SCORE	0.00020**	-0.000067***	0.00013
REG_EMP	0.01221***	-0.00151***	0.01051***
SUPPLY	-0.01575***	0.00181***	-0.01359***
NPITOTRET	2.46899***	-0.42886***	2.00151***
OCC_CBSA	0.31385***	-.00133	0.30779***
AGE	-0.00025**	6.13-06	-0.00024**
SQFT	5.81e-09*	5.25e-10	6.24e-09*
FLOORS	0.00014	-0.00005	0.00011
FLOORS2	9.59e-07	-3.98e-07	2.11e-07
PROPCRIME	-5.12e-07	3.50e-07*	-1.86e-07
PROPTAX	-4.44518***	0.86066***	-3.58919***
BGPOPDEN	1.46e-07	-5.66e-08**	8.36e-08
TRANSITHALF	0.01094**	-0.00402***	0.00666
TRAVHOMEWORK	-.000424*	0.00010	-0.00053*
MSADEN	0.00141	-0.00036	0.00111
STATE	not shown	not shown	not shown
Number of obs	14603	14605	14603
R-squared	0.16	0.08	0.13
Prob > F	0.0000	0.0000	0.0000

* = sig. at .05 level, ** = sig. at .01 level, *** = sig. at .001 level

Similar models were produced separately for each type of property. Table 7 gives the Walk Score coefficients from these models. For appreciation and income returns, the results for separate property types were not as clear-cut as in the All Types models. Walkability did not significantly affect appreciation returns, except in Offices where the effect was positive. Apparently, some of the higher value associated with walkable offices was first capitalized during the study period. For retail and apartments, on the other hand, the walkability premium must have been priced into the market prior to the study period. Walkability significantly lowered income returns for retail and apartments but not for offices and industrial. The results for total returns by property were most consistent with the All Types model and indicated that walkability did not significantly change total returns. Overall, these results indicate that walkability neither diluted nor inflated total returns over the past decade.

Table 7: Walk Score Effects on Returns by Property Type

	Office	*Retail*	*Apartments*	*Industrial*
Appreciation	0.00032*	0.00007	-0.00005	0.00008
Income	-0.00005	-0.00012**	-0.00009***	-0.00002
Total	0.00027	-0.00018	-0.00014	0.00006

* = sig. at .05 level, ** = sig. at .01 level, *** = sig. at .001 level

The lower income returns and cap rates help explain the higher market values that cannot be fully explained by higher NOI. Recall, for example, that retail properties had 0.9 percent higher market values and 0.7 percent higher NOI for each additional unit of Walk Score. Holding risk constant, a higher NOI should produce an equivalent effect in percentage terms on market value. However in this case, there was an additional value increment over and above what can be explained by higher NOI and that additional increment can be explained by lower cap rates. In fact, the combination of an NOI that is 0.7 percent higher than the mean for our dataset and a cap rate that is 0.012 percent lower than the

mean in the dataset increases the value of a hypothetical property by 0.9 percent, which is precisely the value premium that we found. So it appears that the higher retail value associated with higher Walk Score values can best be explained by a combination of the higher NOI and the lower cap rates that were observed in the data. The same is true for Apartments. Apartment NOI was not increased by walkability but market value was. Again, the difference can be explained by the lower cap rates we found using the Apartment income returns model. The Walk Score coefficient in the Office income returns model was insignificant. However, if it were correct, it would be large enough to explain half the walkable office market value premium that could not be explained by higher NOI. So, generally, the data appear to support the proposition that the walkability premium is driven by a combination of higher NOI and lower cap rates.

ROBUSTNESS CHECKS

We tested the robustness of our results by producing models for various subsets of our data.

First, we separated the data by the four NCREIF regions and produced models that included all property types using the same regressors as in our original models. The Walk Score coefficients for the market value and NOI models were significant for all regions and nearly identical to the coefficients for our original All Types models given in Tables 4 and 5. We also found no significant effect from walkability on total returns for the East, West and South, which is what we found when all regions were examined together. However, total returns were significantly higher for more walkable properties in the Midwest due to significantly higher appreciation returns. In the Midwest, a one point increase in Walk Score increased appreciation by 0.5 basis points, which converts to 0.3 percent faster appreciation per quarter for an 80 versus 20 Walk Score. So in general, the effect of walkability on Value, NOI and total returns were similar for all regions except for the Midwest where its effect on total returns was significantly positive. Walkability had positive effects in every region.

We also separated each type of property into those above and below the median value for their type and combined all the properties into two groups, one with above median valued properties and one with the below median valued properties. Each group contained the same share of each type as in our original All Types models. We then produced models for value, NOI and returns, again using our original regressors, to see if walkability had different effects on more or less valuable properties. In all the regressions Walk Score had significant coefficients with the same signs as in our original models but with larger absolute value in the more valuable properties. For example, the coefficients for value and NOI were 0.008 and 0.007 in the higher value properties model but only 0.002 and 0.001 in the lower value one. The effects on appreciation and total returns were very similar in each case, but the effect on income returns/cap rates was larger for higher valued properties (-0.00006 v. -0.00005). This test could indicate that walkability is a superior good, but nonetheless it remained significant when tested separately on higher and lower valued properties.

Finally, we created separate All Types models for the most and least walkable cities, as determined by Front Seat using the walk scores for all properties in each city. The most walkable cities were New York, Boston, San Francisco, Washington DC, Chicago and Philadelphia. The least were Jacksonville, Nashville, Charlotte, Indianapolis, Oklahoma City, Memphis, Fort Worth, Kansas City, San Antonio, El Paso, Austin and Phoenix. The Walk Score value coefficients were significantly positive in both models, though larger in the Least Walkable model than in the Most Walkable model (0.010 v. 0.009). The same was true for NOI (0.010 vs. 0.008). Perhaps there is an additional premium for walkability in the less walkable regions. For investment returns, walkability had no significant effect on total return in both groups, as we found for all cities taken together (Table 6). The result for income returns (cap rate) was notable. In our original model we found a significantly negative coefficient (lower cap rate) for Walk Score. We found a similar result in the most walkable cities, but no significant effect in the least walkable ones. It appeared that the walkability premium in the most walkable cities was attributable

to a combination of higher NOI and a lower cap rate, while in the least walkable cities the walkability premium could be fully explained by a higher NOI and investors seemed unwilling to accept a different cap rate for more walkable properties. Overall, our findings held up and were very similar in the most and least walkable places.

Because the data had characteristics of an unbalanced panel, we also tested our hypotheses using the random effects panel regression model. It controls for omitted variables that differ between cases but are constant over time and for omitted variables that may be fixed between cases but vary over time. As shown in Table 8, the Walk Score coefficients in all the panel models were very similar to those found with the general multiple regression models, though slightly smaller in most cases. For income and appreciation returns, the coefficients were smaller but in the same direction.

Table 8: Walk Score Effects on Returns by Property Type

	Panel Regression	*OLS Regression*
Market Value	0.008***	0.011***
NOI	0.010***	0.010***
Appreciation	0.00011	0.00020**
Income	-0.00002	-0.00007***
Total	0.00006	0.00013

* = sig. at .05 level, ** = sig. at .01 level, *** = sig. at .001 level

One final concern we had was to be sure that the results were not artifacts of any differences in real estate trends that might have existed across regions. For example, we wanted to be sure that the return results were not driven by having the more walkable cities appreciate slower or faster than the less walkable cities. We could accomplish this by using a metropolitan scale NCREIF return index in the models. However, since national trends in occupancy rates and the NCREIF index have been historically correlated, we thought that CBSA_OCC would control for year to year differences in returns at the metropolitan level as well. However, to be sure, we replaced CBSA_OCC with the NCREIF return index disaggregated to the metro scale in our All Types models. The change had virtually no effect on the value, NOI and return models, except the Walk Score coefficient was slightly lower in the income return model (-.00007 vs. -.00005), which only served to strengthen our initial findings.

SUMMARY AND CONCLUSION

We hypothesized that walkable properties had incomes and values that were as much or more and produced investment returns as good as or better than less walkable investments. We tested our hypotheses using 10 years of data for over 10,000 properties of various types from throughout the US. Table 9 summarizes our results and our hypotheses were mostly confirmed.

Walkability was associated with higher value for office, retail and industrial properties. These types of properties with a Walk Score of 80 were worth anywhere from 6 to 54 percent more than properties with a 20 Walk Score, depending on property type. Consistent with their higher values, we found higher net operating incomes for these types of properties as well.

Walkability did not have a statistically significant effect on total returns. We did see, however lower cap rates for more walkable retail and apartment properties. Apparently, investors were willing to pay more for each dollar of income produced by more walkable retail and apartment properties either because they viewed them as safer investments or because they anticipated superior income growth or slower depreciation.

Table 9: Summary of Results for 80 vs. 20 Walk Scores

Property Type	*Market Value*	*NOI*	*Appreciation per quarter*	*Income Return per quarter*	*Total Return per quarter*
Office	+54%***	+42%***	1.92%*	--	--
Retail	+54%***	+42%***	--	-0.72%**	--
Apartments	+6%**	--	--	-0.54%***	--
Industrial	--	--	--	--	--

* = sig. at .05 level, ** = sig. at .01 level, *** = sig. at .001 level, -- = insignificant effect

Finally, we should note what our findings do not include. First, the value figures do not include a public cost-benefit analysis of walkability which would address externalities to public health, air quality, traffic safety, and energy conservation. Our results do not address the advisability of promoting walkability as a matter of public policy. Second, our figures do not determine the relative profitability of more or less walkable property developments. We could not examine whether it costs more to develop walkable places and whether any such costs might exhaust the value premiums that were found. However, given the magnitude of the value premiums, it seems plausible that developers could profitably develop walkable properties. But any conclusions on this point must await the development of better information on the cost of developing in more walkable locations.

Investors, developers, policy makers and other stakeholders interested in RPI view walkability as an important goal for cities and property portfolios. However, as noted in our introduction, executives have expressed some concern that insufficient financial performance could be an obstacle to making what may otherwise be more sustainable and responsible property investments. We find no evidence, however, to support their concern. Rather, it appears that over the past decade walkable properties have performed on par with other property investments and could be superior investments for developers who can manage to capture some or all of the walkability premium that appears to exist in the US property market.

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APPENDIX A

The following description of the NACREIF properties and measures comes from material published by NCREIF on its website. More details are available at www.ncreif.org.

The qualifications for inclusion in the NACREIF dataset are:

- Operating properties only
- Property types - apartments, hotels, industrial properties, office buildings, and retail only
- Can be wholly owned or in a joint venture structure.
- Investment returns are reported on a non-leveraged basis. While there are properties in the NPI that have leverage, returns are reported to NCREIF as if there is no leverage
- Must be owned/controlled by a qualified tax-exempt institutional investor or its designated agent
- Existing properties only (no development projects)

An Operating Property is defined as follows:

a) For a newly developed property, operating is defined as reaching 60% occupancy or having been available for occupancy for a year from its certificate of occupancy (CO).
b) If a property has been recently purchased with a "redevelopment" strategy, and the property is undergoing substantial expansion or re-tenanting, rehabilitation or remodeling, the property is defined as operating when occupancy reaches 60%.
c) All existing properties (not recently developed or undergoing redevelopment as covered in a) or b) above) that are purchased regardless of current occupancy are defined as operating properties.

Two sets of data are collected. The first represents property specific descriptor information submitted when a property enters the database for the first time. The second dataset is collected quarterly and includes the components of return needed to calculate quarterly rates of return and index values. NCREIF collects considerably more data than what is required to calculate the NACREIF Property Index (NPI). Additional data are used in NPI data validation tests, to calculate additional statistical measures of performance, to develop operating benchmarks and for use in real estate research. Data are submitted in accordance with NCREIF's data submission manual, NCREIF Property Indexes Data

Collection and Reporting Procedures. The data NCREIF collects originates from the accounting and property management systems of Data Contributors.

NCREIF requires that properties included in the NPI be valued at least quarterly, either internally or externally, using standard commercial real estate appraisal methodology. Each property must be independently appraised a minimum of once every three years. Because the NPI is a measure of private market real estate performance, the capital value component of return is predominately the product of property appraisals. As such, the NPI is often referred to as an "appraisal based index."

The NPI quarterly, annual and annualized total returns consist of three components of return - income, capital and total.

The *Income Return* measures that portion of total return attributable to each NPI property's net operating income, or NOI. Net operating income (NOI) is gross rental income plus any other income less operating expenses - utilities, maintenance, taxes, property management, insurance, etc. The income return is computed by dividing NOI by the average daily investment for each quarter. The formula takes into consideration any capital improvements and/or any partial sales that occurred during the quarter.

$$\frac{\text{NOI}}{\text{Beginning Market Value} + 1/2\ \text{Capital Improvements} - 1/2\ \text{Partial Sales} - 1/3\ \text{NOI}}$$

The *Capital Return* measures the change in market value from one period to the next. A property's value can go up (appreciation) or it can decline (depreciation) depending on market forces. The formula takes into consideration any capital improvements and/or any partial sales that occurred during the quarter. When a property enters the Index, the capital return is not impacted until the second quarter of inclusion.

$$\frac{(\text{Ending Market Value} - \text{Beginning Market Value}) + \text{Partial Sales} - \text{Capital Improvements}}{\text{Beginning Market Value} + 1/2\ \text{Capital Improvements} - 1/2\ \text{Partial Sales} - 1/3\ \text{NOI}}$$

Total Return is computed by adding the Income Return and the Capital Value Return.

From: Ethington, Ruth on behalf of Planning
To: Cleveland, Julie
Subject: FW: FW: Plan Commission 6-29-20 Agenda Item #3 : letter opposing the Oscar Mayer Special Area Plan (OMSAP)
Date: Monday, June 29, 2020 3:26:24 PM

From: Lynette Jandl <lynettejandl@gmail.com>
Sent: Monday, June 29, 2020 2:16 PM
To: Kester, Dolores <dakester@sbcglobal.net>
Cc: Planning <planning@cityofmadison.com>; Andrew Statz <ajstatz2@madison.k12.wi.us>; Brad Cantrell <bacantrell@charter.net>; Eric Sundquist <erics@cows.org>; Jason S. Hagenow <jshagenow@yahoo.com>; Kathleen Spencer <klanespencer@uwalumni.com>; Keetra Burnette <keetraburn@gmail.com>; Ledell Zellers <ledell.zellers@gmail.com>; Lemmer, Lindsay <district3@cityofmadison.com>; Rummel, Marsha <district6@cityofmadison.com>; Nicole Solheim <nicole.solheim@gmail.com>; Heck, Patrick <district2@cityofmadison.com>; Abbas, Syed <district12@cityofmadison.com>
Subject: Re: FW: Plan Commission 6-29-20 Agenda Item #3 : letter opposing the Oscar Mayer Special Area Plan (OMSAP)

EXCELLENT!!!! Thank you so much for knowing all this and putting it out so clearly and emphatically.

On Mon, Jun 29, 2020 at 12:06 PM <dakester@sbcglobal.net> wrote:

> Greetings to Members of the Plan Commission:
> My family has lived on Winchester Street since 1982, a few blocks north of Aberg Avenue which is the northern-most street covered by the Oscar Mayer Special Area Plan (hereafter, OMSAP) at N Sherman Avenue. This is the Sherman Neighborhood, whose boundaries include most of the OMSAP area. We are a friendly and very mixed neighborhood—mathematicians and poets, multiracial, with diverse genders, some well off and some just getting by, dog friendly, pollinator friendly, multicultural, pragmatists and dreamers--all of which makes it a very interesting and neighborly place to live.
> Everyone near the old Oscar Mayer location knows, though, that there can be water in the basement, unpleasant vapors wafting in through sewer lines, unexplained deaths of younger women from leukemia and related illnesses, bad air, water that leaves calcified black residue in your toilet bowl (less now than before Well 7 was rebuilt), noisy airplanes—it goes with the flow of our daily lives.
>
> Industrial contamination on the OMSAP site
> People do not usually think about any of this in specific connection with the OMSAP area's subsurface contamination--a century of accumulated industrial chemical waste and residue from operations of Oscar Mayer and other industries. See this report just completed this month by Midwest Environmental Advocates, which summarizes thousands of pages of public sources about testing data for this contamination, and provides a map for its known locations: https://drive.google.com/file/d/1PWygqQ85zmXs1aCOM6wo4dNrclhniu_h/view?usp=sharing/.
> Here is the link to the Map:
> https://www.google.com/maps/d/drive?state=%7B%22ids%22%3A%5B%221pofUPrHHQtKW1WJbB7InDq1HBNZjdghq%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%221104617478283199373 32%22%7D&usp=sharing/.
> Untested areas of contamination are obviously not included in this report—in plumes, in groundwater, in much of the soil, in storm drains, in stormwater, etc.
> Is there a connection between this contamination and our Sherman Neighborhood? No one knows for sure because testing has not been carried out.
> Are there plumes of contamination being drawn daily toward well 7 at Schlimgen Avenue and N Packers Avenue, which since being rebuilt has a new and stronger pump? No one knows. Existing plumes have not been tracked.
>
> Air pollution
> Air pollution in the OMSAP area will greatly increase in the next few years. One source of added air pollution will be the F-35s when they come to Truax. The Air Force's Environmental Impact Statement (EIS) summarizing the impacts of bringing these F-35s to Madison says that greenhouse gases, measured in carbon dioxide equivalents (CO2e), are expected to jump from 9,263 tons per year to 21,741, an increase of 135%. The EIS says, "The annual airfield CO2e emissions would increase by approximately 12,478 tons or 135 percent. This is equivalent to adding an additional 2,438 passenger vehicles onto roads, driving 11,500 miles per year on average." (See EIS-WI, pp. 51 to 52.)
> Also, the diesel buses that Metro plans to use on the Northside of Madison will increase air pollution in this area. Whatever city staff may say about electric buses, there will be over 285 diesel buses at the future Metro site in the OMSAP area in the foreseeable future. City Planning, Metro, and MG&E propose to relocate many transportation and utility operations to the OMSAP area. MG&E will bring diesel truck traffic from MG&E fleet trucks.
> Meanwhile, whatever part of the Reich-Rabin-Meyer consortium that currently owns the northern portion of the old Oscar Mayer premises is busily pursuing a "vapor extraction" method to expel the trichloroethylene (TCE) vapors from Warehouse 43 which overlies the old Oscar Mayer "Spice Room," attempting remediation of a century of chemical contamination, in anticipation of a lucrative sale of these premises to Madison Metro for use as a "bus barn." (See, link to map of contamination, above in this email.)
> This is like a vacuum cleaner sucking up bad fumes and out-gassing them to the general ambient air of the Northside of Madison for as long as it takes. Thus TCE fumes are added to the mix of other bad pollutants in the Aberg Avenue areas for the foreseeable future.
> In addition to other impacts on everyone's health and safety, an important study just this month found that air pollution is tied to pregnancy risks, affecting Black Mothers Most: https://www.nytimes.com/2020/06/18/climate/climate-change-pregnancy-study.html?smid=em-share/.
> In short, this OMSAP encourages extensive new development of multistory housing and office space and other businesses in these areas—most intended to be "affordable" i.e. low income, and to provide jobs to economically disadvantaged families, including many people of color. The city calls this "equity." With all the old contamination and new air pollution in this area, is this equitable?
>
> Need for Greenspace and Proposal for 30 acre wetlands area
>
> The only greenspace available in this large OMSAP area is the Hartmeyer wetlands area, to which so far the city has added a few areas, but otherwise has turned a cold shoulder to the complete 31 acres of wetland and upland needed for a viable wetland ecosystem. Greenspace particularly for children needs to be close to where they live. Are City Planners not aware of the health benefits of adequate greenspace, particularly for the children who may be living in the new housing proposed in this Plan? Do they care?
> Quoting from Richard Louv's book, Last Child in the Woods:
>
> > "For children, nature comes in many forms. A newborn calf; a pet that lives and dies; a worn path through the woods; a fort nested in stinging nettles; a damp, mysterious edge of a vacant lot—whatever shape nature takes, it offers each child an older, larger world separate from parents. Unlike television, nature does not steal time; it amplifies it. Nature offers healing for a child living in a destructive family or neighborhood. It serves as a blank slate upon which a child draws and reinterprets the culture's fantasies. Nature inspires creativity in a child by demanding visualization and the full use of the senses. Given a chance, a child will bring the confusion of the world to the woods, wash it in the creek, turn it over to see what lives on the unseen side of that confusion. Nature can frighten a child, too, and this fright serves a purpose. In nature, a child finds freedom, fantasy, and privacy: a place distant from the adult world, a separate peace." — Richard Louv, Last Child in the Woods: Saving Our Children from Nature Deficit Disorder, Algonquin Books, 2008, p. 7.
>
> See, http://thiswaytonature.com/.
>
> The need for equity
> Is it equitable to place people most in need of jobs and housing in precisely some of the most contaminated and polluted areas on the Northside (possibly the most contaminated area in Dane County), and without adequate greenspace close by? (Much of the contamination remains untested and therefore undefined in scope and dimension.)
> Arguably, this is not responsible. Nor is it just, environmentally or otherwise.
> Please vote down this OMSAP until and unless it adequately addresses these issues, for our entire neighborhood including all our new neighbors who may live or work in any redeveloped OMSAP area.
> For further background, I have also attached comments made about other aspects of OMSAP for the Transportation Planning and Policy Board (TPPB) on May 4, 2020, and for the Housing Strategy Committee on June 25, 2020.
> Respectfully,
> Dolores Kester
> 1818 Winchester Street
> Madison, WI 53704
> Email: dakester@sbcglobal.net
> Tel. 608-249-1218
> Aldermanic District 12
> Member, Board of Directors, Wild Warner
> Member, Board of Directors, Sherman Neighborhood Association
> Member, Board of Directors, Historic Madison

--
Lynette

Lynette Jandl

Home 608-244-2858

Mobile 608-335-9493

Building the Political Reform movement

Starting with passing the We The People Amendment --

Which would overturn Citizens United
Information: http://wiuta.org/scwuta/
Donations: http://wiuta.org/scwuta/donate/

From: Ethington, Ruth on behalf of Planning
To: Cleveland, Julie
Subject: FW: Hartmeyer Natural Area
Date: Monday, June 29, 2020 3:18:56 PM

-----Original Message-----
From: Rick Bogle <rick.bogle@gmail.com>
Sent: Monday, June 29, 2020 2:56 PM
To: Planning <planning@cityofmadison.com>
Subject: Hartmeyer Natural Area

Please extend protection to all 30 acres. The preservation of natural areas is an incalculably precious gift to future generations.

Rick Bogle
Lynn Pauly

5133 Maher Ave.
Madison 53716
608 222 2348

From:	Ethington, Ruth on behalf of Planning
To:	Cleveland, Julie
Subject:	FW: Hartmeyer Wetlands
Date:	Monday, June 29, 2020 3:18:46 PM

From: Stalker Associates <katharinestalker@yahoo.com>
Sent: Monday, June 29, 2020 3:09 PM
To: Planning <planning@cityofmadison.com>; All Alders <allalders@cityofmadison.com>; fhna.ginny@gmail.com
Subject: Hartmeyer Wetlands

Please vote to save & protect all 30 acres of Hartmeyer Natural Area. We've learned through our mistakes that we can't get it back once it's gone.

Katharine Stalker
733 Engelhart Dr.
Madison, WI 53713

From:	Ethington, Ruth on behalf of Planning
To:	Cleveland, Julie
Subject:	FW: OMSAP
Date:	Monday, June 29, 2020 3:28:04 PM

From: Richard Jones <info@studioparan.com>
Sent: Monday, June 29, 2020 1:44 PM
To: allalders@cityofmadison.comk; Planning <planning@cityofmadison.com>; fhna.ginny@gmail.com
Subject: OMSAP

Alders. Planning commission,
I strongly support saving all 30 acres of the Hartmeyer Natural area, and keeping it as a natural preserve. I do also support Affordable Housing and know you as planners can find a way to meet both needs. Earlier this spring I visited the area on a lark as part of a bike ride to UPS/ BMOHarris and was concerned seeing surveyors work knowing that yet another piece of urban "wild" would soon get plowed over and filled in. I was amazed at the life I saw there in this pocket; throngs of crickets and spring peepers so loud! red wing black birds, the carcass of a deer, We all know wetlands are rich natural areas and benefit all city residents, human and nonhuman,. 6 acres would be an insult and only a painful reminder of what once was. Please preserve this little forgotten gem!
Richard jones

S T U D I O P A R A N

2051 Winnebago Street

Madison WI 53704

608-242-1111

www.studioparan.com

info@studioparan.com

From:	Ethington, Ruth on behalf of Planning
To:	Cleveland, Julie
Subject:	FW: Opposed to Adopting the Oscar Mayer Special Area Plan
Date:	Monday, June 29, 2020 3:29:07 PM

From: Lesleigh Luttrell <lesleigh.luttrell@gmail.com>
Sent: Monday, June 29, 2020 12:56 PM
To: Planning <planning@cityofmadison.com>
Cc: Renee Walk <renee.a.walk@gmail.com>; Abbas, Syed <district12@cityofmadison.com>
Subject: Opposed to Adopting the Oscar Mayer Special Area Plan

Dear members of the Plan Commission

I appeared before you at your in-person meeting on February 10 and at that time registered as neither in support nor opposition to the Oscar Mayer Special Area Plan. I brought to your attention several areas of concern from the Sherman Neighborhood as the Co-chair of our neighborhood association. And speaking on this point only for myself, I lobbied for the value of treating the area of the property at the corner of Aberg and Packers as a welcome to Madison for people coming from either the interstate or the airport.

Welcome to Madison indeed! I am strongly opposed to the OMSAP plan being presented to you this afternoon. That possibly welcoming corner is now known for sure to be contaminated by industrial chemicals. The use the city wishes to make of it is not even part of the Plan – as the city moves toward purchasing two buildings to serve as Bus Barn storage. Our neighborhood, which includes the bulk of the area in the plan is very concerned with contamination. Contractually the city is not able to do its own investigation before buying the property. Will other potential developers be happy to accommodate this restriction? This new information needs to be in the Plan.

Traffic remains a major concern for the neighborhood. The four major streets – N. Sherman, Commercial, Aberg and Packers are all crossed by railroad tracks. And the trains do continue to run. Neither Aberg nor Commercial are wide enough to accommodate two lanes in both directions. As presented in the current draft of the Plan, the highest density of housing is near Commercial while the North Transfer Point is near Aberg. N. Sherman was reconfigured some years ago to include space for bicyclists. The safety of everyone who is trying to move on or across the roads is not a small matter.

We are strongly in support of preserving the existing green space, including all 30 acres of the

Hartmeyer natural area, for reasons that many other people submitting comments today will be sure to provide.

I have been a participant in the public engagement process for the entire time, since the sale of OM was announced. I, and other Sherman neighborhood residents, have shared our concerns. Our Alder, Syed Abbas, has been an involved and strong advocate for the area since taking office. I am grateful to the work of other alders and citizen members of the committees who have carefully looked at the plan as presented to them. City staff have been mostly informative, but have given a strong impression of being unwilling to work with residents on addressing our remaining concerns. Certainly the final plan is not the worst possible – but it is not the best.

Thank you for your time and attention,
Lesleigh Luttrell
Co-chair Sherman Neighborhood Association

From:	Ethington, Ruth on behalf of Planning
To:	Cleveland, Julie
Subject:	FW: oscar mayer plan
Date:	Monday, June 29, 2020 3:20:03 PM

From: ljmeister <frdm1203@gmail.com>
Sent: Monday, June 29, 2020 2:45 PM
To: Planning <planning@cityofmadison.com>
Subject: oscar mayer plan

dear committee,

I am a 16 year tax paying, single parent, homeowner in Eken Park. this plan needs to include a 30 acre hartmeyer wetland preservation. the city did not survey the residents of Eken Park or any other community area with the exception of surveying 139 people of color. we all live here, pay taxes here and should be included in making up the plan. being presented this IS the plan...take or leave it is not community input.

building low income housing on top of " not sure but may possibly be contaminated ground" is not a good idea either.

opening a street to traffic from a road that is already dangerous to cross is wrong.

saying we have enough greenspace is not true. cherokee marsh might as well be in the next county....it is a significant distance to travel even with a running vechicle.

please. please save all of this wetland

laurie hean meister
2626 moland st
madison
608.669.1632

ps. i attended the meeting this was presented to last week and was not allowed to speak as I was never taken off of mute. therefore, I am sending my thoughts vis email.

From:	Ethington, Ruth on behalf of Planning
To:	Cleveland, Julie
Subject:	FW: Oscar Mayer Plan--
Date:	Monday, June 29, 2020 3:25:56 PM

From: Celesnik, Marion <gorcel1@att.net>
Sent: Monday, June 29, 2020 2:23 PM
To: Planning <planning@cityofmadison.com>; All Alders <allalders@cityofmadison.com>
Subject: Oscar Mayer Plan--

On the Hartmeyer site there are 8 acres of wetland and 6 acres of community space. For a development with such high density--2500 units-- the extra 17 acres of open space does not seem too much. New York City has density, but they also have Central Park to make it livable. Such a park would be an asset. Some of the dry upland would remain undeveloped and some of it developed for uses all the things people do in parks. Land land is needed for open space when people live in multi-units with no yards.

When I look at the Hartmeyer site I see a wonderful grove of mature oak trees near Roth St. Typically such oaks would be preserved by being left in an unmowed area. Would it be possible to leave this area unmowed if there is only six acres of park land for active use?

The plan calls 395 units of housing in the Hartmeyer parcel that is being referred to as affordable. We need affordable housing, but reducing the density of the entire OMSAP area by 395 units would only a reduction of 16 per cent. It should not be either/or. Either we have affordable housing or we have nature. We can have both. Make it the entire development a place people where want to live. We don't have to build all the housing we need on this Oscar site.

There is a "main street" planned on Commercial Av. But we need places where people can go without spending money. So leave space where people can picnic, or for a community garden. We have many low income housing complexes on the North side, and they all have small community centers. Leave room for that possibility.

How would the Hartmeyer Property be purchased?
--- Fundraising options would need to be spearheaded by the City. Please consider all fundraising options to purchase.
--- I understand that there is a parkland fund that the developers of residential property contribute to in lieu of donating acreage. We've had many new building go up including one on corner of Fordem and N Sherman, and now a new one on Dryden Dr, along with much other housing on the East side. Is there not funding

available from the park land fund?

In addition, we need a thorough evaluation of contamination on the site.

We've all seen housing that did not age well. Let's do the best for this unique area.

Thank you,

Marian Celesnik
1734 Sheridan Dr.
Madison, WI, 53704

We have all seen housing complexes that did not age well.

From:	Ethington, Ruth on behalf of Planning
To:	Cleveland, Julie
Subject:	FW: Save 30 acres of Hartmeyer Natural Area as a Nature Park & Shared Community Open Space
Date:	Monday, June 29, 2020 3:28:27 PM

From: Nancy Worcester <naworces@wisc.edu>
Sent: Monday, June 29, 2020 1:16 PM
To: Planning <planning@cityofmadison.com>
Subject: Save 30 acres of Hartmeyer Natural Area as a Nature Park & Shared Community Open Space

PLEASE, PLEASE, PLEASE work to keep the precious 30 acres of the Hartmeyer area as wetlands and an area for Madisonians to enjoy and protect the amazing wild life that is there.

As soon as we heard about this campaign, we decided that we would do whatever we could to support the effort to save these 30 acres. As you know, preserving land is one of the most important things we can do to keep Madison a special place. Good accessible places to enjoy nature are so important for our individual and community mental health and are important for educating future environmental activists about the importance of saving our environment. Planning all the other good things about the Oscar Mayer development will be enhanced by making a beautiful natural spot core to that.

Please let us know any ways we can support this work.

Thank you.

Sincerely,
Nancy Worcester & Mariamne Whatley
Professors emeritae
UW-Madison

From: Ethington, Ruth on behalf of Planning
To: Cleveland, Julie
Subject: FW: Save all 30 acres
Date: Monday, June 29, 2020 3:26:45 PM

-----Original Message-----
From: Dylan Hughes <dylanhughes@gmail.com>
Sent: Monday, June 29, 2020 2:12 PM
To: Planning <planning@cityofmadison.com>
Subject: Save all 30 acres

Save All 30 Acres!

Out of roughly 500 acres the OMSAP plan only saves the legal minimim wetland and 6 acres of upland habitat that is also supposed to serve as a public park, which would destroy this wonderful natural area ecosystem.
Please add a proposed 400 units of new affordable housing as part of 2300 new housing units in surrounding redevelopment areas, not in the wetland! Save this last historic wetland gem and green open space as a Nature Park and Shared Community Open Space connected by bike and walk paths for residents of affordable housing, nearby neighborhood families, school kids, business employees and clients, and a growing population on the north side to enjoy!

From:	Ethington, Ruth on behalf of Planning
To:	Cleveland, Julie
Subject:	FW: TONIGHT Plan Comm Agenda Item 3: Save all 30 acres of Hartmeyer Natural Area
Date:	Monday, June 29, 2020 3:28:52 PM

From: Michael D. Barrett <mikeb@urbanthoreau.com>
Sent: Monday, June 29, 2020 1:03 PM
To: Planning <planning@cityofmadison.com>
Cc: All Alders <allalders@cityofmadison.com>; Mayor <Mayor@cityofmadison.com>; wsjopine@madison.com; dbrogan@isthmus.com; tlna@groups.io; SASYNA-Discussions <SASYNA-Discussions@yahoogroups.com>; Einpc <einpc@yahoogroups.com>; fhna.ginny@gmail.com; paul_noeldner@hotmail.com; lfalkenstein@isthmus.com; Wachter, Matthew <MWachter@cityofmadison.com>; Stouder, Heather <HStouder@cityofmadison.com>
Subject: TONIGHT Plan Comm Agenda Item 3: Save all 30 acres of Hartmeyer Natural Area

Dear Plan Commissioners,

You have before you a wonderful opportunity to preserve & create a beautiful greensward in the middle of the city: The Hartmeyer Natural Area. Please put aside the edifice complex and give the Northside—and all of us—room to breath. As some of you know, I have long been a proponent of urban infill + density. Still am. But you have so many massive & underutilized parking lots all along N. Sherman, Northport and Packers Ave just begging, screaming, CRYING OUT for redevelopment like this. Build there! Double-, triple, quadruple-up on the use of the infrastructure already built up along those corridors. Turn them into livable boulevards instead of the expressways for speedy suburbanites they currently are.
As for the 30 acres: We need nature among us. For environmental health, public health, healthy childhood development, indeed everyone's health!

Please think forward here, not in some 1980s urban plannerly geometric box.

Save the 30!

More: https://isthmus.com/news/news/pristine-is-overrated/

Sincerely,
Mike Barrett
2137 Sommers Ave.
Madison WI 53704
http://www.facebook.com/help/delete_account

CHAPTER 15

The Myth of Concentrated Poverty

STEPHEN STEINBERG

All of us have stories that shape our worldview and lurk behind our scholarship. In 1996, I went to Chicago with my son, who was applying for admission to the University of Chicago. We stayed in the Marriott Courtyard on the edge of the Loop and took a taxi to campus. The driver told us that Lakeshore Drive was congested with traffic, and he made a detour through city streets. Within minutes, the window of the cab framed Cabrini-Green, identifiable by a massive rectangular sign in the middle of an open plaza. There it was—Cabrini-Green—the "project" that had achieved iconic notoriety through sensational press reports of anarchy and violence. The realization that Cabrini-Green was situated on the edge of Chicago's legendary Gold Coast provided an epiphanic moment: It was obvious why Cabrini-Green was slated for demolition. It occupied immensely valuable real estate that was in the way of the growth machine. As two geographers (Wyly and Hammel 1999, 711) put it, Cabrini was "an island of decay in seas of renewal."

Let me say up front that I am no housing expert or policy wonk. Had I been immersed in the social science literature, I would have known that Cabrini-Green was a shameful relic of a discredited policy that segregated blacks in soulless high-rise "projects" where the problems of concentrated poverty metastasized and took on a life of their own. No public housing had been built since the Nixon administration, and under the Clinton administration, HUD Secretary Henry Cisneros instituted a policy with a seductive (and hypocritical) acronym: HOPE VI (short for Housing Opportunities for People Everywhere). The stated policy objective was to replace "severely

distressed" public housing with low-rise apartments that would be mixed-income and mixed-race. Architects and urban planners at the University of Chicago had advanced a "new urbanism," whose architectural features would blend residents of public housing into the surrounding neighborhood. Against the specter of crime-ridden, high-rise buildings that "warehoused" the poor and exacerbated their problems, we had the promise of decorous row houses that would foster integration in terms of both race and class. A compelling imaginary, to be sure.

Then again, if I had known still more, I would have known that my first instinct was correct: that there were grassroots groups fighting the Cabrini-Green demolition as a blatant land grab that served the interests of developers and politicians; that trampled over the rights and interests of the residents; and that would leave the displaced families worse off as they gravitated to other densely poor neighborhoods, further away from jobs, transportation, and services they relied upon (Bennett and Reed 1999; Goetz 2000; Wright 2006). To these critics, it was clear: HOPE VI was another instance of "Negro Removal," a term created by James Baldwin in the early 1960s and embraced by Malcolm X to express opposition to the urban renewal projects of that period. This same charge was leveled by a few scholars who argued vociferously that the demolition of Cabrini-Green was a calamity for the 14,000 African Americans who would be forcibly evicted from their homes (Wright 2006, 169). For these critics, the promise of building mixed-race and mixed-income housing was only a smokescreen to conceal what amounted to the cleansing of cities of the black underclass.

So let me throw down the gauntlet: Does HOPE VI amount to Negro Removal by another name, one that would rid the urban landscape of the black nemesis and clear the way for the developers? This raises another necessary question: Were scholars and policy wonks complicit in providing indispensable legitimacy for this policy?

Let me be clear: I do not impugn the motives of those who imagine that HOPE VI and other mobility projects advance the cause of integration. Nor is it merely a question of unintended consequences. Rather, the thrust of my critique is on *the political uses* of scholarship for ends that may be disavowed by the scholars themselves. And if we are to follow the maxim made famous by Watergate, we have to follow the trail of money, which leads to government agencies and foundations that bankrolled and promoted knowledge production that is politically useful. Then, too, there are the subtle and pernicious ways in which social scientists share the racial mindset and worldview that spawn victim-blaming discourses and retrograde policy.

Negro Removal is an apt term, because it calls to mind another historical case where the state was implicated in ethnic cleansing: *Indian Removal*. Some will dismiss this claim as political hyperbole, if only because Indians

were banished from white society, whereas the ostensible purpose of mobility projects is to enhance racial and class integration. Yet in the case of Cabrini-Green, the rule for one-to-one replacement of low-income housing was abrogated by Cisneros, the allotment of low-income housing was severely scaled back, and stringent tenant screening criteria, including strict work requirements, assured that only a handful of displaced residents would be allowed to return to the small allotment of public housing units in the new mixed-income development (Smith 2006; Wilen and Nayak 2006, 221). Cabrini-Green was relegated to oblivion, and the new development was refurbished with a new name: Parkside of Old Town. By September 2007, a local real estate blog offered this rhapsodic account of the neighborhood's transformation from slum to gold coast:

Parkside of Old Town Brings Development to Cabrini

Cabrini was once one of the most notorious neighborhoods in Chicago. When public housing was built in the neighborhood, many of the old homes were destroyed and families left the neighborhood.

During the 1980s and 1990s, crime and drugs levied a heavy cost on the neighborhood, making it one of the most dangerous in the city.

Today, Cabrini is the scene of one of the largest real estate redevelopment projects in all of Chicago. Most of the housing projects are gone now, replaced by cranes and new developments that offer a mix of luxury condominiums and affordable housing for former residents of public housing in the neighborhood.

One of the largest developments underway in Cabrini is Parkside of Old Town. Buyers can choose from condos and townhomes that start at $300,000. The townhomes sell for as much as $700,000.

This 18-acre development will offer park space with basketball courts and a playground. There are also several other new condo developments around the neighborhood that are attracting new families and bringing back the neighborhood feel that characterized Cabrini before the construction of public housing.

Many new residents choose Cabrini for the excellent location just minutes from downtown. Prices in the neighborhood are competitive when compared to other areas of north Chicago such as the Gold Coast and Streeterville.[1]

Efforts of community activists and years of litigation had all came to naught, and according to one estimate, 97% of dislocated families moved into areas that did not meet either the "low poverty or racial integration requirements set out in the relocation rights contract" (Wilen and Nayak 2006, 220). Broken promises: another similarity to the nation's treatment of Native Americans.

Indian Removal is commonly remembered as an event involving the infamous Trail of Tears, the forced movement of the Cherokees from their cultivated farms and communities in Georgia to wasteland in Oklahoma in 1837. Actually, this was the last of a series of removals of tribes to Indian Country, and the removal policy was contested in legislatures, courts, and public venues for many years. Indeed, the 1830 Indian Removal Act was the subject of contentious public debate, and the Removal Act passed by a slim margin (28 to 19 in the Senate, 102 to 97 in the House). Why, one might ask, didn't President Jackson, famous for having massacred Indians in battle, simply send in the cavalry and make removal a fait accompli? According to a recent history of Indian Removal:

> Jackson made certain that Indians knew he meant business, but he also wanted to avoid violent unrest. He had political worries as well. Realizing that many throughout the country would not approve unvarnished removal, he undertook to convince the public about the policy's wisdom. He recruited religious leaders and well-known proponents of Indian rights…to explain that removal was actually in the best interests of the Indians. In his first Annual Message he informed Congress of the pressing need for Indian removal and asked for money to accomplish it. As he habitually did in his public statements, Jackson framed his sentiments in humanitarian terms about the good effects removal would have on Indians. (Heidler and Heidler 2007, 23–4)

Thus, the first Moving to Opportunity program was born! As with today's HOPE VI demolitions and mobility programs, a façade was erected to maintain the pretense that this was a legal program and that the Cherokees went voluntarily. In *Race, Racism, and American Law*, Derrick Bell (2008, 688) provides quite another account:

> The pressures from state and public officials created two factions among the Cherokee Nation: the Treaty Party, comprising the elite mixed bloods, and the Ross faction, supporters of Chief John Ross. Ross, who had the support of most of the Cherokee people, was incarcerated while the Treaty Party representatives negotiated the treaty. The treaty, ratified at New Echota, the capital of the Cherokee Nation, by only 20 persons, ceded all the tribal land in Georgia in exchange for 7 million acres of land in Indian Territory.

Some 16,000 of the 17,000 Cherokees signed a petition to Congress protesting the treaty, but to no avail. After gold was discovered in Georgia in 1829 (again inviting comparison to soaring real estate values in Chicago's postindustrial economy), pressures mounted to get rid of the Cherokees, the last of the so-called civilized tribes. With that ignominious act, the nation established a historical precedent for ethnic cleansing.

To my eye, HOPE VI looks like Negro Removal, and Negro Removal looks like Indian Removal, though dispossession and displacement are more ingeniously camouflaged today than in times past. Nobody accuses blacks of being "savages" incapable of being assimilated into white society. Well, that's not entirely true. We speak euphemistically of "the urban jungle," and social scientists who portray the inner city as a haven of pathology, disorder, and immorality, are only a word away from declaring its inhabitants "uncivilized." Indeed, Dinesh D'Souza (1995,, 554) made precisely this allegation in *The End of Racism*. According to D'Souza, racial disparities are due, not to racism, but rather to a "civilizational gap" between blacks and whites. It is precisely because the trope between "savage" and "civilized" endures that we have one African American "who is articulate and bright and clean and a nice-looking guy" who inhabits the White House, at the same time that we have another 1.1 million African Americans who are in the slammer!

Like Indian Removal, Negro Removal, especially in the post-civil rights era, required intellectual and moral justification. Enter the social scientist, with a new arrow in the quiver: "concentrated poverty." The concept of "concentrated poverty" has provided the crucial theoretical underpinning for HOPE VI and other mobility programs.[2] The hapless victims of these policies are not relocated west of the Mississippi, but they are removed from urban neighborhoods that are ripe for development. Dispossession and displacement are done in the name of deconcentrating poverty.

My purpose now is to subject the concept of "concentrated poverty" to critical scrutiny, and to examine the origins and evolution of this idea, its embedded assumptions, its consequences, and above all, its political uses.

Let us begin by distinguishing between concentrated poverty as fact and as theory. The fact of concentrated poverty—that poverty is spatially concentrated—is well known and easily documented. It is easy as well to chart trends, and to show that poverty, especially black poverty, has become more concentrated in recent decades (Jargowsky 1997; Massey and Denton 1993; Massey and Kanaiaupuni, 1993; Orfield 2002; Wilson 1987). But there is also a *theory* of concentrated poverty that postulates a causal relationship between concentrated poverty and a host of social ills. This is graphically portrayed in Edward Goetz's *Clearing the Way* (2003, 160). As can be seen in Figure 15.1, concentrated poverty is conceptualized as an intermediary factor between the structures that engender inequality and the "tangle of pathology" that is associated with the underclass (Clark 1965). Thus, structural factors are acknowledged as primary causes of concentrated poverty: economic restructuring, suburban exclusionism, disinvestment in central-city neighborhoods, discrimination in housing markets, and government policies (e.g., public housing). On the other hand, concentrated poverty takes on causal significance all its own, leading to the familiar litany of pathologies: drug use, violent crime, high school dropout rates/poor school

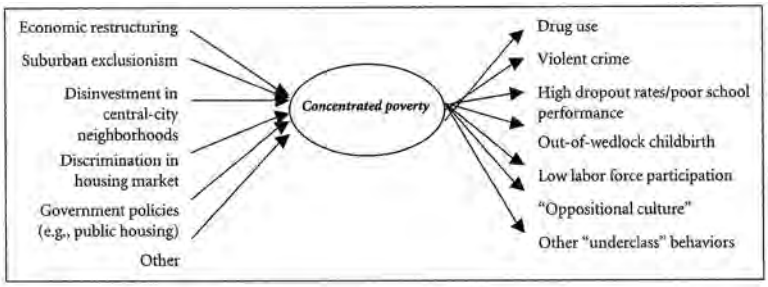

Figure 15.1 The cause and consequences of concentrated poverty. Source: Edward Goetz (2003, 22).

performance, out-of-wedlock childbirth, low labor force participation, and "oppositional culture."

I submit to you that this theory is deeply flawed: simplistic, misleading, pregnant with false or unsubstantiated assumptions, and dangerous as a predicate for social policy. In the first place, "concentrated poverty" may be new to social science, but it plays on the familiar image of "the huddled masses," generously portrayed as yearning to breathe free. It also plays on the trope of those "dangerous classes," corrupted by the city, mired in pathology, and a menace to civil society. Marx provides yet another perspective on urban concentration: It was precisely the density of the factory and of urban life that provided the ecological prerequisite for class consciousness and political action. Thus, as two housing advocates have noted, "It is debatable whether integration efforts bestow on poor African-Americans economic or sociological benefits or, rather, destroy nonwhite political power, sense of community, culture, and neighborhood-based support systems" (Wilen and Stasell 2006, 249).

As a theoretical construct, concentrated poverty entered academic discourse with William Julius Wilson's *The Truly Disadvantaged* (1987), though I think that Wilson gets too much credit—or blame, depending on your point of view—for this mistaken idea.[3] There are only three citations to "concentrated poverty" in the index of Wilson's book, mostly alluding to increases in concentrated poverty, followed by some speculation—and it is sheer speculation, without a shred of evidence—about the adverse consequences of "social isolation" or the putative "concentration effects." Moreover, in *The Truly Disadvantaged,* Wilson did not sever the relationship between concentrated poverty and the structural forces that engender it. His policy recommendations all pertain to addressing the root causes of concentrated poverty, through policies of full employment and a WPA-style jobs programs aimed for the ghetto poor. However, as concentrated poverty emerged as the

latest rage in poverty research, Wilson got on the bandwagon, embracing both the theory of concentrated poverty and the idea that removal of the poor from neighborhoods of concentrated poverty is a policy desideratum.[4]

The chief exponents of removal policy have been a new breed of Moving to Opportunity (MTO) advocates and social capital theorists who make the fatal mistake of treating concentrated poverty as a factor sui generis—one that is a determinant of all these "urban" pathologies, and therefore one that can be remedied through targeted social policy.[5] Herein lies the epistemological fallacy. With a sleight of hand, all these powerful structural forces that involve major political and economic institutions are conflated into a single factor—concentrated poverty, which is now identified as *the* central problem in terms of analysis and social policy. As Goetz (2003, 160) shrewdly observed, "Over time, focus has shifted away from the causes of concentrated poverty toward the behavior of the poor in response to concentrated poverty." Thus, instead of dealing with the root causes of concentrated poverty, as Wilson did in his initial intervention, we have one study after another treating concentrated poverty as though it were an independent and self-sustaining factor, and thus the theoretical underpinning for policies whose central purpose is to deconcentrate poverty.

But what evidence is there that *concentrated* poverty has explanatory significance above and beyond the effects of poverty itself? Do we know that concentration magnifies or exacerbates poverty? Studies that advance the theory of concentrated poverty (e.g., Jargowsky 1997; Massey and Kanaiaupuni 1993) devote pages proving that poverty has become more concentrated, especially for African Americans, but they utterly fail to prove that concentration per se has an additive effect.[6] To demonstrate this, they would have to show that poor people who do not live in high-poverty census tracts—and who are not warehoused in soulless high-rise apartment buildings (like mine in New York City)—are far less prone to aberrant behavior than poor people who live in concentrated poverty. But we know from studies of rural poverty, whether in Appalachia or upstate New York or the farm belt, that all of these "urban" pathologies run rampant there. Alas, urbanists have fallen into the trap that Manuel Castells (1979) cautioned against long ago: of positing the reified "city" or aspects of urban ecology as the cause of "urban ills," rather than a political economy that engenders deep and persistent inequalities. And before we dynamite housing projects, obliterating the homes of 100,000 families, shouldn't there be convincing evidence that deconcentration will have the transformative effects that are presumed?

In short, the theory of concentrated poverty is based on a faulty theoretical premise—namely, that concentrated poverty can be severed from its root causes and projected as the focal point of social policy. It is rather like diagnosing a melanoma as a blemish and treating it with a palliative.

Therefore, it should not be surprising that follow-up studies of relocation programs have failed to provide convincing evidence that deconcentration has the expected outcomes. At least this was what Goetz (2003, 256) found, based on a rigorous and exhaustive review of the extensive body of MTO research. He concludes his book with a simple, categorical judgment: "The scattering of poor people, in itself, accomplishes little."[7]

Yet the cheerleaders of deconcentration turn a blind eye to the wide body of research that goes against their pet idea. This point is made forcefully in a recent article in which David Imbroscio (2008) challenges "the Dispersal Consensus" (DC for short). Imbroscio levels three criticisms:

1. The DCers trample over what Chester Hartman has called "the right [or ability] to stay put" (quoted in Imbroscio 2008, 114). Although the mobility programs typically recruit people whose participation is "voluntary," they can hardly be seen as exercising free choice when their only alternative is to live in neglected housing and underserved communities. Imbroscio writes (115): "Preferences for dispersal become nothing more than a desperate response to a set of desperate conditions, with little to do with any real notion of freedom of choice." Of course, in the case of HOPE VI demolitions, "choice" is a moot issue.
2. The DCers are guilty of overselling evidence, based mainly on studies of the Gautreaux program in Chicago and the MTO demonstration. Critics (Crump 2002; Goetz 2003) insist that these studies are flawed methodologically since participants are self-selected and heavily screened, vitiating comparisons to the people left behind. To make matters worse, the MTO studies typically report small findings that are wildly overstated as corroborating the claim that deconcentration has beneficial effects.
3. The DCers ignore or slight the evidence that points to viable alternatives to HOPE VI and mobility programs, such as the work of thousands of Community Development Corporations in providing affordable housing for low-income people and contributing to the revitalization of inner-city neighborhoods. Instead of contemplating strategies for ameliorating social problems where the poor live, the DCers obstinately cling to the idea that "opportunity" entails moving the poor as far as possible from the temptations and pathologies of the inner city. For all of their methodological sophistication, DCers seem oblivious to the fact that the efforts of the Community Development Corporations impact on entire communities, whereas MTO programs, at their very best, impact on the lives of a paltry number of individuals, deliberately scattered across the urban landscape: See responses by Xavier de Souza Briggs (2008, 131–37), John Goering and Judith Feins (2008, 139–48), and rejoinder by David Imbroscio 2008,149–54).

Not only do mobility programs fail to magically transform the lives of the small number of people who are delivered from "the hood," but studies find that relocatees are often worse off than before. With or without a Section 8 voucher, most relocatees gravitate to other poor neighborhoods where rents are low, thus moving the poor from one neighborhood of concentrated poverty to another, ironically validating the fears of the NIMBYs (Rosin 2008). Nor do the suburbs provide the magic formula. Xavier de Souza Briggs (2005, 36), a leading advocate of mobility programs, concedes that "many minority families that moved to the suburbs in the 1990s, even if they became homeowners, did not escape the pattern that contains poverty, school failure, and job isolation in particular geographic areas." In a study of a HOPE VI relocation program in Tampa, Florida, Susan Greenbaum and her collaborators (In press) found that even when relocatees acknowledged that their housing was improved, "many…expressed feelings of loss and nostalgia for the neighborly relations they had in the public housing complexes where they used to live. In addition to enjoyment, patterns of mutual assistance and exchange among the residents had made survival easier on their very low incomes and offered a sense of community" (16–17).

There is an addendum to the narrative I began with. When my son was enrolled at the University of Chicago, living on Kimbark Avenue, his back porch provided a telescopic view of a strip of low-rise, subsidized housing that had been built on 55th Street. Architecturally, the houses were a New Urbanist nightmare: fortified bunkers, walled off to the street, with a small, internal courtyard. My son observed that on Sunday mornings, women dressed in their Sunday best would stand on the corner for a long time, waiting for a bus that would transport them, alas, back to "the hood" where their church was located.[8]

All of this raises the question of whether HOPE VI and mobility programs are predicated on a demonized image of the poor within those "severely distressed" housing projects. Implicitly and often explicitly, theorists and planners have in mind aberrant individuals who are the source of violence and disorder. Obviously, one can compile statistics that present a bleak picture of gangs, drugs, violence, et cetera, et cetera. But another picture emerges from ethnographic studies: of ordinary people, desperately poor and struggling to "survive"; of networks of resourceful women and extended families engaged in mutual support; of neighborhoods and churches that provide people with a sense of belonging and access to services and resources; and of activists and advocacy groups who valiantly represent the poor against the powerful institutions that seek their expulsion.[9] Why is it, one might ask, that social scientists valorize the solidarities of white ethnics as "Gemeinschaft," whereas in the case of racial minorities, these same solidarities are disparaged as "hypersegregation" whose only remedy is "deconcentration by demolition"

(Crump 2002, 581)? These scholars forget that when white ethnics were poor (like the Italians who were the first occupants of Cabrini-Green), they produced the same litany of "pathologies" associated with today's minorities. If these "pathologies" were not as prevalent or as enduring, this is because these white ethnics had the advantage of white privilege, were not encircled by discriminatory barriers, and consequently were not mired in poverty for generations (Marcuse 1997). As a result, they were able to fulfill the American Dream by moving to the very suburbs where the DCers want to place poor blacks who do not have the resources, and invariably encounter the bitter hostility of their neighbors (Moore 2008; Thompson 1998).

In short, a policy predicated on the claim that the demolition of their homes will advance the interests of the very people whose homes are being destroyed is a preposterous sham. And here we confront the cold reality: HOPE VI is not an antipoverty program, but on the contrary, one that stomps over the rights and interests of the poor and sacrifices them on the altar of political and economic power. This is how an agency whose historic mission was to provide housing of last resort for the poorest Americans is now responsible for the demolition of that very housing (Marcuse 1978). As with Indian Removal, this policy must be implemented in such a way as not to foment violent resistance or "political problems." This is where the theory of deconcentrated poverty comes into play, which is trotted out in Congressional hearings and in Congressional Research Service reports, to paste over the patent injustices and to make a virtue of the unconscionable.[10]

It is not my contention that minus the theory of deconcentrated poverty, HOPE VI would not exist. Powerbrokers heed the sage advice of experts only when it is in their interest to do so. We have to be savvy about the political uses of the theory of concentrated poverty, which is invoked wherever the poor occupy valuable real estate that is coveted by developers, and which is part of the neoliberal agenda of reclaiming urban space that earlier was relinquished to the nation's racial and class pariahs. Neil Smith (1996, 45–47) has aptly called this "the revanchist city." Atlanta is in the process of demolishing most public housing, including housing occupied by stable families with regular employment.[11] And in New Orleans, even housing projects that escaped the ravages of Katrina were bulldozed despite the anguished protests of their residents.[12] While bodies were still being plucked from the floodwaters, William Julius Wilson and Bruce Katz (2005) appeared on the *News Hour*, declaring that Katrina presented a historic opportunity to break up concentrated poverty.[13] And when Xavier de Souza Briggs posted a petition on an urban sociology listserv under the title "Moving to Opportunity in the Wake of Hurricane Katrina," nearly 200 urban experts rushed to affix their signatures, oblivious to the political uses of their dogma.[14]

A final point. Let us concede for the sake of argument that deconcentration and mobility programs provide better housing and schools for some poor people, and advance the cause of racial integration. Even so, we have to ask whether the political appeal of such policies is that they divert attention away from the vastly greater problem: the plight of the millions of poor people who still inhabit ghettos and barrios, whose plight has been exacerbated by the dismantling of the welfare state, and who are now threatened with gentrification and other assaults of the neoliberal city. As Susan Greenbaum (2006, 111) has commented, "A poverty alleviation policy that excludes the majority cannot be judged a success." Not only do mobility programs provide relief only for a select few, but they provide an ideological façade for the neoliberal war against the poor and for disinvestment in the inner city. As Goetz (2003, 252) writes: "When accepted as a political strategy, deconcentration justifies the redirection of community development efforts away from the declining housing stock of poor neighborhoods and/or away from poor residents." Thus, instead of comprehensive policies that would revitalize these communities, provide jobs—the sine qua non of antipoverty policy—and include grassroots organizations in the reconstruction of their communities, we have demonstration projects that, at best, can help a select few. Furthermore, as I suggested above, the dispersal of the minority poor makes it all the more difficult for them to mobilize politically and to put pressure on political and economic elites to live up to their responsibility to address the problems in their own back yard. Instead, in the name of deconcentrating poverty, they use dynamite as a remedy and transfer the problem to somebody else's back yard. And they do this with the indispensable sanction of urban experts who labor under the illusion that they are advancing the project of racial and economic justice.

Acknowledgments

Thanks to Greg Squires and Chester Hartman for welcoming a genuine and vigorous debate of housing policy. I first heard about the ravages of HOPE VI from Adolph Reed, who has provided me with invaluable perspective from both the ivory tower and the trenches on Chicago's extraordinary campaign to obliterate its public housing communities. Susan Greenbaum was immensely helpful as I delved into the literature on mobility programs. So too were Derrick Bell, Jane Collins, Mark Harvey, Micaela di Leonardo, Jeff Maskovsky, and Devah Pager. In writing this paper, I have profited from the incisive scholarship anthologized in *Where Are Poor People to Live? Transforming Public Housing Communities*, ed. Larry Bennett, Janet L. Smith, and Patricia Wright.

Notes

1. http://www.chicagorealestateblog.com/parkside-of-old-town-brings-development-to-cabrini/
2. Clearly, HOPE VI and the MTO programs are different policies. However, the logic, the embedded assumptions, and the overriding policy objective are the same: to deconcentrate poverty and to move people as far as possible (as Stefanie DeLuca and James Rosenbaum assert in their paper in this volume) from the dense urban neighborhoods that putatively spawn pathology and prevent the poor from developing the social capital that would help them escape poverty.
4. For an incisive account of the origins of Wilson's "spatial turn," and the adoption and elaboration of the notion of "concentrated poverty" among urban specialists, see Crump 2002.
5. Despite the fact that Wilson's claims were altogether speculative and unsubstantiated, he provided indispensable authority and legitimacy to Chicago's plans to dismantle public housing. As far as I know, Wilson never took a public position during the acrimonious debated that raged around the decision to demolish Cabrini-Green, the Henry Horner Homes, and the Robert Taylor Homes. Yet his name and scholarship were frequently invoked by advocates of demolition. According to one account, his concept of concentrated poverty was "the ironclad precept" for housing officials and developers in enacting plans for the demolition of public housing (Bennett, Hudspeth, and Wright 2006, 195).

   In the debate over the 1999 Chicago Housing Authority's "Plan for Transformation," which contemplated the downsizing of public housing, Alexander Polikoff, the senior staff counsel of Business and Professional People for the Public Interest, made the following argument: "For me the case made by Harvard's William Julius Wilson is entirely persuasive…. Wilson speaks of the 'social pathologies' of ghetto communities and adds that, if he had to use one term to capture the differences in the experience of the ghetto poor from the poor who live outside, it would be 'concentration effect'—meaning social pathologies generated when a neighborhood is composed exclusively of ghetto poor…. [S]o persuaded am I of the life-blighting consequences of Wilson's concentrated poverty circumstances, that I do not view even homelessness as clearly a greater evil" (quoted in Wright 2006, 159–60). As far as I know, if Wilson objected to the use of his name and scholarship to justify the implosion of public housing in Chicago, he never made his dissent public.
6. There is a very large body of studies (extensively reviewed in Goetz 2003; Imbroscio 2008) that purport to evaluate the efficacy of mobility programs. By far, the most influential have been James Rosenbaum's studies of the Gautreaux program (for example, Rosenbaum and DeLuca (2000, 1–8); Rosenbaum, DeLuca, and Tuck (2005); coauthored article in this volume). Other recent interventions include Briggs (2005); Goering (2005); and a recent symposium in the *American Journal of Sociology*, including Clampet-Lundquist and Massey (2008); Ludwig et al. (2008); and Sampson (2008). From the standpoint of the politics of knowledge production, the sheer amount of research on this dubious policy initiative is itself worthy of examination, as are the massive institutional subsidies. Clampet-Lundquist and Massey acknowledge support from no fewer than twelve foundations, governmental agencies, and research centers (including two grants from the National Institute of Mental Health and two from the National Science Foundation). Clampet-Lundquist and Massey begin by acknowledging that studies of the MTO housing mobility experiment "heretofore has not provided strong evidence to support the hypothesis of neighborhood effects on economic self-sufficiency among adults," and assert that selective bias casts a shadow of doubt on all these studies (2008, 107). However, instead of questioning the logic and assumptions, not to speak of the ideology, that undergird the MTO project, Clampet-Lundquist and Massey, like others before them, assume that their measures must be defective, and launch into yet another hairsplitting and word-parsing exercise to redeem the MTO concept.

   On the other hand, a number of studies have challenged the logic, methodology, and findings of the MTO canon. These include: Bennett and Reed (1999); Bennett, Smith, and Wright (2006); Crump (2002); Goetz (2003); Greenbaum (2006, 2008); Greenbaum, Spalding, and Ward (in press); Imbroscio (2008); Joseph, Chaskin, and Webber (2007); Reed and Steinberg (2006); Reingold, Van Ryzin, and Ronda (2001); Thompson (1998); and Tienda (1991).
7. See Tienda (1991) for a thoughtful analysis of the logic of "concentration effects." Tienda faults existing studies for failing to specify the mechanisms through which these putative effects

are enacted. She further argues that "if resource stock problems are the *root causes* of social dislocation observed in ghetto neighborhoods, then solutions focused on neighborhood revitalization might be more productive than those aimed at rehabilitation of individuals" (252, italics in original). Tienda concludes on a skeptical note: "Given the nature of available data, it is virtually impossible to determine with any degree of confidence the existence of neighborhood effects on poverty behaviors" (258).

8. The full passage reads: "A responsible antipoverty policy should not lead with the demolition of low-cost housing and the forced relocation of the poor. This nation's history with the urban renewal program suggests that without complementary actions to reduce exclusionary barriers and incentives that foster and facilitate growing socioeconomic disparities—and the geographic expression of those disparities—the scattering of poor people, in itself, accomplishes little."
9. Nor is this an anomalous event: see McRoberts (2005).
10. Early ethnographic studies that portray the poor or public housing in a more positive light are Liebow (1967); Stack (1974); Susser (1982; Williams and Kornblum (1985, 1994). For a review of recent ethnographic studies of poverty, see Morgen and Maskovsky (2003).
11. For example, Maggie McCarty (2007). "Reauthorization of the HOPE VI Program," Hearing Before the Subcommittee on Housing and Community Opportunity (June 21, 2007): http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_house_hearings&docid=f:37561.wais
12. Springston (2007) and Pearlstein (2007).
13. For a glimpse of the protest before the New Orleans City Council, see http://www.youtube.com/watch?v=cMBWAXfGsc4
14. http://www.pbs.org/newshour/bb/weather/july-dec05/rebuild_9-16.html
15. The petition can be found at http://www.newvisioninstitute.org/movingOppotunityScholarsPetition.pdf.

    For critical commentary, see Imbroscio (2008); Reed and Steinberg (2006).Also, see the Symposium on Hurricane Katrina, including Susan Greenbaum, Sudhir Alladi Venkatesh, and Xavier de Souza Briggs (2006, 107–28), and Nicolai Ouroussoff's column in the *New York Times* (September 14, 2008) on the failure of planning in the reconstruction of New Orleans. http://www.nytimes.com/2008/09/14/weekinreview/14ouroussoff.html?pagewanted=print

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From: Erich Eifler <eweifler@gmail.com>
Sent: Monday, June 29, 2020 3:55 PM
To: All Alders
Subject: Coolidge St.

I would like to voice my support for amending the Oscar plan to include text, and updates to the map, that indicate that the Coolidge and Packers intersection restricts all new cut-through automobile traffic into Eken Park, while providing for full bike and pedestrian access.

Thank You.
-Erich Eifler